

# FAITH AND THOUGHT

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# Faith and Thought

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

Vol. 91

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## REPORT OF THE COUNCIL FOR THE YEAR 1959

*read at the*

### ANNUAL GENERAL MEETING

(16 May 1960)

The Chairman, Dr R. J. C. Harris, indicated at the beginning of his report that it covered the period from June 1959 to May 1960. His first task was to extend congratulations to Dr D. M. MacKay, on behalf of the Council and Fellows and Members of the Institute, on his being appointed to the Granada Chair of Communication at the University College of North Staffordshire. Dr Harris wished Professor MacKay well in this new and important post.

Since last year four parts of *Faith and Thought* had appeared, but the one basic difficulty was still the supply of adequate material. The Chairman urged all present to do everything in their power to promote the healthy circulation of the *Journal*.

Last year Mr Gordon Barnes had spoken at a University meeting in Birmingham, and his paper 'The Concepts of Randomness and Progress in Evolution' had been published in full in Vol. 90, part 3, of *Faith and Thought*. The Langhorne Orchard Essay Prize for 1958 was awarded to Mr H. L. Ellison, and his essay was published in Vol. 91, part 1 of the *Journal*. Only two entries had been received for the Schofield Prize Essay 'Faith's Debt to Scepticism', but the adjudicators had deemed one of these to be worthy of the prize, and this would be published in due course. At this juncture the Chairman made an appeal for Fellows and Members to help as far as possible in the collection of suitable

material for the *Journal*. He thanked Mr David J. Ellis, the Editorial Secretary, for all his efforts in this direction.

The highlight of the coming summer was to be a Symposium in London, on Saturday, 16 July, taking as its overall topic 'Faith and Thought'. It was to last for the whole day, beginning in the late morning, and ending after tea. Papers were expected on such subjects as 'Man as a Mechanism' by Professor MacKay, 'Egypt and The Bible' by Mr Kenneth Kitchen, 'Modern Trends in Psychiatry' by Dr Ernest White, 'Some Reflections on the Evolution Controversy' by Mr Gordon Barnes, and 'The Wisdom Literature of the Old Testament' by Mr H. L. Ellison. These papers, and perhaps some of the discussion, would be published later in *Faith and Thought*. The cost of this day to each participant would be of the order of 10s. 6d. to 12s. 6d., inclusive of meals, and a full house was expected.

*The Council.* No member of the Council had sought to resign, and the President, Professor F. F. Bruce, the four Vice-Presidents, Professor Anderson, Archbishop Gough, Professor Guthrie, and Dr White, had not indicated that they wish to give up their offices. Dr Harris asked, therefore, if he might move from the Chair that they be confirmed in their respective offices for a further year.

Before calling upon the Secretary to the Council to present the Statement of Accounts on behalf of the Honorary Treasurer, the Chairman expressed the thanks of the Institute to Mr T. C. Burtenshaw, and acknowledged its debt to him for all his efforts.

A vote of thanks was then passed to Mr Francis F. Stunt, Honorary Treasurer, and the proposal for his reappointment was both seconded and carried. The Auditors, Messrs. Metcalfe Collier, Blake and Co, were then accorded a vote of thanks, and were duly reappointed.

The Chairman then concluded by saying that the Council was still mindful that *Faith and Thought* remains an infant, with all the problems of growth and form associated with infancy. The Council, in thanking God for His guidance over past years, continued to pray that it may always look to Him for wisdom to nurture the Institute, and to determine only those steps which are in accordance with His will.

## THE PRESENT POSITION OF THE INSTITUTE AS TO TAXATION

It is hardly necessary to observe that the law affecting Charities is obscure. When, however, the law of Income Tax infringes upon Charity Law, strange results can follow. To most of us the ways of tax inspectors and accountants are a mystery, and certainly the treatment meted out to the Institute was puzzling, to say the least.

We start with the position that the Institute is, and always has been, a charity in the eyes of the Law. Tax, therefore, was recovered upon any investment income, e.g. the dividends received upon any of the prize funds. In addition, the Institute recovered tax upon any covenanted gift made by a donor over and above the amount of his annual subscription as a Fellow or Member. Why, then, could not the Institute claim back tax in the case where a Fellow or Member elected to make a covenanted gift equal to his annual subscription? The answer was, apparently, that he was receiving in return some benefit in the form of the annual volume of Transactions, galley proofs, the privilege of attending meetings, and the like. In vain the Institute pointed out that the charitable objects of its work could only be carried out by discussion and study contributed by Fellows and Members. The Tax Inspector was adamant, and, as at the time before the recent war, the rate of tax was low, and the number of covenanted subscribers small, it was decided not to prosecute the Institute's case on Appeal.

In recent years with tax at a very high rate various friends have offered to make their subscriptions under deed of covenant. The Council therefore decided again to enter the legal lists. Our friend Mr George Cansdale's deed of covenant was the 'casus belli', and on appeal to the Special Commissioner of Income Tax, the Institute's contentions were upheld. The result is that anyone may now covenant his subscription, and by so doing either increase the income of the Institute, or reduce the actual cost to himself of subscribing. Naturally, the Institute would prefer the former! However, it is suggested that contact should be made with the Secretary by all who pay or suffer tax at the standard rate.

It is important to remember that the recovery by the Institute of tax on covenanted subscriptions has nothing to do with the charging

of a subscription as a necessary and proper expense by an individual in computing his own taxable income. Under the recent Finance Act it is now possible for certain of our Fellows and Members to charge their subscriptions as an expense, and it follows that in such cases procedure by Deed of Covenant is not applicable or indeed advantageous to the subscriber. Those who can invoke this Act must be able to show that their participation in the work of the Institute is necessary for the proper discharge of their professional duties. A clergyman could obviously claim this benefit, and also, one supposes, a teacher of theology or apologetics, whether in school, or college. Each case would require individual examination.

It is hoped that this note may assist the Institute's friends in their attempts to increase the income of the Institute, and also to reduce the real cost of subscribing to those who find their limited incomes already over-stretched. It should be stressed that the Institute continues to be a proper and deserving object of charitable aid from general charitable funds. Many people make 'block' covenants in favour of some general charity, arranging that the annual amount plus the tax recovered thereon shall be distributed as they may decide from year to year. The Institute already benefits from such sources, and would like to gain a larger share of such support.

FRANCIS F. STUNT  
*Honorary Treasurer*

D. M. MACKAY, B.S.C., PH.D.

## Divine Activity in a Scientific World \*

### I. INTRODUCTORY

#### *The Being of God*

Our Christian Faith is in One who transcends in His nature every category of human description. We know of Him only what He has been pleased to reveal to us; and it must be one of our controlling convictions that there is infinitely more to the Being of God than anything or all that our minds can now apprehend of Him. This is no less so because we believe that in Jesus Christ God Himself walked among us, 'in the form of a servant', 'in Whom dwelt all the fulness of the Godhead bodily'.

'He who hath seen me hath seen the Father', said Jesus. No more perfect revelation of God could have been given to man in human terms. That is our faith. But this of course is not to say that there is no more to the Being and Nature of God than He revealed of Himself in Jesus Christ. On the contrary, 'as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts than your thoughts'. We have to steer a middle course between the arrogance of the word-perfect evangelist who 'has the Plan of Salvation off pat', and the inverted pride of the man who refuses to have truck with Biblical propositions because 'God is far greater than any propositions our little minds can produce'. If God has spoken, woe betide us if we spurn or ignore His revelation. Yet we cannot remind ourselves too often that our most Biblical statements about God represent, at best, selective projections, of one aspect at a time, of a Being whose total activity probably has aspects unrevealed and utterly unthinkable to us.

#### *The Precarious Logic of Theology*

Our position, then, in attempting to make any comprehensive or systematic statements about God, is logically very insecure. It is just no good our quoting a series of inspired scriptures, and then supposing

\* Revised version of a paper presented to the Annual Conference of the Research Scientists' Christian Fellowship in September 1954.

that the guarantee of inspiration will extend infallibly to all our apparently logical deductions from them. For in dealing with Biblical sentences about God we are rather like a man confronted with a large number of photographs or projective drawings of portions of a girder bridge. In each he finds a spider-work of lines at all angles to one another. Unless he realises at the outset that the subject has more dimensions than his two-dimensional representations of it, he will flounder in contradictions as soon as he tries to relate his different pictures. Even when he knows this he may still find grave difficulties in fitting all into a single whole, and may indeed be driven to doubt that they depict one and the same subject, unless he discovers and remembers from what angle each projection has been made. In the same way our own theological efforts, no matter how conscientious, are continually beset by the risk that we may be trying to force the wrong kind of fit between Biblical utterances; mistakenly assuming that if all are valid, then all must be valid from the same standpoint at the same time.

Our own position in fact is worse; for the analogy would be closer if the original subject of the two-dimensional representations had not just three but an indefinite number of dimensions, of which our projections represented an unspecified proportion.

### *The Problem of Logical Standpoint*

When therefore we seek, as we are in duty bound, to apply our minds to inspired scriptures, we have to face two distinct tasks. One is, of course, to trace the logical consequences of inspired doctrine. But the other and prior task, without which, as a preliminary, the first may be positively misleading, is to identify as best we can the logical standpoint or 'angle of projection'—the conceptual frame or language system to which belong the terms in which the doctrine is expressed. Only then can we know to which other questions and doctrines it can be deductively related, and avoid being subtly misled into deducing uninspired nonsense from inspired statements.

The trouble is that the statements of scripture, not unnaturally, are seldom if ever labelled with their logical standpoint. This we are left to infer from the context or the terms in which they are expressed. The problem is not of course a new one, nor has the proper solution remained unrecognised, at least implicitly. Spurgeon for example declared himself 'an Arminian (emphasising man's responsibility) in the pulpit and a Calvinist (emphasising God's Sovereignty) on his knees';

and throughout the ages the saints have testified how, in their experience, certain revealed truths have acquired practical meaning in some situations and have seemed quite irrelevant in others, although superficially all might have been thought to have logical and even paradoxical relevance in both kinds of situation.

### *Having it Both Ways?*

But although the Church has long recognised in practice the distinction between such doctrinal 'paradoxes' and flat contradictions, most theoretical attempts to build them into theological systems have left much to be desired. 'Having it both ways' is the summary description most likely to spring to the outsider's mind; and who can blame him? No logician could fail to sympathise with David Hume's outraged denunciation of some of his Calvinist contemporaries' pretensions to harmonise Divine sovereignty with human responsibility. Intellectual dishonesty, with all its fruits, finds fertile soil to this day in minds brought up to affirm unexplained verbal contradictions in the name of Revelation. Not, indeed, that I would diminish one whit the force of Calvin's original testimony to these doctrines. On the contrary, I believe that many of our present troubles in the boundary-field of science and theology, especially with regard to the doctrine of man, have been exacerbated by forgetfulness of the aspects of the truth proclaimed by Calvin, and by St Augustine and St Paul before him. Some such doctrine of God's sovereignty, as I shall argue later, is indeed not only a possible but a necessary complement of the doctrine of our responsibility, when once the different logical standpoints or language-systems of each have been identified. It is not the doctrine, but the improper discipline of arguments revolving around it, which deserves to be deprecated.

### *The Aim of the Present Paper*

The present paper then has two needs in view, though with no illusions that it will meet them. First, there is the need for clarification of our own thinking about Divine activity in relation to humanly known events. But secondly, and surely close to all our hearts, there is the need to remove gratuitous stumbling-blocks in the path of thinking enquirers in the field, not only of science, but of theology itself. On the one hand, there is ultimately no stopping-point in our enquiry, short of the age-old mystery of our freedom under God's sovereignty. This

nettle, I believe, we must grasp, even if in consequence we are only stung to more thought and prayer. On the other hand, while we could never dare wish to diminish the true 'offence of The Cross', I believe that something could even now be done to diminish some unnecessary 'offences' due to faults in our own logic, and so make the really irreducibly offensive issues of the Christian Gospel stand out the more clearly.

It goes without saying that this paper will leave all our genuine mysteries as mysterious as ever. Its aim is but to re-focus our attention on their nature.

## 2. THE BASIC PROBLEM

### *The World of Objects*

How shall we put the basic problem that confronts us? To each of us there comes a continual flood of events of experience—sights, sounds, itches, pains. These events are not wholly chaotic. They cohere sufficiently to evoke in us a constantly changing but inherently stable awareness of a 'world of objects' acting on us and being acted on by us. Our ordinary human dialogue and most of our thought takes this world of objects rather than the events of experience as its logically given starting-point.<sup>1</sup> Here then is our problem: What is the status of this world of objects? By what thought-model may we properly organise our thinking about it and its relation to persons such as ourselves on the one hand, and to God on the other?

### *Basic Questions*

The problem breaks down at once into several questions.

(a) What is the secret of the regularities of the world? There are two basic kinds of regularity, to which we give the names of continuity and causality. By continuity we mean the persistence of many features of our world substantially unchanged from moment to

<sup>1</sup> Some philosophers have referred to this world of objects as an 'inference' from the events of experience. But this I suggest is strictly a misuse of terms. I do not at this moment for example *first* observe certain visual events and *then* make an inference that there is ink on the paper before me. My awareness that there is ink on the paper (my readiness-to-react-as-if-there-is-ink-on-the-paper) is my immediate way of apprehending the visual events. Even to call it an 'interpretation' could give a misleading impression, if it were taken to suggest that one could apprehend and cogitate upon the raw events without or before making any interpretation.

moment. I see-the-same-paper<sup>1</sup> before me now as I remember seeing a moment ago. Substantially the same landscape appears through my bedroom window from one morning to the next.

By causality we mean a relationship of regular and necessary entailment between one event and another. Given one event A which we have learned to call the necessary and sufficient cause of another, B, we find that we may reasonably expect B to follow. What thought-model finds a satisfactory place for these regularities?

(b) How are my mental activities: thinking, purposing, deciding—related to the activity of the world of objects, especially that of my own body? Can I say strictly that I *cause* events in the object world (e.g. in my hand, or my brain); can I say that I *act on* it? If so, what kind of causal link can we conceive of between me as agent and the world of objects? If not, how can we properly speak of the relationship of my decisions to the events consequent on them?

(c) How are the will and the activity of God related to the activity of the object-world? Can we say strictly that God *causes* events? Can we say that He *acts on* the world of objects? If so, what kind of causal link can we conceive of between the Absolute and the changing objects of this world? If not, how can we properly speak of the relationship between Divine Activity and humanly known events?

### *Nature and Supernature*

It will be seen that the words 'natural' and 'supernatural' have not yet entered our discussion. I have deliberately spoken of the 'object-world' rather than the 'natural world' because many events in the object-world—above all the life of Our Lord—have qualities which mark them in traditional language as 'supernatural'. The ideas of 'nature' and 'supernature' will find their places at a later stage.

## 3. THE STABILITY OF OBJECTS

### *Two Extreme Positions*

Philosophical speculation has long ranged between two extremes in answer to the problem of the continuity or stability of objects. Why

<sup>1</sup> The hyphens here are important for strict accuracy. All I know for certain is the experience of seeing-the-same-paper-as-I-remember-seeing. To break up the hyphens always requires careful justification and can even sometimes lead to contradictions, e.g. when what is seen is not an inert object but a living plant or animal, with continually changing material constituents.

do objects like stones and trees persist from day to day? Extreme materialism answers: 'Objects are made up of permanently existing particles of matter really "out there" before you.' Extreme idealism, *per contra*, replies 'Objects are creations of the mind. They are real enough as long as any mind is apprehending them, but their stability is only derivative from the permanence of the corresponding eternal ideas.' These are not of course definitive answers, but they will serve us as caricatures of two opposing attitudes and emphases that must be reckoned with before we have done.

### *The Impact of Contemporary Physics*

Twentieth-century physics has cast serious doubt on some details of the classical materialist thought-model. Quantum mechanics now enables us to calculate only the distribution of probabilities of different sorts of microscopic events which we call 'impact-of-a-photon', 'transition-of-an-electron' and so forth. The events we observe can at best be interpreted only in a restricted sense as signs of the motions of particles; and at worst we meet with flat contradictions if we try to use a thought-model in which such 'particles' have any permanent individuality. The statistics simply don't work out right unless we drop the idea that each 'particle' must have its own individual location at all times, and that change occurs only by the motion of such particles through space. Instead, events such as 'impact-of-an-electron' have to be thought of much more in the way that an actuary thinks of 'impact-of-influenza' in a population, where it is possible to speak of 'a *flu-wave* moving over the country' without at all implying the motion of 'flu-victims'. In much of modern physics, as in the actuarial description of a flu epidemic, it is strictly speaking only the pattern of *probabilities of events* that moves continuously from place to place, and has some degree of temporary stability.

Yet despite these developments, on which there is not space to enlarge, I do not believe that the approach of naïve realism or materialism is essentially ruled out by modern physics. As long as physics adheres to its concepts of the conservation of energy and conservation of electric charge, it seems *logically* possible to hold that objects are stable because of the stability of some kind of independently existing and indestructible 'stuff'. I think that such a thought-model is unsatisfactory on other grounds, and that physics itself suggests a better one which we are to discuss; but the view sometimes expressed<sup>1</sup> that

<sup>1</sup> See, for example, C. F. von Weizsachen *The World of Physics*.

recent physics conclusively outlaws materialism is based, I think, on a misconception.<sup>1</sup>

Against idealism, also, powerful arguments have been brought which need not detain us now. Suffice it to say that such objections as there are have gained no strength from recent science, nor could they very well have done so. I have mentioned these classical rivals not in order to canvass the merits of either, but rather to provide us with reference-points, relative to which to locate and orient our own thinking.

### *Biblical Clues*

When we turn to consider the Biblical passages bearing on this issue, we seem at first sight to find unequivocal support for a position of naïve realism. The Creation narrative, for example, strongly suggests a picture of a material world 'out there', remaining the same from moment to moment and day to day because God has made it so once upon a time and left it.

Yet we have only to think of some of the Christological passages of the New Testament to realise that the idealist too could find his proof-texts. 'In Him all things hold together.' 'Who upholdeth all things by the Word of His power.' . . . Any number of passages seem to favour an idealist rather than a realist standpoint, suggesting that the world is held in being as an Idea in the mind of God. 'Immanent yet also transcendent' is our theological way of describing God's relation to the world. Irritatingly, the Bible refuses to come down on one side or other of the traditional fence. Uncompromisingly, theology seems determined to 'have it both ways'.

### *A Possible Synthesis?*

What thought-model then can we use, that may do some justice to both aspects of revealed truth and also to our commonsense and scientific experience? (We need not expect to find a perfect one.) Scripture and commonsense alike suggest to us that there is some truth in both the materialist and the idealist answers. Suppose then that we explore the possibility adumbrated in the opening paragraphs, that the materialist and idealist models fail, not because their propositions are false, but because they are of *inadequate logical dimensionality*—they are each trying, metaphorically speaking, to cram all the information in a

<sup>1</sup> D. M. Mackay, 'Counter-Revolution in Physics', *The Listener*, 10 April 1958.

multi-dimensional subject into a single two-dimensional projection. Like the plan and elevation views of a girder bridge, neither is false yet each alone would mislead if regarded as a complete account. If this is so, the remedy may be to try to devise a thought-model having *more logical dimensions*: one in which two or more different but complementary descriptions may be seen to be rationally and compatibly related, and which may help us to avoid trying to relate them in wrong ways.

#### 4. A UNIFYING THOUGHT-MODEL

##### *Static and Dynamic Stability*

In order to develop our new thought-model we must go back to take as our logical starting-point not the world of objects, nor the world of ideas, but the events of experience. These events show a certain kind of coherence which we express by saying that the world of objects is relatively stable. The question is how to interpret this stability. Suppose, for example, that an artist wants to produce a stable picture of a building. He has two essentially different methods at his disposal. Conventionally, he may lay down a distribution of paint or other material in the appropriate pattern. This is a *static* method, giving *static* stability to the resulting picture. Alternatively, nowadays, he could generate a distribution of discrete *events* in the appropriate pattern, such as the sparkle of electron-impact on the screen of a television tube. This is a *dynamic* method, giving *dynamic* stability to the resulting picture. In the static case, the stability of the picture depends on the stability of the delineating matter. In the dynamic case it depends on the stability of the *programme of events*.

The example of a television picture is crude and only partially satisfactory, but it represents perhaps our most familiar example of dynamic stability. Obviously for our purpose we want to forget that the sparkle of light takes place on a material screen. The essential point is that 'objects in the picture' remain stable from one frame to the next because there has been no change in the pattern of control-signals which determines how the tiny sparks of light are to be distributed, how the events are to be related. The whole show could be altered in an instant as drastically as the originator might wish. The stability or otherwise of the picture, in short, reflects the will of its originator.

*Towards a New Thought-model*

The concept of dynamic stability clearly suggests a third kind of thought-model in terms of which to organise our thinking about God and our world. The suggestion which I believe to represent Biblical teaching on the subject is that in ultimate terms the events of our experience are directly given by God, and that the coherence we find in these events is to be attributed directly to the continually coherent and infinitely detailed Will of God their Giver. The stability of the world of objects is then to be conceived of as a dynamic stability, completely dependable for just so long as God wishes to give us experience in the current pattern, yet expressive only of one phase of the Divine Plan and Purpose, and thus liable, in His good time, to be replaced by something unimaginably better.

*What the Model Does Not Imply*

Here we must at once guard against a possible misunderstanding which the example of the television picture might seem to support. I am not now suggesting that the *objects* of our world are made up of patterns of 'events' out in three-dimensional space, in the way that the objects of the picture were made up of patterns of events on the screen of the tube. There may be a sense in which this also is true, but that is not what I mean. It is our immediate moment-by-moment *experience*—the complex flood of sights, sounds, itches, pains—which I am now suggesting that we should think of as a pattern of events given by God and owing its coherence to Him.

In a crude way we might think of *ourselves* (the knowing subject-agent) as the 'screen' in the analogy of the television picture; not that we are spectators of events *on* a screen (even a screen inside our own heads), but that our successive experiences (sights, sounds, itches, pains) are roughly analogous to the successive sparks on the television screen. Screen and viewer, as it were, are one and the same.

This point is so important that I should like to make it clear in another way. According to our suggested thought-model, it is rather as if the knowing subject were a vastly complex musical instrument, like a great organ, whose music constituted his experience. The stable objects and features of experience are then roughly analogous to the recurrent chords and stable themes of a Bach fugue. The stability once again is dynamic. The whole programme could change at the will of

its originator, who for the Christian is God Himself. That it apparently has not done so for thousands of years (except at special points), and may not do so yet awhile, is (according to the Bible) because His present programme is not yet completed.

This second analogy should also prevent our thought-model from being taken to imply that there is somewhere a 'T.V. Studio' world from which 'real' objects like tables, chairs and suet puddings are being televised onto the 'screen' of our experience. On the contrary, it is important to understand that the reality of the tables and suet puddings of our experience is in no way affected by our discussion so far. In the language-system of the object-world, the question of the origin of our experience cannot even be raised, let alone answered in a way disturbing to our view of its reality. The term 'real' as used in object-language about things in the object-world serves merely to distinguish some objects from others (such as mirror images) which we say are not real. Nothing could be more 'real' in this sense than a suet-pudding, and nothing I am saying now could diminish its solid reality one whit.

It is only when we change to the language-system of personal experience, in which the basic concepts are not *objects* like tables and puddings but events of experience like seeing-a-table or tasting-a-pudding, that the new thought-model makes a difference. It is not a theory of the composition of objects, like the atomic theory, but a theory of the coherence of events-of-experience which we call seeing-objects, feeling-objects, etc. It affects our thinking not about objects but about the relation of the whole object-world to God its originator. In particular, as we shall see, it affects our thinking about God's supernatural intervention in the course of humanly-known events.

### *The Concept of Illusion*

Despite these caveats it may be that this thought-model still seems repellently artificial. Does this not amount, we may well ask, to saying that the whole object-world is an illusion? As with many metaphysical objections, the most useful way to understand this question is to discover what we should be thought to deny if we answered in the affirmative.

The trouble is that the question could have more than one meaning. By an illusion we may (and probably do normally) mean 'something that will let you down if you try to treat it as "real" in all respects'. A mirage, a stereoscopic image . . . all illusions are marked by the fact

that there is some respect in which you can be 'let down' by trusting what you see.

Now in this sense we must robustly deny any suggestion that the world of normal objects is an illusion. On the contrary, as we have noted already, our whole notion of illusion has been formed to distinguish certain 'appearances' from normal objects.

If, however, we mean that the whole world of objects ultimately has only dynamic rather than static stability, and could disappear 'in a moment, in the twinkling of an eye', then this is precisely the position that I wish to advance, and it seems to me to represent fairly well the emphasis of Scripture teaching on the subject. I would only add that to call the whole world of objects an 'illusion' on these grounds would be a tendentious misuse of language. The word 'illusion' is so closely linked with the idea of 'that which can safely be dismissed or denied serious attention' that to apply it to daily life would have implications quite contrary to anything I wish to affirm. What we need is not a reduced conception of the reality of matter, but an enhanced conception of the Reality of God.

## 5. CAUSALITY IN THE NEW THOUGHT-MODEL

### *Causality in the Object-world*

The concept of dynamic stability extends readily to cover causality in the object-world. Like the world of objects, the causal relation that we early learn to recognise between events owes its stability, on our model, to the continuing will of the Giver of those events.<sup>1</sup>

For any given event, A, there will in general be many events,  $B_1, B_2, \dots$  which we can call the 'cause' of A. I am not now referring to 'complementarity' but to situations in which A depends causally on several events of the same logical kind. Such causes may be ordered serially or in parallel. For example if my vacuum cleaner is running, this is because the current is flowing in the armature, because a generator is revolving in the power station, because. . . . Here each 'cause' is itself the cause of its successor in the series. The causes are serially ordered. We may also say that the motor is running because the connector has been plugged in *and* because the switch has been turned on *and* . . . etc. These 'causes' are logically 'in parallel'.

<sup>1</sup> Gen. viii. 22.

It is important to realise that when we speak of the 'physical cause' of an event A we mean the whole serial-parallel chain-mesh of such events—the total object-situation which scientific experience has shown to entail the event A. Natural science is concerned to discover the pattern of causal relations between object-situations. By definition, it seeks the 'causes' of any object-situation among earlier object-situations, described in object-language.

The ordering of object-situations, past or future, in a causal chain-mesh through the invention of successful principles of ordering called 'natural laws', is the scientist's characteristic task. When according to his principles the chain-mesh of object-situations leading up to a particular event A is complete, he, not unreasonably, resists any attempt to advance some other *object-situation* as the cause of A. Statistical physics has of course weakened this 'single-mindedness' where the data are necessarily too imprecise to define the chain-mesh uniquely. But the basic emphasis remains in principle, if one necessary and sufficient physical cause is known, others should not be sought. Some physical cause, at least in a statistical sense, is expected to exist for any given object-situation. So far as science has gone, it seems to be God's will to give us experience of object-activity for which this attitude is normally justified.

### *Biblical Concepts of 'Causation'*

The Bible throughout sees God as active in events of the object-world. In places it speaks of God's 'causing' the wind to blow, the rain to fall and so forth. Physics on the other hand encourages us to believe that in principle the chain-mesh of object-situations leading up to a rainstorm is complete. 'All vacancies for causes are filled, thank you.' Is the Biblical view then outdated? Or must we hope that one day the physicist will discover a tiny vacancy in his pattern that was not filled, and that he cannot fill?

Most of us, I suppose, would refuse to accept this way of putting the question, which leaves out of account the third obvious possibility, that the Bible does not here mean by 'cause' what the physicist does. Aristotle, we remember, distinguished four uses of the term. The 'cause' of an earthenware pot might be, roughly speaking, the potter's activity, the clay that gives body to the form he moulds, the pattern or form in his mind, or the final purpose for which the pot is being made. Only the first of these senses resembles the physicist's normal use of the term.

Our thought-model, however, is very different from Aristotle's, and I think it suggests directly an interpretation of the Biblical doctrine which need not lead us into his difficult metaphysics. From our present standpoint we should describe God not as the *cause* but as the *originator* or *giver* of the events attributed to Him by the Psalmist. The distinction is clear. A 'cause' in the physical sense is necessarily an object-situation: something in and of the *picture* (to go back to our television analogy). We look within the picture for the causes of events in and of the picture. We look within the object-world for the causes of events in and of the object-world. God, however, is not an object alongside other objects; He is the originator of the whole flood of events of experience which we apprehend as our encounter with His world of objects. What the Psalmist wants us to understand, when he says that God causes the rain to fall, is doubtless true. But if we are trying to be metaphysically precise (which the Biblical writers for good reasons were not) we should, I think, translate it by saying that God *originates* the rainfall, or even that the rainfall (and the activity of the object-world in general) is God's activity. To say that object-situation A *caused* event B does not contradict, but *complements* (if it is true) the assertion that God *originated* B. Always a 'cause', if there is any, is within the picture—the object-world. But the *originator* is neither inside nor outside the picture, or He is both inside and outside the picture. . . . We have then in our thought-model, not indeed an explanation, but perhaps one helpful way of thinking of the Immanence and Transcendence of God. If the dichotomy of 'inside/outside' must be used at all, it were perhaps more sensible to say that it is the picture that is in the Originator, rather than the Originator in (or outside) the picture. '*In Him we live and move and have our being.*'

### *Human Activity*

'*In Him we live. . . .*' Yes, we have rather been forgetting ourselves. For it is the world not only of chairs and suet puddings, but also of our own human bodies, to which we have attributed this dynamic stability. How are we, the knowing subject-agents, related to those bodies? The nature of the link between mental activity and bodily movements deserves a paper to itself, and we can here bring out only a few leading thoughts connected with our general theme.

In the first place it is clear that we as knowing *subjects* cannot form part of the object-world. Our bodies do; but the 'I' known to each of

us in what the philosopher calls self-consciousness (the I in 'I know' . . .) is not known as an object, by the activity of observation, not even by 'self-observation' as we call it. As Lamont points out in his profoundly stimulating book, *Christ and the World of Thought*, self-observation could lead only to an infinite regress of myself-observing-myself-observing-myself-observing-myself. . . . There is a fundamental difference between the sense in which I 'know' that my heart is beating and the sense in which I 'know' my own desires. My heart-beat I must observe. But merely to possess a desire is to know it. I do not have to observe myself desiring. If I try to do so I achieve as a result, not a knowledge of my desire, but a knowledge of the confused state of mind one gets into through mistaking self-knowledge for self-observation.

Since I as subject am not part of the object-world, it is logically improper to seek to find a place in its causal chain-mesh for such events as my decisions. So here we face a second verbal dilemma. It is traditional to say that when I decide to press a button I 'cause' my finger to move—or even to say that my decision is the 'cause' of the movement of my finger. Yet the physiologist jealously guards his pitifully incomplete causal chain-mesh against the insertion into it of any such factors; and I believe he is right to do so. Where then does my decision come in?

Here again our thought-model suggests an answer. My decision is an event of my experience for which I am responsible. God has given me the power to respond in this way to His continual giving, by continual adaptive decisions of my own. Adding my decision to the total pattern naturally makes the corresponding object-situation different from what it would otherwise have been. Yet since the object-situation has the logical relation to the pattern-of-events-of-experience not of an effect but of an interpretation,\* my decision cannot properly be said to be its *cause*. We have here another example of true complementarity, between my personal description in terms of decision, and the physiologist's description in terms of causal links between processes in my brain. The relation of my decision to the movement of my finger is certainly one of *necessity*. But it is not one of causality. In the same sense in which we have used the terms before, I *originate* movements of my body, but it is not proper to say that I cause them.

\* See footnote 1, p. 80.

*Non-causal Entailment*

The distinction between causal and other forms of necessity may sound sufficiently unfamiliar to merit a simple illustration. When we read a message sent by a flashing morse lamp, the flashes of the lamp are certainly necessary for the appearance of the message. They *cause* activity in the retina of our eye, which in turn causes the whole pattern of brain-activity without which there would be no reading-of-the-message. But it does not strictly make sense to say that they cause either the message, or any change in the message should such be made. It is necessary that the pattern of light-flashes should change if the message is to change. But the change in their pattern does not (except in a loose sense) *cause* a change in the message: it *represents* a change in the message. The change in the message is an *interpretation* not an *effect* of the change in the pattern of flashes.

Statements of the form 'unless A were so, B could not be so' must therefore be carefully studied before we conclude that A is even a candidate for inclusion among the causes of B. In particular where B has the logical status of an *interpretation* of A (as the message is our interpretation of the flashing light-pattern, or as the object-world is our interpretation<sup>1</sup> of the events-of-experience) it seems more proper to speak of changes in A as *mediating* rather than '*causing*' changes in B. We thus eschew any talk of two sets of *events*, the 'material' and the 'mental', with causal links between them. The world is one. There is but one set of events with two (or indeed more) interpretations, between which the relationship is not symmetrical, but is certainly not 'causal' in the scientific sense.

*Supernatural Activity*

I must now at last indicate more explicitly in a few words the relevance of this thought-model to the idea of the 'supernatural', though it is to be hoped that the broad lines of application are clear.

Natural activity in the world of objects finds a place as the expression of God's normal creative pattern for us. Whenever His drama has reached a point at which a new feature must be introduced for the sake of the overall pattern, it is not surprising nor unreasonable that our scientific expectations based on the normal programme should be upset. Supernatural events, then, in the object-world, are events which signify

<sup>1</sup> See footnote 1, p. 80.

a new or unusual phase in the programme. They are never to be thought of as irrational. But their full rationality could become apparent only in terms of the total drama, and can be realised by us now only insofar as God has been pleased to reveal His purposes to us. The continuity of normal experience we have already found on our thought-model to reflect the stability of God's Will. The 'discontinuity' of true miracles, as viewed in terms of the object-world, we now see to reflect no less the stability of the same Will of God, since they have taken place in fulfilment of the same eternal purpose.

It follows from this that even the most scientifically surprising miracles might be expected to show a 'family resemblance' in some respects to God's more usual pattern of activity. The character revealed in God's miracles (as distinct from mere 'magic') is essentially the same as the character revealed in His day-to-day dealings with us. Not that to our sinful minds this offers an infallible criterion of genuine miracle; but for all who know Him personally it adds cumulative reassurance to the conviction of faith.

### *The End of the World*

Presumably from the scientific standpoint the most dramatic supernatural event in the world-picture of Christian Revelation would be the end of the world, when 'the heavens shall be folded up as a garment,' and 'we shall all be changed'. It was this among other considerations that first led to the present thought-model, and it brings out perhaps most clearly the difference made by thinking of the object-world in terms of dynamic stability. If we ask what kind of task God would have in winding up the natural order, materialism would answer in terms of a wholesale removal-operation. Idealism would regard it as a problem of the eradication and replacement of ideas. (Neither might be expected to be unduly hospitable to the possibility.) From our present standpoint, we should think of it as a matter of a total change of the pattern of events mediating the object world, having as its 'interpretation' in object-language a wholesale removal-operation, and at the same time amounting from the subjective standpoint to the eradication and replacement of the corresponding system of ideas of material objects. Only that which has acquired eternal status—the pattern of our eternally-significant choices made in positive response to God—will ultimately survive. . . . But a more detailed discussion of eschatology is certainly not within our present province.

## 6. TOWARDS A SYNTHESIS

*The Doctrine of Creation*

We may now see how the 'realist' emphasis of Genesis i fits harmoniously with the 'idealist' emphasis of later teaching. If we are at all to think of God in the language of the world of objects, then of course in object-language these objects are other than, and distinct from, God. If we ask what form the 'projection' of God in the object-world would take, the answer of Christian Revelation lies in the Person of Jesus Christ. Is this perhaps a clue to the mysterious Christian doctrine that Christ was and is in some sense the Agent of Creation?<sup>1</sup> If God is ever to be manifest in the object-world it must be as Jesus Christ. Christ on earth we are then led to think of as the complete projection of the Being of God in the three-dimensional world of objects.

Yet when we use our more comprehensive thought-model, we find no contradiction in the assertion that our whole experience-of-the object-world is continually being given by God, and depends on the moment-by-moment 'upholding' of God. The world of objects in terms of which we apprehend experience has of course a past, which it is the scientist's province to infer. The world of objects *was* created, long before our time. The flux of experience *is being* created and maintained continuously by God.

God is thus transcendent over the world of objects, but He is immanent in the events of experience. To both He stands in the relation of Creator. Our thought-model does not however suggest that He *first* created the world of objects and *then* began the continuous process of creating events-of-experience. These are each complementary ways of describing one and the same 'multidimensional' creative relationship to the world of our experience. It is His continual creation of events-of-experience that I apprehend as my active encounter with a past-created world of objects.

*Divine Sovereignty and our Responsibility*

We have already seen that our decisions may be regarded as our responsive contribution to the total pattern of events-of-experience.

<sup>1</sup> Col. i. 12-20; John i. 3; Heb. i. 2, 3.

It is a fact of experience that when I decide-to-move-my-finger, my finger (an object among the objects of the world) normally moves. In terms of the object world there is doubtless a concomitant causal chain-mesh of object-situations in my brain leading up to the movement of my finger. But the question of the 'freedom' of my decision is not, I suggest, to be settled by asking how complete was the causal chain-mesh, since, as we saw earlier, my decision does not in any case form part of the chain. The causal chain-mesh picture is rather an interpretation of the pattern of events of experience of which my decision was a part.

How then are we to decide whether my decision was free? I have discussed this in another paper<sup>1</sup> and must here be brief. Let us suppose that I am about to choose one of two alternatives A and B. You, the reader, have been granted complete and continuous knowledge of all the processes of my brain and the external forces acting on it, and from this you deduce that I am about to choose A. Suppose now that you were to try to persuade me of the truth of your prediction, and suggest that as my brain is physically determinate I am not free to choose otherwise. Obviously in any case in which I should normally call myself 'free to choose', it is a fact of experience that I can falsify your prediction if I wish; and no matter how physically-determinate my brain may be you would never be able to allow successfully for the effects of your telling me your prediction (as long as you want to persuade me into accepting the revised version), since I shall always be one jump ahead of you in the game. Nor is this liberty of mine confined to cases in which you actually interfere with me by offering the prediction. For suppose that you silently make a prediction which (by hypothesis) will be successful if you remain silent. Oddly enough, it is still impossible to claim that what you believe is 'the real truth'; because you would be the first to agree that *I* at least would be *wrong* to believe it (since my believing it would render it out-of-date); whereas if it were 'the truth' I would (by definition) be *right* to believe it and *wrong* to *disbelieve* it. I do not in this case dispute that *you* are right to believe what you do; but a necessary condition of its validity for you is that I should not believe it, but must believe something else—namely, that I have a decision to make which is as yet logically indeterminate.<sup>2</sup> A decision is an event about which neither the agent nor

<sup>1</sup> D. M. Mackay, 'Brain and Will', *Faith and Thought*, 90, 103-115, 1958.

<sup>2</sup> D. M. Mackay, 'On the Logical Indeterminacy of a Free Choice', *Mind*, 69, 31-40, 1960.

the outside observer can know 'the whole truth', until it has been made.

'Freedom of choice' then, I suggest, is clearly something which all of us possess in (I think) all the choices that we ourselves should wish to regard as 'free'. It is completely unaffected by any doctrine of the physical determinacy of our brains, however much or little ground there may be for such a doctrine.

But now we raise our eyes from the mundane level of physical causality and come face to face with the great doctrine of Divine Sovereignty. How can we find room for this and human responsibility in the same thought-model?

Let us try to pose the problem in Biblical terms. The 'unconverted man is faced with a choice: 'Whosoever will, let him come.' 'Enter in at the strait gate.' Yet if he accepts the invitation and enters, he finds written over the inside of the same strait gate: 'Elect according to the foreknowledge of God.' 'Whom He called, them He did predestinate. . . .' Is it true then, before he has chosen, that he is already predestined to decide in this way?

If the dilemma were merely an intellectual deduction from texts, he might well be tempted to dismiss one or the other doctrine as unintelligible. But it is not in fact like that. For surely each of us who has pledged himself to Christ knows in his own experience that both doctrines in fact 'ring true'. Our choice when we faced it was as clearly ours alone as any choice we have ever made. We knew that if we rejected Christ, the full responsibility was ours, for we knew as an immediate fact that both alternatives were open to us, as real and indubitable as toothache. Yet on looking back, is it not God's initiative in the matter that overwhelms every other feature of the picture? Do we not find that it is actually truest to our immediately-known experience to fall on our knees and thank God for *giving* us the grace to repent and choose aright?

So this is not, at bottom, a problem of reconciling two Scriptural propositions. It is a question of doing propositional justice to two facts of Christian experience. No mere logic-chopping can satisfy us here. What we want is a thought-model which does sufficient justice to the doctrine of God and to Christian experience to make *both* propositions seem natural expressions of different aspects of the total situation. To put it in another way—we want a thought-model in terms of which both the doctrines of God's sovereignty and of man's responsibility, can be expressed without contradictory implications.

I say 'implications' because, of course, theology has been full of attempts to harmonise the two doctrines, which avoid contradiction by merely refraining from *pursuing* awkward implications. Frequently this is even excused by saying 'here human logic fails; this is a deduction we have no right to draw. *Credo quia impossibile.*'

This, I suggest, is not good enough. Logic is essentially the art of detecting falsehood, rather than of deducing truth. This much we may grant, and indeed, assert. But where an apparently logical conclusion does not follow from true premises, logic is bound in duty to the God of truth to give a logical reason for this. It is not as often remembered as it should be that all logical deductions are tautologously implicit in their premises, so that to assert a proposition *is* to assert all logical deductions from it. Only by showing why an apparent conclusion is not a valid deduction can we contract out of the obligation to face it.

Thus fortified, let us see whether our present thought-model might help with the age-old problem. Most bluntly expressed, we have to harmonise the earlier assertion: 'My choice is free' with the later assertion: 'My choice was predestined.' The first gives true expression to experience before choice is made. The second, at least for the Christian whose answer has been 'yes', gives true expression to experience after the choice has been made.

### *Two Standpoints*

It is of fundamental significance that the two statements are made from two different standpoints. For one, the decision is in prospect; for the other, in retrospect. Scripture never says, nor even encourages us to say, 'My decision *is* predestined'. Indeed to say so of a normal open choice is simply false, if it is taken to imply that there exists at this moment a prediction of my choice which I could not falsify at will if told of it; or else, in view of this, it must be to say something which does not deny that my choice is 'free', in the sense in which we have defined the term—the sense with which we normally associate moral responsibility.

How then do we view such a choice on our present thought-model? In the flood of events of experience I meet a challenge to a decision. Unlike all my ordinary decisions, this is not primarily a choice between alternatives conceived and expressed in terms of the object-world. It is a choice between two kinds of relationship with the giver of the whole flux of experience. If we try to depict this situation in ultimate

terms, we have to see it entirely as a pattern of God's activity. This we cannot of course achieve except by analogy; but it is only from the logical standpoint of this view that the concepts of predestination are defined.

Since on the other hand I am aware that I have to *act* in the situation—that there is a choice confronting me—by this fact the foregoing picture is meantime precluded from having meaning for me. I am not satisfying the right logical requirements. My logical standpoint is that of the agent, from which the decision is seen as something which I must contribute to the pattern of events, and for which the concepts of choice and responsibility are defined. In the only frame of reference that applies to my situation, the decision is mine to make, and mine alone. As soon, however, as the choice has been made, the whole process becomes part of my (determinate) past, and I can seek in obedience to revelation to contemplate it from the other standpoint, from which Faith sees all to have been 'of Grace'.

#### 7. CONCLUSION

This is but the merest indication of the kind of synthesis that seems possible with the present thought-model, but it may suffice to open up discussion, which is the purpose of the present paper. I would end with a word of warning.

Because we have been concerned almost exclusively with the object-world of science and its relation to the individual agent, we have left unconsidered the major sphere of Divine activity as Scripture portrays it, in the community of God's people and among the unredeemed. Merely to mention such topics as worship, the Church, the ministry of the Word and sacraments, and the upbuilding of the fellowship in love, will suffice to show how small an area of God's Activity has been covered by our title.

It may be well to emphasise also that our thought-model is explicitly designed to make no difference whatsoever to our 'common-sense' reliance on physical causality in all practical matters of daily life, as well as in science itself. Its purpose has been only to illuminate the Biblical grounds for this reliance. True, it suggests that there is no reason, other than the Will of God, why the whole object-world should not pack up over-night. But in practice, as even anyone who learns to trust his life to air-transport discovers, it makes remarkably little difference to your planning and acting if your possible demise is

*totally* unpredictable; and there is nothing haphazard in our dependence on God's creative power, for literally *nothing* is more trustworthy. No decision can rationally be affected by this dependence, except in the general sense that at all times we must be 'ready'. And where have we heard *this* emphasis before?

No. The expectations on which natural science and daily life are founded remain as strong and sure as ever they had a right to be, if we pursue our suggested line of thought far enough. The only difference is that the rock on which it would found such expectations is not the brute permanence of objects, nor the ghostly unchangeableness of ideas, but the personal faithfulness of the Living God.

A. H. BOULTON, LL.B.

## Thoughts on a Problem

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### CAN 'SCIENCE' AND 'FAITH' MEET ?

The twentieth century is the century of the specialist, and philosophy is in partial eclipse. This is so not only in the academic world, where the scientist commands more respect than the philosopher, but, far more important, there is less readiness in the minds of ordinary people to accept as imperative the search for a vision of the world and themselves that may enable all that they hold to be true to be related into a single and intelligible whole, and may give meaning to life. There are many reasons for this, but three are specially worthy of mention. Firstly, there are so many specialisms, each of which can be a life study, that he who would try to combine various fields of knowledge is, of necessity, a layman in all but one or two, and is cautious in expressing opinions that may be recognised as ill-founded or naïve by the expert. Secondly, the very terminology used in many scientific fields has become unintelligible to anyone but the expert, and contact has been lost; the specialists working each in his own rarefied atmosphere. Thirdly, theology, once accorded the dignity of 'queen of the sciences', is discredited, and her discarded crown has not been claimed. There is no authority to arbitrate, nor even to take notice, when the assertions of different specialisms are, or seem to be, mutually contradictory.

This is a plain man's attempt to focus thought upon a certain aspect of this present situation. It is an attempt to call attention to something in the relationship between what is usually called 'science' and what is usually called 'faith', that goes to the very root of the challenge to face which is the sole reason for the existence of the Victoria Institute. It is an attempt made in the belief that until the situation to which it calls attention is faced, anything that seems to be done in the way of bringing 'science' and 'faith' into face-to-face relationship must be a futile beating of the air, as in his opinion it has been, for the most part, during the whole of the last century.

The method of science is a method of organised investigation, the accumulation of factual knowledge, the deduction therefrom of generalisations leading to the establishment of 'laws' (wrongly so called—the semantic confusion that has come from the pirating of the lawyer's

word by the scientists has bedevilled a good deal of thought and reasoning). Upon the basis of these 'laws' it is possible to present the universe in which we find ourselves as a place of order in which effects follow commensurate causes, and correct predictions can be made of the results which will follow certain situations or flow from given circumstances. Science has its recognised techniques, its accepted criteria for assessing the validity of observations, and its recognised methods of progressing from observation, through hypothesis to experiment and the formulation of results. All of this constitutes a discipline of which the scientist is at once conscious and very jealous. He demands that, to command his recognition, observations be such that they do not depend upon any subjective imagination on the part of the observer, that they be susceptible of independent verification, and, if at all possible, capable of measurement and statistical expression. He requires that, where experiments are conducted to investigate or demonstrate, they should be conceived in precise terms and be capable of giving the same results irrespective of the experimenter.

Working by these methods and within this discipline the scientist has given a description of the physical universe which—so far as the common man understands it—is accepted by him as a description of reality. So far is this, so that physical matter, possessing mass and dimension, is conceived by the ordinary man in this age as constituting an order of reality which, as it were, is basic and primary, whilst anything non-material (I use the word 'material' as denoting the whole mass-energy system studied by science) tends to be regarded as possessing only a contingent or derived reality. Thus King Alfred was a 'real' person, because it is fairly certain that between certain dates in the ninth century a physical body possessing this name as a label walked the country of England, whilst King Arthur was not 'real' because it is pretty certain that there never was a physical body which sat at the Round Table with Sir Galahad and the others. The effect of this attitude of mind is in no way better illustrated than by the manner in which the Greek 'mythos', which was the concept of profound and transcendental truth set forth in an image which the human mind could grasp, has become our 'myth', something which was never 'real' and which only the simple believe.

Now the scientist, because of his own self-adopted criteria and self-imposed discipline, is precluded from taking account, as scientist, of a vast range of human experience, because it is experience of a nature which obstinately *refuses to be confined within his discipline and to be*

*tested by his criteria.* This range of human experience includes (but by no means solely consists in) that which belongs to 'faith'. This is not to say that scientists do not have faith, but if we are honest we have to admit that the scientist who is an avowed Christian believes a number of things upon evidence which, if tendered to him in the laboratory as observation on which to base a belief about physical reality, would be instantly rejected as grotesquely inadequate, being intrinsically improbable, and completely unverifiable. In fact, if he is ruthlessly honest with himself he will probably admit that he believes as true, because asserted in the context of his own faith, statements which he would reject as superstition if asserted in the context of another faith. He believes these things because they are part of his own faith though depending upon the testimony of remote and unverifiable witnesses, whilst, as a scientist, refusing to take into his purview alleged occurrences in the contemporary world no whit less well-attested than the very occurrences upon which his faith is founded.

An excellent example of the phenomena which refuse to be confined within the scientific discipline and to be tested by scientific criteria are telepathy and clairvoyance. That, as phenomena, they occur is evident from hundreds of outstanding recorded experiences, among them such well-attested cases as the account of the fire in Göthenburg given by Swedenborg while he was a hundred miles away, and many on the files of the Society for Psychic Research. I have myself been given, by a sensitive, information (whether deriving from my own mind or, as claimed, from that of a deceased relative) so accurate as utterly to eliminate chance or guesswork. But the attempts made to investigate clairvoyance and telepathy within a scientific discipline have yielded only the meagre results of Rhine and Soal's statistical evaluations, the significance of which is hard to assess. It is interesting that, when recently, a society devoted to psychical study attempted to establish data on telepathy under test conditions using proved sensitives, the results were inconclusive. Under their usual conditions, when not the subject of experiment, but dealing with human sitters in surroundings and circumstances evocative of human emotions, these same people achieve most veridical results. Under conditions of a 'scientific' experiment their results were unconvincing.

The same kind of story can be told of spiritual healing. Miracles of healing have happened in our contemporary world, as well authenticated as those of the Gospels, with the added advantage that the subjects and witnesses are available now for examination and cross-examination.

But they seldom, if ever, happen under the kind of conditions which the scientist would impose as test conditions. They are not susceptible to that kind of investigation.

Now, if this elusive characteristic of not happening to order and not yielding to classification and objective observation were limited to such out-of-the-way matters as these, it might be plausible, though even so not honestly possible, for the sceptical scientist to dismiss them as being oddities, like the seeing of ghosts or flying saucers, and as belonging to the lunatic fringe and being unworthy of recognition (although of course the lunatic fringe is an authentic part of human experience, challenging recognition and interpretation). But it is often overlooked that this same characteristic is also specific to a much greater range of human experience, one so influential upon human history as to defy anyone to overlook it. I refer to the whole gamut of creative art. Here, just as in telepathy and clairvoyance and spiritual healing, the artist waits on inspiration. In those odd 'psychic' things there is apparent the influencing of the physical world by causative factors which appear to lie beyond the physical world, or by means that do not conform to the laws of the physical world. So in the work of the true artist, by which I mean one who creates and does not merely copy, the physical world is modified and shaped by influences that are outside itself. And this takes place at a point where it can be observed and experienced, which is to say within the mind of the artist. The testimony available regarding the expression of great art by those who have been its channels is of immense spiritual and scientific relevance. For they are conscious of realities beyond the physical world, and sometimes of themselves not as creators in their own right, but as the media through which the extra-mundane and more truly real spiritual world breaks into the physical universe. And this consciousness of theirs is part of human experience, as valid as the scientists' own observation. They cannot produce masterpieces to order, and when their work is not inspired it is mere craftsmanship, a fact that can be easily verified by contrasting the great artist at his best with the same artist at his worst, an informative, though not very edifying exercise. It is certain that they could not produce masterpieces to order, in a laboratory with an observer armed with a stop-watch and cardiograph.

And, let it be repeated, in every creative work of art, and indeed in every conscious act taken on the basis of a value judgment, the physical world is being modified, moulded, and its new forms created by that which is not comprehended within its own system. Thus, primarily in

artistic creation, but also in every act consciously taken as an act of will and not as a merely mechanical act of which the doer is but passively aware, that which is beyond the physical is seen to mould the physical and create new forms in and of it, and in this fact the primacy of what we may call spirit or mind, over what we call physical matter is evidenced. But because all this non-physical reality will not submit to the disciplines of scientific observation, the vital and utterly obvious fact is avoided and occasionally denied in the scientific picture of the universe.

It is the writer's belief, which he does not pretend to be able to prove, but which he thinks is at least hinted at by a consideration of some acknowledged facts, that this same essential process, the moulding of matter by spirit, is not only the common ground of all living processes, but is also present in the vast background of apparently non-living nature; that spirit is at once the womb and the goal of matter and that the whole physical universe is, as it were, a cross-section of an infinitely greater whole which, while fleetingly glimpsed by the mystic, is inapprehensible to the mind which isolates the material from the spiritual and then deliberately excludes the more significant in the study of the less, treating the physical universe as though it were a reality in its own right, able to be studied without reference to anything beyond itself. It may be that such a view leads to pure platonism; if so, so be it. It certainly leads to a very great reappraisal of many attitudes of mind common in our age, not least that toward religion.

But every one of the phenomena which, breaking in upon the ordinary levels of experience, are the foundations of religious belief and equally the spur to spiritual and artistic awareness is, by the discipline of scientific method, excluded from scientific recognition. So long as this is so it is difficult to see how science and religion can either come to grips or come to terms. They move in different media and speak different languages. The individual scientist may be a religious man, but if so it is because beside his scientific faculties, and sharply distinguished from them, he possesses other and higher levels of awareness, and knows that there is a world beyond that which is apprehensible to science. It is in this that the essential difference exists between art and science, for the same cannot be said of the artist. Art is itself the act of the mind reaching out into those higher levels of awareness and bringing home what is apprehended in them. The scientist can distinguish between his science and his religion, but the artist can never disentangle his art from his vision of the eternal.

What then is needed to bridge the gap? The task is one for the philosopher, and as was said at the outset, philosophy is not at its best today, and some philosophers have themselves become so entangled in their own terminology as to become as incomprehensible as a physicist. In fact it is perhaps truer to say that the task is one for a wise man simple enough to see the whole complex as one, and able by his breadth of vision to overleap the self-imposed limitations of scientific method whilst still recognising their value in the quest of limited goals.

But, from the vantage-point of that broader vision, it is evident that the description of the universe proffered by science must be false and an illusion because it is only a description of part, and any description of part *as though it were the whole* is a falsehood. The universe is a *universe*, and nothing can be understood apart from everything.

And the first and most important step must be to open the shutters and to let in the flood of light that comes from the recognition of the non-repeatable event, the apparently capricious, the inspired and the irrational, the world of the mystic and visionary, the seer and the artist. They are valid components of the sum of human experience and any world concept that finds no room for them is inadequate.

REV. A. GARFIELD CURNOW

## Faith's Debt to Scepticism

### PART ONE: INTRODUCTION

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## PART ONE

## INTRODUCTION

## (1)

Scepticism, like many other words commonly used in philosophical and religious discussion, is one that needs careful definition. In this essay it will be used in its original, classical, etymological sense. The word is from the Greek *σκέπτομαι*, *I consider*, and denotes 'the condition of the mind when reflecting, examining, or pondering subjects of thought. . . . Among the Greeks a *skeptikos*, "sceptic", was a thoughtful, enquiring person.'<sup>1</sup>

But this primal meaning of the word became lost in the course of time. Soon the notion of 'disbelief', which is quite a secondary meaning of the term, became associated with it, and before long in common parlance a sceptic came to signify an infidel, and scepticism infidelity.

In recent times there has been a welcome tendency to revert to the original meaning of the word. 'Scepticism', says A. W. Benn, writing at the beginning of the twentieth century, 'was formerly used as a rather polite word for the more or less complete rejection of religious belief, but is now with great advantage being restored to its ancient signification of doubt and suspension of judgment as distinguished from complete denial'.<sup>2</sup>

## (2)

It would be idle, however, to claim that this restoration is as yet complete. It is all too true, as the latest edition of the *Encyclopaedia Britannica* says, that 'in general acceptance scepticism suggests denial of current or customary beliefs'.<sup>3</sup> Because of this 'general acceptance' it is necessary, in any fairminded consideration of scepticism, to enter a caveat against such a negative conception of its nature and function. Genuine scepticism must be distinguished from militant atheism and from supine indifferentism; from secularism, with its implacable hostility to theological doctrine; and from the attitude of the scoffer

<sup>1</sup> *Chambers's Encyclopaedia*, s.v. Scepticism.

<sup>2</sup> *English Rationalism in the Nineteenth Century*, vol. i, p. 13.

<sup>3</sup> s.v. Scepticism.

and the scornful, 'that cheap and flippant unbelief which is worse than earnest credulity'.<sup>1</sup>

Most of all, in view of the prevalence of this type of thinking at present, it must be distinguished from the scepticism inherent in Logical Positivism. Most logical positivists, or empiricists as some of them prefer to be called, hold a position identical with epistemological scepticism, according to which knowledge (except of sensory objects) is impossible. Others of the same school profess a more limited nihilism, doubting or denying only the possibility of knowledge of ultimate reality, or God.

## (3)

The majority of sceptics were critics of the effete systems they found cumbering the ground, rather than actual doubters of the possibility of knowledge in general, or of religious knowledge in particular. The notion that a sceptic is necessarily anti-religious is completely mistaken. The title of a book by Paul Elmer More, *The Sceptical Approach to Religion*, is very suggestive. There is a sceptical approach to religion as well as to irreligion. As has been well said, 'it is certainly not less possible to disbelieve religiously than to believe religiously'.<sup>2</sup> Indeed, again and again in the course of history the sceptic has been most nearly the true believer, repudiating the palpably false in his quest of the true. And thus it comes about that 'scepticism, as history has repeatedly shown, may be the basis of orthodoxy as well as of heresy'.<sup>3</sup>

## (4)

Lecky, in his *History of European Morals*, in describing 'the inductive reasoner', gives a veracious picture of the best type of sceptic. 'He looks with great favour upon the condition of a suspended judgment; he encourages men rather to prolong than to abridge it; he regards the tendency of the human mind to rapid and premature generalisations as one of its most fatal vices; he desires especially that that which is believed should not be so cherished that the mind should be indisposed to admit doubt, or, on the appearance of new arguments, to revise with impartiality its conclusions.'<sup>4</sup>

<sup>1</sup> Silvanus Thompson, *A Not Impossible Religion*, p. 10.

<sup>2</sup> John Morley, *Compromise*, p. 184.

<sup>3</sup> Basil Willey, *More Nineteenth Century Studies*, p. 11.

<sup>4</sup> Vol. ii, p. 192, 1911 edn.

It is interesting to note that scepticism, as thus understood, has its representative in the Bible in the anonymous writer of c. 200 B.C. who calls himself 'Qoheleth', the Preacher, and whose arresting tract is known as the Book of Ecclesiastes. 'He is no atheist, or scoffer at holy things', says Professor Dodd, 'but he has observed life coolly, and whether as a whole it justifies the assertions made by contemporary teachers of religion, he takes leave to doubt.'<sup>1</sup> Here is the essential note of genuine scepticism, and it is significant that the compilers of the Hebrew Canon of Scripture should have included this fascinating piece of writing in their corpus of books. May we not infer that they, at any rate, recognised the value of the sceptical spirit in religion?

## (5)

But even genuine scepticism has its perils. 'The danger of doubting is not only that it may become a fixed habit, but that interest may centre in the process itself as severed from the complex of normal mental activities and healthy enthusiasms and become a mania. . . . Its symptoms are a state of persistent intellectual unrest, a devouring metaphysical hunger, a morbid anxiety for mental satisfaction, accompanied not infrequently by a Hamlet-like paralysis of the will.'<sup>2</sup>

The danger indicated in this impressive warning—the nemesis of the *quid novi* of the Areopagus<sup>3</sup>—is a real one. But it must by no means be regarded as an inevitable feature of scepticism. It is true that some eminent sceptics do not seem to be alive to it. For example, John Stuart Mill declares that 'the rational attitude of a thinking mind towards the supernatural, whether in natural or in revealed religion, is that of scepticism, as distinguished from belief on the one hand, and from atheism on the other'.<sup>4</sup> This suggests that scepticism is a half-way house between belief and atheism, and apparently regards the half-way house not as a temporary lodging but as an abiding home. In other words, scepticism, according to Mill, consists in a permanent suspension of judgment, and leads to nothing beyond itself.

## (6)

Other sceptics, however, are fully conscious of the danger of which Mill seemed not to be aware. T. H. Huxley is an example. 'When I say

<sup>1</sup> *Authority of the Bible*, p. 184.

<sup>2</sup> *Encyclopaedia of Religion and Ethics*, s.v. Doubt.

<sup>3</sup> See Acts xvii. 21.

<sup>4</sup> *Three Essays on Religion*, p. 242.

that Descartes consecrated doubt', he says in one of his lectures, 'you must remember that it was the sort of doubt which Goethe has called "the active scepticism, whose whole aim is to conquer itself"; and not that other sort . . . whose aim is only to perpetuate itself'.<sup>1</sup> We may be grateful to Huxley for giving publicity to this pregnant phrase of Goethe's. 'The active scepticism, whose whole aim is to conquer itself', is the scepticism which through the ages has played a noble part in the building up of faith. 'The serious thinker would always repeat the words of Kant that, in itself, scepticism is "not a permanent resting place for human reason". Its justification is relative and its function transitional.'<sup>2</sup>

One of the foremost of living poets corroborates this point of view. After saying that 'every man who thinks and lives by thought must have his own scepticism', Mr T. S. Eliot goes on to specify three varieties of scepticism: 'that which stops at the question, that which ends in denial, or that which leads to faith and which is somehow integrated into the faith which transcends it.'<sup>3</sup> Mr Eliot's third variety may be equated with Goethe's 'active scepticism' as the attitude which has had such a profoundly beneficial result in the age-long elucidation of truth.

## (7)

The essential principle of the active scepticism which leads to faith, its motto and marching orders, is in the apostolic words: 'Prove (i.e. test, examine, δοκιμάζω) all things; hold fast that which is good.'<sup>4</sup> The point to be noted is that the testing is not an end in itself, but a means of arriving at 'that which is good'. This *locus classicus* may be described as the New Testament's recognition of scepticism, and its encomium upon it.

<sup>1</sup> *Collected Essays*, vol. i, p. 170.

<sup>2</sup> *Encyclopaedia Britannica*, s.v. Scepticism.

<sup>3</sup> Preface to Everyman Edition of Pascal's *Pensées*, xv.

<sup>4</sup> 1 Thess. v. 21.

## PART TWO

## INVESTIGATION

Having thus stated how scepticism is to be understood, we will now enquire in what precise ways faith's debt to scepticism may be traced. It will be convenient to group our investigation under a number of headings which, while broadly distinguishable, are not mutually exclusive, for in a subject so extensive, and with such intimate inter-connections, some degree of overlapping is inevitable.

## (1)

*In combating dogmatism.* By dogmatism we do not mean that intensity of conviction on moral matters which is sometimes understood by the term, but rather 'the seemingly arrogant cocksureness with which some Christians appear to claim to lay hold on God . . . the slick, glib dogmatism of religion'.<sup>1</sup>

Such over-confident self-assurance, leading to assertions which purport wholly to exclude the possibility of error or inadequacy, has been common in the history of theological thought. Scepticism has rendered valuable service in pointing out that such assertions not only ignore the limitations of our human knowledge, but are, indeed, incompatible with real faith. For 'faith is not a matter of rational demonstration . . . were it so, it would cease to be faith . . . and become compulsory knowledge'.<sup>2</sup>

'None of our beliefs are quite true', writes Bertrand Russell; 'all have at least a penumbra of vagueness and error. The methods of increasing the degree of truth in our beliefs . . . consist in hearing all sides, trying to ascertain all the relevant facts, controlling our own bias by discussion with people who have the opposite bias, and cultivating a readiness to discard any hypothesis which has proved inadequate.'<sup>3</sup>

These are the methods of scepticism which, in puncturing the pretensions of dogmatic self-assurance and protesting against its extravagances, and by judicious reminders of the extent of our human ignorance and the relativity of our knowledge, have done much to preserve the essentials of truth, and to extend its frontiers. Pascal, the

<sup>1</sup> Geddes Macgregor, *Christian Doubt*, p. 53.

<sup>2</sup> Basil Willey, *More Nineteenth Century Studies*, p. 100.

<sup>3</sup> Bertrand Russell, *Sceptical Essays*, p. 155.

greatest of Christian sceptics, was profoundly right when he affirmed that 'each must take a part, and side either with dogmatism or scepticism'.<sup>1</sup>

## (2)

*In encouraging humility before mystery.* Closely allied with the service of scepticism in combating dogmatism is its insistence on the necessity of conserving the element of mystery in Christian belief; its conviction that reverence and intellectual modesty, awe and wonder, are indispensable equipments for all who would spell out the secrets of the Deity. In this it was up against the grim and arid outlook which demands that everything shall be rigidly defined, reduced to cold prose, confined within the strait jacket of iron-bound systems.

Keats, in a famous passage, complains that

Philosophy will clip an Angel's wings,  
Conquer all mysteries by rule and line,  
Empty the haunted air, the gnomed mine,  
Unweave a rainbow.<sup>2</sup>

The crassly prosaic type of mentality here lampooned has had a banal effect on religion. One thinks, for instance, of books that discuss the most sublime themes with cool detachment and airy complacency and desiccated dryness, without a hint of the reverent shrinking from what Rudolf Otto calls 'the Numinous', which is mortal man's only fitting attitude to the Eternal. It is scepticism which, again and again, has rebuked such an approach to the things of God, in the spirit of the words of the Old Testament: 'Put off thy shoes from off thy feet, for the place whereon thou standest is holy ground.'<sup>3</sup> In thus emphasising that an indispensable factor in true religion is profound humility before mystery, scepticism has played an important part in the formation of a vital Christian faith.

## (3)

*In contending for intellectual honesty.* John Morley refers to 'the treacherous playing with words which underlies even the most vigorous efforts to make the phrases and formulae of the old creed hold the reality of new faith'.<sup>4</sup> A lamentable blot on much religious apologetics

<sup>1</sup> *Pensées*, Everyman Edition, p. 434.

<sup>3</sup> Exodus iii. 5.

<sup>2</sup> *Lamia*.

<sup>4</sup> *On Compromise*, p. 157.

is here indicated. There is no need to condemn all attempts to 'modernise' the Christian creeds—to interpret their archaic language in harmony with advancing knowledge. But nothing can justify the sophistry, the juggling with words, which has characterised some of these attempts, and scepticism has been prompt in its protest against this 'theological thimble-rigging', as C. S. Lewis calls it.<sup>1</sup>

Scepticism's stern demand for intellectual honesty finds its Scriptural prototype in the Book of Job. 'Job cannot find the moral interpretation of his own sufferings and sorrows, and he will not allow his friends to put an interpretation on them at which his integrity revolts.'<sup>2</sup> In other words, we see in Job that call for honest speech and straightforward thinking and mental integrity which has been one of the marks of scepticism through the ages.

## (4)

*In countering superstition.* 'Beliefs, in the absence of intellectual scrutiny', says a modern writer, 'may easily degenerate into superstitions'.<sup>3</sup> This might have been stated more strongly. The tendency on the part of the uninstructed and uncritical believer to lapse into some form of superstition is evidenced on almost every page of the history of religion. Indeed, A. N. Whitehead goes so far as to say that Christianity itself 'would long ago have sunk into a noxious superstition, apart from . . . the effort of Reason to provide an accurate system of theology'.<sup>4</sup> And many who cannot see Christianity ever meeting this fate would agree with an equally eminent writer who says that 'sceptical enquiry' is the only certain way of 'protecting ourselves against dogmatic superstition'.<sup>5</sup>

But superstition is a peril to others than the unsophisticated believer, as may be seen from the case of Cardinal Newman. Sir Geoffrey Faber, in his sympathetic treatment of Newman in *Oxford Apostles*, says that 'he displayed a naive credulity', and refers to his 'puerile love of supernatural and miraculous stories'.<sup>6</sup> How could this be true of a mind of the calibre of Newman's—one of the keenest and subtlest of all time? Perhaps the key to the answer may be found in the rhetorical question

<sup>1</sup> *Miracles*, p. 85.

<sup>2</sup> Denney, *The Christian Doctrine of Reconciliation*, p. 213.

<sup>3</sup> Elliott-Binns, *English Thought 1860-1900*, p. 360

<sup>4</sup> *Adventures of Ideas*, Pelican Edition, p. 157.

<sup>5</sup> F. H. Bradley, *Appearance and Reality*, p. 5.

<sup>6</sup> pp. 23, 442.

which Dean Inge quotes from one of his books: 'What is intellect but a fruit of the Fall?'<sup>1</sup> A man who could so regard the highest human faculty—for is not Reason the image of God in the human soul?—would *a priori* rule out of court, would indeed be incapable of, that open-minded enquiry, that critical investigation, that demand for and scrutiny of the evidence for all alleged facts, which has ever been one of the distinguishing marks of the spirit of scepticism.

## (5)

*In opposing fanaticism.* Fanaticism is described by a forthright writer as 'the curse and shadow of zeal, and from age to age the bane and shame of religion'.<sup>2</sup> Like many other bad things, it is the excess of a good thing. Enthusiasm, zeal for righteousness, passionate conviction leading to whole-hearted endeavour, neither heeding the wounds nor counting the cost—religion would have fared very badly in the world apart from this, its main driving power.

But close upon the heels of wholesome enthusiasm we trace, in every generation, the sinister approach of its attendant shadow. The *γλωσσολάλια*, or speaking with tongues of apostolic times; the crusades of the early centuries; the burning of witches in the middle ages; the gathering of excited crowds on hill-tops in the eighteenth century, instigated by predictions of the second coming of Christ; the various forms of corybantic Christianity in the nineteenth century—here are some instances of this fantastic and apparently ineradicable human weakness.

Against all these forms of misdirected zeal and exaggerated enthusiasm the voice of scepticism has been raised in steady protest. It has stressed the importance of that 'sweet reasonableness' (*ἐπιείκεια*)<sup>3</sup> which St Paul recommends to his converts, and which one of the best known of modern sceptics, Matthew Arnold, recommended to his nineteenth-century readers.<sup>4</sup> It has urged that visions, ecstasies, raptures, *et hoc genus omne*, belong to the abnormalities of religion, and that 'the fundamental religious experience is unspectacular'.<sup>5</sup> How much this sustained protest of scepticism has done to prevent the faith being

<sup>1</sup> *Christian Ethics and Modern Problems*, p. 120.

<sup>2</sup> Hensley Henson, *Christ and Nation*, p. 191.

<sup>3</sup> 2 Corinthians x. 1.

<sup>4</sup> See especially his *Culture and Anarchy*.

<sup>5</sup> Martin Buber, *Between Man and Man*, p. 14.

swamped by eccentricities and burlesques it would be difficult to say, and probably impossible to exaggerate.

## (6)

*In attacking obscurantism.* Obscurantism, the sin of the closed mind, consists in the deliberate refusal to consider doubt; in regarding the amount of knowledge already attained as a fixed scheme, supernaturally certified and guaranteed against addition; in 'a shrinking deference to the *status quo*, not merely as having a claim not to be lightly dealt with, which every serious man concedes, but as being the last word and final test of truth and justice'.<sup>1</sup>

Some of our novelists have done good service by meeting it with ridicule. 'Whenever they tell me an idea's new', says a character in Sir Hugh Walpole's *The Cathedral*, 'that's enough for me: I'm down on it at once.'<sup>2</sup> There certainly is an amusing side to this sort of thing, but there is nothing amusing in the part obscurantism has played in the history of religion. It has been a terrible drag on the wheels of progress, and its consequences have often been tragic.

Sir Julian Huxley speaks of 'the incredible conservatism of the human mind in presence of new facts'.<sup>3</sup> This conservatism, as manifested by religious leaders in face of the discoveries of science, is as lamentable as it often has been ludicrous. When Newton first proclaimed the law of gravitation, the artillery of orthodox pulpits was levelled against him in angry consternation. Lightning rods were denounced by many preachers as an unwarrantable interference with God's use of lightning. Anaesthetics were forbidden to the lying-in room on the strength of the recorded sentence on errant mother Eve, and negro slavery was justified by reference to Noah's curse of Canaan.

So the sorry story proceeds from century to century, and scepticism has never intermitted its protest against such blindness, and its emphasis on the vital importance of open-mindedness, which has been well described as 'the fundamental religious disposition'.<sup>4</sup>

## (7)

*In protesting against inadequate conceptions of God.* The intelligent reader of the Bible will remember that what we have in the Old

<sup>1</sup> John Morley, *On Compromise*, p. 19.

<sup>2</sup> p. 136.

<sup>3</sup> *Essays in Popular Science*, p. 164.

<sup>4</sup> Geddes Macgregor, *Christian Doubt*, p. 52.

Testament is a developing conception of God, beginning with the elementary and the imperfect, and gradually becoming more and more adequate as men's minds responded increasingly to the patient processes of the Divine education of the race.

It is all too true that 'when Scripture is sacrosanct, primitive errors are esteemed divine'<sup>1</sup>—as illustrated on the preceding page. But it is also true that when the Bible is seen in its own light and not in the light of false claims, these primitive errors, and in particular the early and inadequate conceptions of God, are seen for what they really are—mistakes and misunderstandings, the *disjecta membra* of obsolete notions and superseded ideas.

The work of one of the most celebrated of modern sceptics, Bernard Shaw, should here be mentioned, particularly his book *The Adventures of the Black Girl in her Search for God*. In this book, says Mr Maurice Colbourne, 'Shaw takes us through the Bible . . . pointing out . . . the successive revelations of God from the "Omnipotent Bogey Man" . . . to a braver idealization of a benevolent sage, or just judge, and affectionate father.'<sup>2</sup> Why this laudable endeavour should have led to the book being so fiercely assailed it is difficult to see. It is true that Shaw is unfortunate in some of his remarks, needlessly provocative, and sometimes in questionable taste. But, as Mr Colbourne says, 'it was the Almighty Fiend that Shaw and other free-thinkers offered to challenge'.<sup>3</sup> And in that they were abundantly justified, and have earned the gratitude of the many who, because of their efforts, have arrived at a truer conception of God.

## (8)

*In criticising the concept of an external spiritual authority.* The basal question in all philosophical discussion of the nature of faith concerns the ultimate principle of authority in religion. What is this ultimate principle? The two great historic beliefs in this connection both held that the authority is external—the Infallible Church and the Infallible Book. It would be a mistake roundly to condemn, or even harshly to criticise, either of these positions. Both may be regarded as serving for a season the purpose of God. And, indeed, Church and Bible have still a part to play as courts of appeal in theological and religious matters. The voice of the Church through the ages, as a repository of Christian

<sup>1</sup> Dougall and Emmett, *The Lord of Thought*, p. 18.

<sup>2</sup> *The Real Bernard Shaw*, p. 165.

<sup>3</sup> *Ibid.* p. 30.

experience, and the testimony of the Bible, as the record of a thousand years of divine revelation—both are of immense weight, and of abiding importance.

But in the last resort, as Bishop Butler says, 'Reason is the only faculty we have wherewith to judge concerning anything, even revelation itself'.<sup>1</sup> This has been the unwavering testimony of religious scepticism through the years. It has steadily maintained that the ultimate spiritual authority must be sought, must have its 'seat', to use James Martineau's word, in the conscience and reason of man; enlightened, of course, by every external aid that may be available. It has fearlessly proclaimed that any external authority, unchecked by the suzerainty of reason, is bound to degenerate in the course of time into a mere talisman, with all the attendant dangers of magic and superstition. It has pointed out that revelation, while divine in its origin, has been mediated through reason—through the mind of man whether in the fellowship of the Church or in the writers of the Bible—and must be interpreted, tested, and understood by reason. 'The spirit of man is the candle of the Lord.'<sup>2</sup>

## (9)

*In pleading for toleration.* The celebrated appeal of Cromwell to the clamorous disputants about him, 'I beseech you in the bowels of Christ, think it possible that you may be mistaken', was the authentic voice of scepticism. Believing that truth is a many-sided jewel, and that no man can see all its facets, it urges all controversialists to see their opponent's point of view.

J. A. Froude says of John Keble: 'He could not place himself in the position of persons who disagreed with him, and thus he could never see the strong points of their arguments.'<sup>3</sup> The excellent qualities of men like Keble—devout, spiritually intense, saintly—must not hide from us the fact that many of them were bigots. They were so overwhelmingly sure of the rightness of their own beliefs that they were convinced of the wrongness of all those who differed from them. The results of this outlook are plainly written on some of the darkest pages of history.

A modern philosopher declares that 'tolerance is as serious an evil as exclusiveness if it cuts the nerve of effort to try to distinguish between

<sup>1</sup> *Analogy of Religion*, part 2, chap. 3.

<sup>2</sup> Proverbs xx. 21.

<sup>3</sup> *Short Studies on Great Subjects*, vol. iv, p. 267.

the more true and the less true'.<sup>1</sup> Tolerance of this sort—undiscriminating tolerance—has never been a feature of the best type of scepticism. It has always been keenly aware of the difference between the more true and the less true. But it has always refused to treat with contumely the sincere holders of 'the less true'. And it has always set its face against any and every form of persecution because of a man's beliefs or lack of beliefs. It holds that 'the faith of a living Church must be strong enough not merely to tolerate but to encourage varieties of emphasis and expression'.<sup>2</sup> The good effect of this persistent witness of scepticism is being seen today in a better understanding between the Churches, and between the Churches and science.

### PART THREE

## SUMMATION

### (I)

Lecky, in his best-known book, describes what happened in the middle ages when the long night of medievalism was drawing to a close. 'The spirit of ancient Greece had arisen from the tomb. . . . The human mind, starting beneath her influence from the dust of ages, cast aside the bonds that had enchained it, and . . . remoulded the structure of its faith. The love of truth, the passion for freedom, the sense of human dignity, which the great thinkers of antiquity had inspired . . ., blended with those sublime moral doctrines and with those conceptions of enlarged benevolence which are at once the glory and the essence of Christianity, introduced a new era of human progress . . . and created a purer faith.'<sup>3</sup>

This eloquent passage is a faithful delineation of the influence of scepticism through the generations, as indicated in outline in the previous section of this essay. Scepticism has performed for faith the supreme service of recalling it to a radical reconsideration of its own nature.

Professor Basil Willey, in his *More Nineteenth Century Studies*, in which he deals with a number of Victorian figures whom he describes as 'a group

<sup>1</sup> D. E. Trueblood, *Philosophy of Religion*, p. 223.

<sup>2</sup> F. R. Barry, *The Relevance of Christianity*, p. 224.

<sup>3</sup> *Rationalism in Europe*, vol. i, pp. 241-2, 1911 edn.

of honest doubters'—Tennyson, J. A. Froude, John Morley, F. W. Newman, Mark Rutherford, and the seven contributors to *Essays and Reviews*—says that 'if faith today has recovered tone and confidence, it owes this largely to the work of these pioneers, who compelled it to abandon many impossible positions'.<sup>1</sup>

Not only to these particular pioneers, of course. Concerning a more illustrious name than either of them—Voltaire, perhaps the greatest of all sceptics—it has been said that 'he mocked and he destroyed, but he was probably as necessary to the well-being of Christianity as the Reformation'.<sup>2</sup> Jowett of Balliol is equally emphatic. He declared that the famous Frenchman 'had done more good than all the Fathers of the Church put together'.<sup>3</sup>

## (2)

But it cannot be said that faith has been quick to recognise the debt it owes to scepticism. John Morley has all too much reason for complaining of 'the thanklessness of Belief to the Disbelief which has purged and exalted it'.<sup>4</sup> One reason for this is suggested by the reference to Voltaire as a destroyer. The destructive activities of sceptics generally have aroused understandable antagonism in the supporters of religion. Such antagonism is not difficult to sympathise with; it is not easy to see cherished landmarks and ancient bulwarks being swept away. But the champions of faith ought to have seen (a few of them did) that there was a positive aim in the destroying. Sceptics certainly have been destroyers, but those whom we have in mind did not destroy for the sake of destroying.

'The temper which would "utterly destroy" the idols is not admirable', writes Professor Silvanus Thompson; 'better far convince mankind that they are idols'.<sup>5</sup> That is what the religiously minded sceptic sets out to do. Archdeacon Hare said of Arnold of Rugby: 'He was an iconoclast, at once zealous and fearless in demolishing the reigning idols, and at the same time animated with a reverent love for the ideas which those idols carnalise and stifle'.<sup>6</sup> The same thing is true of many others who, like Dr Arnold, were critics and doubters. They demolished the idols in order that the ideas might have a better chance of surviving and flourishing.

<sup>1</sup> p. 5.<sup>3</sup> *Recollections*, vol. i, p. 97.<sup>5</sup> *A Not Impossible Religion*, p. 12.<sup>2</sup> A. Noyes, *Voltaire*, p. 632.<sup>4</sup> *Voltaire*, p. 32.<sup>6</sup> Stanley's *Life of Arnold*, p. III.

## (3)

But while we may feel a degree of sympathy with faith's apprehensiveness of the destructive aspect of scepticism, it is not so easy to forgive its blindness to the *cost* of scepticism to many sceptics. It ought to have perceived that they have often had to pay a bitter price for their temerity in challenging the accepted order of things, and given them credit for their courage and self-sacrifice, even if it considered them mistaken and wrong-headed.

They have had to face opposition, opprobrium, ostracism, persecution, imprisonment, torture and death. And when they have been spared these inflictions, they have often had to undergo the agony of that 'dark night of the soul' of which the supreme instance in literature is in the Book of Job. The phrase denotes that profound despondency, that abysmal despair, into which many an earnest seeker after truth, baffled in his search, was plunged. Harrowing indeed are some of the records of the sufferings of these martyrs of their own integrity. We might have expected that the pathos of such a position would have aroused compassion. But the annals of the past make it clear that it rarely did.

## (4)

Our study so far has necessarily meant an almost exclusive concern with the past. What of the present and the prospects of the future?

It is often said that the twentieth century is an Age of Unreason. There is much justification for this indictment. There seems to be a recrudescence of irrationalism nowadays, not least in religion. One serious indication of this, of many that might be mentioned, is the anti-rational tendencies in modern theological thought, stemming from Kierkegaard, and seen in contemporary writers like Berdyaev and Karl Barth. These tendencies are perhaps to some extent a swing-over from the callow liberalism of two generations ago, and will in their turn be superseded. Even so, the continued vogue of Barth in particular, the apparently numerous readers of his portentous volumes, is a disquieting feature of our day.

## (5)

But however disquieting some features of present-day life and thought may be, there is no need to fear the future. *Magna est veritas et prevalebit*. A robust characteristic of scepticism is its conviction that

truth need fear no investigation, can stand up to any enemy, and indeed thrives on opposition and attack. In the immortal words of the *Areopagitica*: 'Let Truth and Falsehood grapple; who ever knew Truth put to the worst in a free and open encounter?'

That faith has everything to gain and nothing to lose from sceptical enquiry is evidenced by not a few noteworthy individual experiences in recent times. Two may be cited by way of illustration.

Some years ago an accomplished young American scientist, definitely agnostic in his views, set out to write a book which would disprove once for all the Resurrection of Christ. But when he had sifted the evidence he was convinced of its veracity, and the result was Frank Morison's *Who Moved the Stone?* perhaps the ablest defence of the historicity of the Resurrection in our generation.

Viscount Samuel says he wrote his *Belief and Action* 'for the sake of clarifying my own ideas'. And this was the result: 'At the end I found I had come a long way from the negations of my earlier days; was less of an agnostic; definitely anti-materialistic; convinced that the universe is charged with mind and purpose.'<sup>1</sup>

These two contemporary examples of the outcome of sceptical enquiry, when honestly and courageously pursued, call to mind a more famous instance in the nineteenth century, immortalised by Tennyson:

He fought his doubts and gathered strength,  
He would not make his judgment blind,  
He faced the spectres of the mind  
And laid them: thus he came at length  
To find a stronger faith his own.<sup>2</sup>

That the pathway to a strong faith is through doubt; indeed, that doubt (or scepticism, for the two words are synonymous) is an essential element in real faith, must have been the conviction in the mind of a lesser-known poet when he wrote, in a striking couplet, what may be described as the whole philosophy of the relation between doubt and faith:

The man that feareth, Lord, to doubt,  
In that fear doubteth Thee.<sup>3</sup>

(6)

Seeing that these things are so, the protagonists of faith will do well to treat sceptics not as enemies but as friends. They should give heed

<sup>1</sup> *Memoirs*, p. 251.

<sup>2</sup> *In Memoriam*, p. xcvi.

<sup>3</sup> George Macdonald, *Disciple*.

to the wise words of Bernard Shaw: 'A Church which has no place for Freethinkers: nay, which does not inculcate and encourage free-thinking with a complete belief that thought, when really free, must by its own law take the path that leads to the Church's bosom, not only has no future in modern culture, but obviously has no faith in the valid science of its own tenets.'<sup>1</sup>

There are welcome signs that the truth of this pronouncement is being increasingly recognised, even by the Roman Catholic community, if we may judge from a refreshingly candid statement by one of its members in a recent book: 'Heretics were sent, as St Augustine tells us, so that we should not remain in infancy, and those Catholics who never come into their company remain in infancy. The Catholic machine, when it is unchallenged, becomes corrupt, just as much as does the machine of State or party.'<sup>2</sup>

Statements such as this give us hope for the future. The debt which faith owes to scepticism, long ignored, or even undreamt of, is at last being admitted. A lady writer refers rather sarcastically to 'the comfortable medieval conviction that reason and faith are interdependent and that one reinforces the other'.<sup>3</sup> This is no longer a mere medieval notion, outdated and obsolete. That reason and faith are interdependent, and that one does reinforce the other, is a growing modern persuasion.

Long ago an English poet wrote these lines, and an increasing number in our own day would agree that they express the essential truth of the matter:

Reason is our Soul's left hand, Faith her right;  
By these we reach Divinity.<sup>4</sup>

<sup>1</sup> Preface to *St Joan*, p. 40.

<sup>2</sup> Christopher Hollis, *Along the Road to Frome*, p. 227.

<sup>3</sup> *Hibbert Journal*, January 1950, p. 169.

<sup>4</sup> *Poems of John Donne*, Ed. Grierson, vol. i, p. 189.

## DISCUSSIONS

G. E. BARNES

### The Concepts of Randomness and Progress in Evolution

MR G. E. BARNES writes in reply to Mr W. G. Clarke (*Correspondence*, Vol. 91, No. 1, p. 65): I am afraid I cannot endorse the main argument of Mr W. G. Clarke's letter. If he agrees with me that it is presumptuous of Haldane to say what an all-wise God *ought* to do, then surely it is equally presumptuous of him to say what an all-powerful God *needs* to do. It might conceivably be argued that, on the basis of recognised natural laws, particular ecological configurations were necessary at different times in the past; but I know of no philosophical or theological reasons for inferring that the recognised natural laws are in any way necessary, in the sense that they could be no other than what they are.

I should be very grateful if Mr Clarke, or one of the theologians or philosophers to whom he appeals, would be good enough to state the problems raised by my view of God's responsibility. I should be glad to know if this view is either *unscriptural* or *unphilosophical*.

SIR JULIAN HUXLEY writes: I am afraid I find myself in considerable disagreement with the author. First, Randomness in regard to biological Evolution has nothing to do with a plan; it applies to the *direction of mutations*. The present biological view, which is now well-established, is that variation, which is the raw material of evolution, is random, but that natural selection acts as an ordering mechanism which channels the course of evolution in certain directions.

As regards 'biological progress', this should not have any metaphysical or other connotations; it is an attempt to give a name to certain types of observable trend, which have been otherwise summed up under the heads of improvement, increased adaptation, or advance. Recently, Professor Rensch of Muenster has summarised the whole evidence for such trends, to which he gives the collective name of anagenesis (*Evolution Above The Species Level*, Methuen, 1960). As further connection between evolution and ethics, I should have thought it was obvious that as we are part of the evolutionary process, our ethical values should be related to its direction.

MR BARNES: I am not surprised that Sir Julian Huxley finds himself in considerable disagreement with my paper, since its thesis is diametrically opposed to the views which he has been expressing for some forty years. But I am rather surprised that he goes on to make admissions which appear to undermine his whole case.

Firstly, he says that randomness in regard to biological evolution has nothing to do with a plan. This, of course, is one of the main points which I tried to demonstrate in my paper; and when he says 'that variation, which is the raw material of evolution, is random, but that natural selection acts as an ordering mechanism which channels the course of evolution in certain directions', he is only reiterating in different words what I said, that 'owing to natural selection, those random mutations which are of adaptive significance accumulate to produce adaptive trends' (p. 203).

Secondly, Huxley says that the term 'biological progress' 'should not have any metaphysical or other connotations', and I take it that these include ethical ones; and yet he himself, as I have shown in my paper, repeatedly invokes ethical values in order to arrive at his concept of biological progress. In the ultimate analysis, of course, ethical judgments depend upon metaphysical ones. If, therefore, one renounces metaphysical and ethical criteria, one cannot speak of biological progress. This is not to deny the existence of Rensch's anagenetical trends, but merely to imply that one cannot call them 'progress'. Alternatively, if one insists upon that designation, one would have to re-define the word 'progress' in objective terms, such as 'increasing complexity', which could provide no foundation for the construction of an ethical system.

Thirdly, Huxley says that he thinks it 'obvious that, as we are part of the evolutionary process, our ethical values should be related to its direction'. If, as I have argued in the paper (and as Huxley appears to imply in the second point of his letter), evolution is amoral or non-ethical, then it is neither obvious nor logical that 'our ethical values *should be* related to its direction'. In fact, I wonder in what sense, and upon what grounds, he uses the words 'should be'.

MAJOR C. W. HUME writes: Mr Barnes's paper interested me greatly. I had at first some difficulty in grasping the meaning he attaches to 'randomness'. A statistician uses this word to mean that a number of events (such as a number of possible values of a variable) occur, or are chosen, in such a manner that the occurrence or choice of any one of

them is equally probable with the occurrence or choice of any other. And probability, in this sense, is a property of human knowledge; heads and tails would not be equally probable if one knew fully all the influences acting on a tossed coin on any given occasion.

Trying to read this meaning into Mr Barnes's paper misled me, and may mislead others. As I understand his use of the word 'randomness' he applies it in two senses which he calls 'popular' and 'technical scientific' respectively. In the first of these senses randomness means the absence of a plan; in the second, it means the absence of the appearance of a plan. The latter meaning he illustrates by a series of jumbled letters, the order and choice of which would not be explicable by anybody who had not been told the plan according to which they were written down. Similarly, a ciphered message would be random in the second sense, but not in the first.

His application of these concepts to the theory of evolution brought to my mind a point which I have never heard anyone mention, but which strikes me as sufficiently curious to be mentioned here. Since an explanation of every character of an organism can be devised in terms of natural selection, and since an explanation of quite the opposite character could equally be devised in terms of the same theory, it becomes difficult to verify the explanation in any particular case. No doubt natural selection can explain why cats have tails, and equally well why Manx cats have none. Now the more flexible a theory is, the more difficult it is to verify.

Let me admit at once that given the facts that mutations occur, that they are heritable, and that there is competition between organisms, one can deduce that natural selection will occur. But that it is the true explanation in any given case needs additional evidence, because a theory which is infinitely flexible ceases to be verifiable. To illustrate this point, we might suppose that we had, as a result of some experiment in Physics, six experimental results which we plot on squared paper, and that from some theory we have deduced a formula containing six arbitrary parameters. Whatever the form of such a function, we can always choose the six parameters so that the function shall fit all six points exactly, and so we cannot verify it. But suppose, on the other hand, our theory has led us to a less flexible formula, with only two parameters. If then, having determined these two by means of our points, we find that it fits the other four also, we have verification. Or again, if a man is at loggerheads with his father, a Freudian will infer that he has an Oedipus complex; but then, if he were devoted to

his father, our Freudian would still infer that he had an Oedipus complex, but inverted for defence purposes; and if he had neither hatred nor devotion, the Freudian would again infer that he had an Oedipus complex, deeply repressed into the unconscious.

It seems, then, that while we must admit natural selection to be really at work, we need some evidence additional to that fact before we are justified in citing such a flexible theory, which can explain almost anything, as *the* explanation of any given character.

This consideration may have some bearing on the existence of altruism. Intra-specific altruism is found in parental and herd instincts, but one also finds altruism between species. I have seen a file of guinea fowl stop a cockfight in a farmyard, and once saw a goose do the same. Interspecific friendship is of common occurrence; between the stable cat and a race horse, for instance, and between man and dog. A cat will bring mice and birds as a present to his mistress. No doubt all such things can be explained away—glib explanations are easy to find when verification is not called for. But some of us devote a good deal of time and effort to preventing cruelty to animals and promoting their welfare. It seems that we have evolved inter-specific altruism, which natural selection must be supposed incapable of doing.

MR BARNES: I am grateful to Major Hume for pointing out another use of the word 'random', employed by statisticians. Quite clearly, he and I are using different definitions of randomness, which in many practical situations would lead to contradictory descriptions. His definition allows two possibilities, randomness and non-randomness; while mine allows three, randomness, non-randomness, and partial randomness. The difference may be illustrated by an example. If we were to consider successive throws of an unbiased die, we should find complete unpredictability, for the probability of any one number's turning up is the same as the probability of any other number's turning up. We should therefore both agree that we had a random series. If now we were to introduce a non-random factor by biasing the die, we should find that one number turned up more frequently than the others. Major Hume would now say that we had a non-random series; but I should argue that we still cannot predict, with certainty, which number any particular throw will produce, and that, therefore, there is still a measure of randomness. Were we now to throw the die, not on to a table, but on to a fluid more dense than the die, it would always come to rest in the same position, floating biased side down. We could

now predict, with 100 per cent accuracy, the result of any particular throw, and Major Hume and I would agree that we had a non-random series. In the first experiment, the only factors determining the results are unpredictable factors (variability in the throwing mechanism): in the second, we find an interaction between these unpredictable factors and a predictable factor (the bias): while in the third, we find the predictable factor overriding the non-predictable factors. So the ultimate difference between the statistician's definition and mine is that the former regards randomness as the absence of significant predictable factors, while the latter regards it as the presence of significant unpredictable factors.

Now when the biologist speaks of 'random' features in evolution, he is saying, not that predictable factors are absent, but that unpredictable factors are present. It is well known, for example, that different mutations do not all occur with the same frequency; some are much more probable than others: yet they would be described as 'random mutations'. There is a bias, but not complete predictability. My definition of randomness is, therefore, the more appropriate one in discussing evolution. If one accepted the statistician's definition I think one would have difficulty in finding any random features in biology at all.

Inter-specific altruism is a problem of considerable interest, which I have not heard or seen discussed before. I quite agree that this altruism is not the sort of thing one would expect to arise by a process of natural selection but, as Major Hume says, the theory is so flexible that it enables the speculator to explain anything. It could, for example, be argued that inter-specific altruism was merely a by-product of some mutation the primary consequence of which is a character of great adaptive value, e.g. increased intelligence. But this is pure speculation.

T. C. MITCHELL

## Archaeology and Genesis i—xi

MR W. E. FILMER writes: Mr T. C. Mitchell has given us in his paper 'Archaeology and Genesis I-XI' a review of most of the perplexities with which Bible students have to contend when they seek to reconcile the findings of modern science with the Biblical story of the creation of man. Unfortunately he has not hit upon the one interpretation of Genesis which does away with most of the difficulties. It is a commonly held fallacy that the Bible teaches that man was not created before about 4000 B.C. and that Adam was the first man. The fundamental error at the root of the trouble is the assumption that the second chapter is a dual account of the events recorded in the first chapter. The Modernist school of theologians quite rightly points out that the two accounts differ in a number of important details, but they then contend that the Bible contradicts itself. For example, it is pointed out that the order of creation in chapter one is, first plants, then animal life in the water and the air, next land animals and finally man, both male and female. In the second chapter man is made first, then plants, next animals and fowl and finally woman. In the first chapter (according to the A.V.) the waters brought forth 'fowl' (a term which includes flying insects—see Lev. xi. 13-23), but in the second the fowl were formed of the dust of the ground.

A number of other points which may appear trivial are to be found in the terminology: the first chapter speaks of grass, herb yielding seed and tree yielding fruits; the second chapter of plants and herbs of the field and trees that are pleasant to the sight and good for food. In the first chapter the animals are called cattle, creeping things and beasts of the earth, but the second chapter speaks only of beasts of the field. In the first chapter both men and women are said to have been created, while in the second they are said to have been formed or made.

In view of these differences, particularly those regarding the order of creation, it is unreasonable to suppose that the two accounts refer to the same series of events. If we refer to the Revised Standard Version of Gen. ii: 4b ff. we read that, 'In the day that the Lord God made the earth and the heavens, when no plant of the field was yet in the earth, and no herb of the field had yet sprung up . . . then the Lord God formed man of the dust from the ground and breathed into his nostrils

the breath of life, and man became a living being'. This states plainly that certain plants and herbs did not exist before Adam, but were made later. There is no possibility of reconciling this with the account in the first chapter, and the two records must, therefore, refer to different plants and a different man.

As soon as it is realised that the first chapter of Genesis refers to a creation of man before Adam, all the problems which arise from the scientific discovery that man has existed on the earth from a very early time are solved. Mr Mitchell in his paper has tended to accept a relatively recent date for the first appearance of true *homo sapiens*, such as is given in most textbooks on fossil men, which seek to do away with all human fossils which are more ancient than the 'ape man', whether of the Australopithecine or Pithecanthropus groups. These latter are not earlier than the middle or early Pleistocene, whereas at least a dozen human fossils of modern European type are known which date from the basal Pleistocene or Pliocene eras; that is to say a million or more years ago. Such fossils as those found at Castenedolo in Italy and Calaveras in America are well-authenticated examples of Pliocene man which evolutionary books (such as *Fossil Men* by M. Boule) seek to discredit. But a reference to what Sir Arthur Keith said in his *Antiquity of Man* will show that the evidence of their authenticity cannot seriously be questioned and never would be questioned, were it not for the fact that they do not fit in with modern evolutionary dogma. As he said, 'Were such discoveries in accordance with our expectations, if they were in harmony with the theories we have formed regarding the date of man's evolution, no one would ever dream of doubting them, much less of rejecting them' (p. 473; see also p. 334).

Further fossils continue to be found in the earliest Pleistocene by Dr L. S. B. Leakey in East Africa. Any impartial examination of the evidences of their antiquity must show that these fossils are older than any fossil of the Pithecanthropus type, but Dr Leakey's work continues to be thrust to one side.

These, and all other examples of Palaeolithic man, fall within the account of the original creation of man as given in Gen i. Adam was a new and later creation from whom another race sprang. It should be noticed that in the story of Cain, the Bible narrative tacitly assumes the existence of another race. Thus Cain complains, 'I shall be a fugitive and a wanderer on the earth, and whoever finds me will slay me . . . and the Lord put a mark on Cain, lest any who came upon him should kill him. Then Cain went away from the presence of the Lord and

dwelt in the land of Nod east of Eden' (Gen. iv. 14-16 R.S.V.). Since there is up to this point no mention of any other children of Adam there would be no explanation as to who the people were whom Cain feared, or who dwelt in the land of Nod; nor is there any light shed on the origin of Cain's wife who is mentioned in the next verse, unless all these people belonged to that race whose creation is recorded in the first chapter of Genesis. Theories about Cain marrying his sister and going to live among a colony of Adam's offspring are without Scriptural foundation.

What may well be another reference to the pre-Adamic race is to be found in Gen. vi, where some people are called Nephilim in the Hebrew, a word which has been translated 'giants' in the A.V. We read, 'The Nephilim were on the earth in those days and also afterward, when the sons of God came in to the daughters of men and bore children to them.' These (the Nephilim) were 'the mighty men that were of old, the men of renown' (Gen. vi. 4 R.S.V.). Here the expression 'of old' (Heb. *me-olam*) means 'from an indefinitely remote time', and, in the Psalms, is even translated 'from everlasting' (Ps. xli. 13; xc. 2; ciii. 17; cvi. 48). It does not necessarily imply an infinite time, but rather an original time. For instance in 1 Sam. xxvii. 8, after some of the original Canaanite tribes have been listed, we read 'those nations were of old (*me-olam*) the inhabitants of the land'. Similarly in Gen. vi. 4 we may well have in the Nephilim a reference to an aboriginal race which had existed on the earth from remote ages. If so, then this chapter records the inter-marriage between two races referred to as 'the sons of God' and 'the daughters of men', the latter being the aboriginal pre-Adamites. Possibly the term 'sons of God' denotes the descendants of Adam who was a direct creation of God—in fact in his genealogy of our Lord, Luke calls Adam the son of God.

As Mr Mitchell points out in his paper, Adam and his offspring were evidently agriculturalists, 'a view supported by the statement that Cain was a tiller of the soil and Abel a keeper of sheep'. The creation of the Adamic race together with a new creation of domestic animals—beasts of the field—and agricultural and horticultural plants—plant and herb of the field and 'every tree that is pleasant to the sight and good for food'—may well have brought about that 'economic revolution' spoken of by Gordon Childe which ushered in the Neolithic era. This economic revolution may also provide the explanation of why 'man began to multiply on the face of the earth' in the antediluvian era, as recorded in Genesis vi. 1. In his book, *New Light on the Most Ancient*

*East* (1952) pp. 232-3, he gave the beginning of the Neolithic era as lying between 4000 and 5000 B.C.; this agrees closely with the Bible date for Adam. The Samaritan text places him several hundred years earlier than 4000 B.C., the latter date being based on the Massoretic text. Again, Gordon Childe put the beginning in the Bronze Age in the Near East at about 3000 B.C., corresponding closely with the era of Tubal-Cain, 'an instructor of every artificer in brass and iron'.

From a purely historical point of view this interpretation of Gen. i and ii brings the Bible closely into line with scientific and archaeological findings. Objections are likely to be raised, however, on theological grounds, it being widely accepted that original sin is inherited from Adam. There is nothing in the Bible to say so, and in view of the fact that righteousness is imputed to man on account of his faith in the atoning sacrifice of Jesus, it may well be that original sin is imputed on account of the sin of Adam, who is representative of the whole human race.

**AUTHOR'S REPLY:** Mr W. E. Filmer has put forward another theory, which may be added to the possibilities which I named in my paper. A few points must, however, be considered.

1. The interpretation of the Imperfective with waw Consecutive construction in Genesis ii is an open question. While it is true that this construction usually indicates a series of events or ideas, the latter following on or arising out of the former, this is not always the case. An example in which there is clearly no such connection is found in Gen. ii. 25, where it would not be argued that the fact that the man and woman were (*wayyihyū*) naked, was either subsequent in time to, or connected in conception with, what precedes. Another example is Ruth ii. 23, where it is said of Ruth that she dwelt (*wattēšeb*) with her mother-in-law. Again there can be no question here of a temporal or conceptual connection with what precedes. Several other examples of this type occur in the Old Testament, e.g. Gen. xlvi. 18, 25; Judges xi. 1; Ruth i. 1; 1 Sam. xiv. 25, 49; 1 Kings iv. 22, 32; v. 12 [= Heb. v. 2, 12, 26]; 2 Kings xvii. 7 f; Isa. xxxix. 1 (though this is such an extreme case that some scholars emend the text), etc. This construction therefore cannot be used as evidence to support either interpretation, since its rendering depends on what interpretation has been previously accepted on other grounds. Thus the use of the word 'then' in the R.S.V. of Gen. ii. 7 suggests a prior acceptance of the view that Gen. i and Gen. ii represent different and disparate sources.

2. A point which would militate against an interpretation of Gen. i as narrating the creation of Pre-Adamite men is the fact that the term 'ādām is used of man in this account (verse 26 without article, verse 27 with article), as in chapter ii.

3. The crucial question concerning the remains of *Homo sapiens* which Sir Arthur Keith defended as of high antiquity is the authenticity of their parent geological horizons. In the comprehensive list of authenticated fossil men which was published in the Proceedings of the Nineteenth International Congress of Geologists (1952), which must be taken to represent the state of reputable geological opinion, these remains find no place. This is no final proof, it is true, but I think that one must be prepared to accept the honesty of the leading authorities on the subject. It is worth noting in this connection that Sir Arthur Keith came himself to relinquish his early views of the high antiquity of *Homo sapiens*, as is clear from his *Autobiography* (1950) (see especially pp. 318, 324, 347-8, 478, 606, 629-30; see also his remarks in the second edition (1925) of *The Antiquity of Man*, pp. x-xi). It is significant that he laid much stress on the Galley Hill remains as a test case, holding that, 'Our conception of the antiquity of man, especially of man of the modern type . . . turns on the authenticity of this discovery' (*Antiquity of Man*, pp. 251-2, also p. x). It is now agreed, thanks to the Fluorine method of relative dating, that the Galley Hill remains represent a later intrusive burial (K. P. Oakley and M. F. Ashley Montagu, 1949).

4. Gen. vi. 4 is difficult, but it is worth noting that as it stands there is no suggestion of any connection between the Nephilim and the *b<sup>e</sup>nê hā'elohîm* and the *b<sup>e</sup>nôt hā'ādām*.

5. If Adam is connected with Neolithic man in the Near East, the problem of the Flood still remains.

6. On the question of the Unity of the Human Race, such verses as Acts xvii. 26; Rom. v. 12, 19; and 1 Cor. xv. 21, 22, make it difficult to accept a theory involving Pre-Adamite men.

In view of these and other considerations, I still feel that the theory I adopted in my paper, though far from answering all problems, is that which involves the fewest difficulties. When all is said, however, this is not a matter over which there can be any final decision in the present state of knowledge.

## REVIEWS

*Religion, Science, and Mental Health.* New York University Press. \$3.00.

This book is an account of the proceedings of a three-day conference held in December 1957 in New York, arranged by the Academy of Religion and Mental Health.

During the earlier part of this century when the teachings of Freud were gradually transforming the theory and practice of psychiatry, there arose a conflict between religion and psychiatry. Many psychiatrists held the view that psychiatry and psychology were not concerned with ethical or religious values, whilst theologians looked with suspicion on the teachings of the leading psychiatrists, and closed their minds against the new knowledge of human nature which the psycho-analytical school was discovering. There was much bias on both sides, and this was aggravated by the later writings of Freud in which he expounded the view that ideas of God and of Immortality were illusions.

Gradually, however, both in America and in England, psychiatrists discovered in the course of their practice that many patients had religious and ethical problems intimately bound up with their neuroses, and that the honest worker in this field could no longer afford to ignore the religious aspect of mental conflicts. On the religious side, many theologians began to realise that many problems of personality would be better understood and coped with by one who understood more of the nature and functioning of the psyche revealed by psychological research. In 1953 several Protestant clergymen at St Luke's Hospital, New York City, launched an organisation to bring together psychiatrists, theologians, and others interested in mental health and illness, and this resulted in the formation of the National Academy of Religion and Mental Health.

The book contains four chapters, the first three containing contributions on the subjects respectively of the Behaviourist Sciences, Psychiatry, and Religion, and the fourth, entitled 'Horizons for the Future', gives consideration to future work and study in these fields. A short epilogue is added at the end. Each chapter contains an account of the Chairman's opening remarks, and three short talks of about ten minutes each by specialists in various spheres of study, followed by open discussion. It is not easy to write a satisfactory review of the contents of this book. The short time allowed for each speaker to develop his ideas leads to an over-condensation of material without sufficient time to work out ideas in detail, so that a great many points of view are presented, and numerous questions raised, without sufficient space being given to any one particular topic. The discussions cover a very wide field in a short space, and one hopes that in future conferences there will be a limitation of discussion to two or three major questions instead of an attempt to cope with the wide range of subjects touched upon in the present symposium.

Many points of great interest to psychiatrists and theologians are raised. The chapter describing the discussion on Religion and Mental Health is of special interest. The contributors are the Rev. Hans Hofman, a Protestant, the Rev. Noel Mailloux, a Roman Catholic and a professor of psychology, and Rabbi Goldman, a Jew. They all agree, especially the first two, on the contri-

butions which psychology and religion can make to one another. Mr Hofman stresses the important part which religion plays in aiding man to discover the meaning of life, and in helping him to orientate himself to the world in which he lives, and to God. Father Mailloux points out the inadequacy of a materialistic, experimental psychology which omits any reference to the soul of man, and to the moral problems which confront him. Both speakers refer to the need for a fuller understanding between psychology and religion, and for a synthesis between them.

Dr Harold G. Wolff, a professor of medicine and psychiatry, contributes a very interesting account of organic reactions to various emotional strains. He proposes the theory that illness or disease is an aspect of adaptation, that at its simplest level this represents an over- or undershooting of the mark of certain adaptive arrangements that are on the whole appropriate. This conception of the symptoms of disease as protective reactions has been further enlarged during the last two years, and it is leading to new and profitable ideas of the meaning of disease. It has been shown, for example, that raised temperature in fevers enables the chemical processes of the body, which produce anti-bodies as a protection against the toxins produced by invading organisms, to act more efficiently than they would do at the normal temperature of the body. So we arrive at the strange paradox that some of the symptoms of disease are Nature's efforts to cure.

The symposium is full of suggestions for further research and discussion, and it is to be hoped that the Academy of Religion and Mental Health will continue its good work and publish further records of its findings and discussions.

ERNEST WHITE

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Research workers in the field of medicine and psychiatry are becoming more and more aware of the importance of social factors in their influence on the incidence of disease.

An individual is largely the product of heredity and environment, and his personality can only be understood in the light of these factors.

In considering disease in the individual, he is no longer considered as an isolated individual. For many years it has been known that the frequency of certain disease is correlated with social conditions. For example, it was shown years ago, when tuberculosis was far more rife than it is now, that the incidence of tuberculosis was directly related to the degree of overcrowding in urban areas. The worse the housing conditions were, the higher was the rate of tuberculosis as compared with areas of less crowding.

What applies to physical disease applies also to mental and emotional disorders. Home life, social environment, including school and, later, working conditions, are vital factors in the development of personality. Many of our mental hospitals employ a staff of qualified workers who investigate the home and other environmental conditions of the patients admitted to hospital for treatment, as well as of those attending out-patient psychiatric clinics.

Thus sociology has become a handmaid of medicine and psychiatry.

*The International Journal of Social Psychiatry* seeks to disseminate the knowledge gained by workers in psychiatry and sociology, and to show the relation between the investigation made in these fields by various experts. Members of the Advisory Editorial Board are drawn from a wide field, including a large number of workers in the continents of America and Europe.

The names of several British psychiatrists and social workers are included in the list.

The autumn 1959 number contains much material of great interest and value. There are two papers on homosexuality, one by a well-known English psychiatrist, Dr J. West of Maudesley Hospital, who has already published a book on the subject in the Pelican series. There are papers on culture stress, the views, interests and activities of sixth form boys, tolerance in upbringing and its abuse, relation of the family to a psycho-therapeutic in-patient programme and other papers of interest.

Two of the contributors stand out particularly in the value of the views and experiences put forward. The paper on 'Tolerance in Upbringing and its Abuses' is a much-needed corrective to some of the mistaken ideas often put into practice in home and school life. One wishes that all parents and educationalists could read, mark, learn, and inwardly digest what the author has to say about training children. He shows the folly and the serious effects of lack of discipline in the home or in the school, and the falsity of the doctrine sometimes put forward in the name of psychology, that children should do what they like, and should never be thwarted or frustrated.

The other paper which specially interested me was that by Dr Alexander Gralnick of New York. He works in a private hospital of forty-five beds, and the paper is an outcome of his experience during the past seven years with the relatives of over six hundred patients treated in his hospital. The majority of the patients are schizophrenic. Dr Gralnick and his highly trained staff treat the patients along psycho-analytical lines. They have frequent interviews with the patients' near relatives, in which they seek to impart to them knowledge and understanding of the patient concerned. At the same time the doctors seek to obtain deeper insight into the causes of the patient's illness, and of the personality of the patient in so far as it has been influenced by home conditions. Sometimes the patient and his relatives are interviewed together, and personal relationships discussed and explained. By these means the patient and his relatives are brought into good working relationships with one another and with the psychiatrist in charge of the case.

This is a most useful contribution, and suggests a line of treatment which might well be adopted more widely.

Unfortunately most of our large mental hospitals are so understaffed that it would be impossible to carry out this line of treatment, but in treating individual patients in private practice, or in small nursing-homes, it would be well worth while to follow along the lines advocated.

The *Journal* is a very much worthwhile production, and it is to be hoped that it will achieve a wide circulation.

(Proceedings of the Symposium held on Saturday, 16 July 1960, at  
Friends' House, Euston Road, London, N.W.1.)



ERNEST WHITE M.B., B.S.

## Modern Trends in Psychiatry

The subject that I have been asked to talk to you about is very apt, perhaps, in view of the fact that this is being called the Mental Health Year. As some of you know, I have been engaged for many years in the practice of psychiatry and one has had an opportunity to read and to see life in reality as well as reading the theories of the various psychological schools. What I have to say today will be partly based on reading and the knowledge one gets from the medical side, and perhaps some of it towards the end based on actual experience of some thousands of patients whom I have interviewed or analysed in the last twenty-three to twenty-four years.

Now I am very happy to be able to stand here and say that, during the last ten years there has been very rapid progress in both knowledge and the treatment of patients suffering from nervous and mental illnesses. Many years ago when I did my own psychiatry as a medical student, the main idea of the treatment of insane people was that they were a danger to society or to themselves and should therefore be locked up. The old-fashioned mental hospitals were more like prisons than hospitals, and the patients were all kept under lock and key, and very little was known in those days about methods of treatment. But since the discovery of the new psychology by Freud and his followers and also by the extensive researches made on physical lines, fruit is now borne in the new methods of treatment on both aspects of the patient, that is to say, on the psychological side purely and on the medical side, the physical, chemical side. I shall say very little about that because that is not really the main theme about which I want to speak this morning.

There is an immense amount of investigation going on at present on the physical side, for example, the work of the Burden-Sanderson Institute near Bristol where several workers are engaged in the study of the electrical reactions of the brain, using an instrument which many have heard about called the electro-encephalogram which records electrical changes occurring in the brain under varying conditions. Some very interesting results have been obtained; for instance it has been discovered that people with certain kinds of personality

produce waves, electrical waves, of a particular form. In fact, one of the research workers there said recently that they had gone as far as believing that they could, by taking electrical brain reactions of a man and a woman, decide whether they are suitable for marriage.

Then the chemical studies as well are going on, and I dare say many have read or heard of the frightening effects produced in the mind by a certain substance called mescaline, and by certain other chemicals which produce a condition of mind somewhat similar to schizophrenia. A good deal of research is now going on in that direction and also in the direction of the chemistry of the central nervous system. There are those who believe that some of the forms of mental disorder and possibly emotional disorder have a physical basis in some chemical changes in the chemistry of the cells and fibres of the central nervous system, but this work at present is, of course, in its infancy. There is, the work which has been done—initiated, perhaps—by Pavlov, the Russian physiologist, on what we call conditioned reflexes. He experimented with dogs, finding out how their secretory apparatus responded to certain stimuli, and by altering the stimuli, and so on, he was able to produce some unexpected results. But among other things he was able to produce by confusing the dogs by certain stimuli a kind of nervous breakdown and, interestingly enough, he found that by giving these dogs bromide, they got better of their nervous trouble. Then much more work was done on the physiological side.

We are sometimes apt to forget Sherrington who did a very wonderful work on reflexes which I find is very rarely referred to now. Pavlov has so taken the field that Sherrington's work has been forgotten.

Along other physiological lines, a great deal of work is being done at the present moment at the psychiatric group of hospitals in London, of which the Maudsley is perhaps one of the chief. There is the research work of Eysenck who, with his collaborators, has published some very interesting work where experiments have been done to differentiate various types of character on experimental lines, and also a great deal of work has been done on the statistical line by comparing the characteristics of 500 neurotic patients with the characteristics of 500 fairly normal people chosen at random.

Now out of this physical work and the work of Pavlov and those who succeeded him, there were those in America some years ago who started a school of psychology which is called the Behaviourist School, of whom the founder was one named Watson. The Behaviourist School made what seemed to be the cardinal error of considering only

one set of phenomena and ignoring the rest. They attribute all human action and behaviour to physiology or reactions in the central nervous system; in other words it was a purely materialistic outlook. They said that we simply reacted in certain ways to certain things in our environment something like a machine, and there was no need to postulate minds or consciousness as being an important factor in human personality. When they were pushed about consciousness they proclaimed the theory that consciousness was epiphenomenal or that it was a by-product of chemical changes in the brain. Now I do not know what you think about this; perhaps it is my limited intelligence, but I cannot for the life of me see what is meant by an epiphenomenon, and they forgot, these people, that the only thing of which you and I are directly aware is our psyche. We only know the outside world by our senses and our observation, that is to say, we have no immediate knowledge of the outside world. On the other hand we have immediate knowledge of our psyches. You know you exist, you know that you have certain experiences, whether you can describe them or not. You know that you have things like dreams, you have things like anger and fear and the emotions of which you are directly aware. They do not come by inference, and all the rest of the world outside is known to you not immediately, but, as I say, through the means of the senses and observation; and even when these Behaviourists talk about personality depending upon reactions and so forth, they only know those reactions as chemical and physiological reactions of the nervous system through their senses—their minds had to be there first, so to speak. Therefore it seems that to call consciousness of the mental process of which we are directly aware merely an epiphenomenon of chemical or electrical changes in nerve cells is really to me meaningless. I cannot see any relation at all. It is perfectly true, of course, that alterations in the chemistry or the electrical reactions in the brain cells do produce changes in mental reaction—we know that. But who is to deny me when I say that equally the process is reversible, that is to say, the changes can be brought about in the nervous system by mental events? There is a great deal of evidence in favour of that. For example, an enormous amount of work has been done in the last few years on the general physical and chemical reactions in the body, including the brain, to emotion. Now I am not prepared to accept what the Behaviourists seem to put forward, that emotion is the result of changes in the body—I cannot help feeling that it is the other way round, that if I feel anger, if I have fear, I can then find that changes have taken place

in my body, and to argue that the fear or the anger are due to changes in the body seems to be an extraordinary 'Alice in Wonderland' way of looking at it, and perhaps the ultimate philosophy of the Behaviourist School was expounded some years ago by a book which caused rather a stir in philosophical circles, a book by Ryle of Oxford called *The Concept of Mind*, in which Ryle stated that there was no need to postulate the ghost in the machine, as everything would be explained on physical reactions, if you like, on Pavlov theories and so forth; and it was an ably written and a very amusing book. But what rather amused one was that Professor Ryle himself is a professor of metaphysics at Oxford.

Now I want to leave the subject of the materialistic aspect just with this concluding remark, that one must not belittle the immense amount of experimental work which is going on on the physical side. It has added greatly to our knowledge, and there is always the danger of dividing man into sections as though they were watertight compartments. For example, dividing him into spirit and mind or soul and body. Man is not like that. Man is the totality, the person. You and I are totalities consisting of body and, if you like, mind and spirit, but we cannot separate them by a clean cut and say that they are different departments, watertight compartments. They do not exist as such, and mind and body and spirit are extremely closely interwoven, and when dealing with people, as I want to show as I go on, we have to think of the whole, the total personality, whether we are doctors of medicine or surgeons or psychiatrists; to consider the total personality and not to isolate one part, and think that we can deal with that and ignore the rest.

Now there is another line of treatment which is offering great promise. It was realised, and is realised, that with a great number of mentally afflicted and neurotically afflicted patients one of their root difficulties is in adapting themselves to the society in which they live. One finds over and over again that underlying the emotional and mental disturbances of patients there is an intense loneliness. There is an inability to communicate. This is especially true, of course, of that most dread of all mental illnesses, schizophrenia, where so often patients go right off into a fantasy world of their own and become quite detached—the only cases, incidentally, of psychological independence. They cut themselves off and they feel intensely lonely; and even patients suffering from the milder complaints of such emotional disturbances, as neurotic anxiety or obsessions, have a feeling, so often, of being

'odd'. So many of them have the kind of feeling of being the odd man out. We must realise that if we could only get them to become part of a group, to become assimilated into part of a group, it would be an enormous help to them in recovery, and would restore to some extent their confidence and take away some of that dreadful feeling of loneliness—of being odd man out.

Several clinics in London—especially the Tavistock Clinic, which I think was the first to do this—several years ago started what they call 'group psychotherapy'. They formed a kind of club of some of their patients under the charge of one or two psychiatrists and they had games, refreshments, and then they had talks and were encouraged in these talks to unveil some of the difficulties they had and discuss them with one another. The psychiatrist did very little to direct the discussion; here and there he would do so by an occasional question, but he left the patients, as far as possible, to get to know each other by meeting every week, or perhaps not quite so often over a long period, perhaps a year or two years, and to help one another by discussing their difficulties, and in some cases this proved very helpful because it helped people to feel that they did belong to a group. May I say in passing, should this not be one of the basic functions of the Church?

Now still further, a friend of mine who is working at one of the large mental hospitals under the London County Council—and who is a very fine Christian man and has very high ideals in his work, and is highly qualified as well in his profession—has started three or four years ago, by permission of the Superintendent, what was then a new idea in group treatments of mental difficulties. He had permission to use a house in the grounds of the mental hospital and he formed a family. Of course, he chose his patients very carefully. He chose a family of about thirty patients, men and women, and put them in the charge of a sister. He made them themselves responsible for the running of that house. For example, they had to plan the menus for the meals. They had to arrange for the shopping. They had to do the cleaning, and all the little things that fall to the lot of those who look after a house. You can understand that people of that nature, mentally disordered people, very often fell out—they had quarrels and fights sometimes, and every evening the psychiatrist and the sister met with the patients for an hour's session or so to discuss all the doings of the day, and for patients who had had difficulties or patients who had been a bit angry to discuss their circumstances and to try to discern why this had happened, and to encourage generally a knowledge and understanding

of one another as a group in the house. This was continued for three months and met with very considerable success with some patients and greatly restored the confidence of many of them. They now felt that they were of some use in the world. But unfortunately he could only deal with a very small proportion of patients. The hospital, I may say, has two thousand beds, and as the house can only take thirty patients for three months, you can see that the scope of this work there is very limited, but in America and England that kind of idea has been spread and wards have been turned into a kind of community—of course, not quite so successfully in a ward. I think this house idea is an excellent one, and it has now been adopted in some of the hospitals. The patients in the wards are encouraged to take, so to speak, the responsibility for the diets, for the running of the wards, the cleaning of them, and they again feel that they are part of the community and not the useless individuals they had begun to believe themselves, and along this line there is being done now some very good work.

On the physical lines, in drug treatment and in some electrical treatments and in the modified operation of leucotomy—and the social lines with this group psychotherapy, there has been enormous improvement in the prognosis of serious mental disorders. Something like 30 per cent of patients in mental hospitals are discharged each year either cured or greatly improved; and when I say mental hospitals, I am representing the graver forms of mental disorder.

Now in addition to all this physical and group treatment there remains ever of very great importance psychotherapy, the analytical work, and I want to spend the rest of my time talking a little about the modern trends in analytical work and in the analytical schools. I need hardly remind you that Freud was the originator of the analytical treatment of nervous disorders, what has been called psycho-analysis, and that he had two pupils who became famous in their way. The two diverged very early from him in the story of the psycho-analytical committee that used to meet in Vienna. They diverged from him in very important points. Jung, was one of them and is still alive and going strong, and Adler, the other. In my humble opinion, the Adlerian school is very superficial in its psychology and one does not hear so much about it now, but Jung has been coming more and more to the front, and one of the thrilling literary events of the past four years has been the publication of Jung's works in eighteen volumes, and one is finding tremendous profit from reading them.

One of the main problems that faced psycho-analytical schools in the earlier days was the problem of moral and religious values, and I want to say something about that. Now the psychiatrist of, say, thirty years ago, who was practising analysis, found himself in a dilemma, and this dilemma has not altogether passed today. It is this. He was trained as a medical man; he was trained in methods of analysis and some knowledge of emotional and mental disorders and he was taught also to treat them by the analytical method which Freud had originated. He might modify it himself, as many leading analysts did, but the basic theories were dependent on the Freudian work, but as Freud himself became interested in religion, many analysts took the view, and some still do, that it is not the business of the analyst to have any conception of moral or ethical values, or to direct the patient in any way or to be concerned with the religious aspects of his personality; and you can well see that a psychiatrist trained in Freudian analysis would say, as some still do, when patients bring up any moral, ethical or religious difficulties, 'That is not my department, that is the department of the church'. And so the psychiatrist is in this dilemma. He finds that inevitably, as he goes on in his work, over and over again this happens, that he begins with materialistic conceptions and Freudian conceptions, and as he goes on with his work in dealing with patients he finds that questions of moral values and ethical values and religious problems rapidly arise in the patient with whom he is dealing, and he cannot afford to ignore that large portion of the psychology, of his patients. It is a very interesting point that, as the years went by, psychiatrists themselves became more and more aware of this. For example in 1947 there was a book published by a leading psychoanalyst on *Trends in Psycho-analysis*, and I should guess that seventy-five per cent of that book deals with ethical and moral problems. You see, the honest psycho-analyst who is really seeking to discover what is in his patient's mind and to cope with that, cannot just brush aside moral and ethical values. If he were to think for just a minute he would realise that he himself has values. He places values on certain theories himself. He cannot avoid having values and so he is really denying himself when he says, 'We must ignore values'. Hence it has come about that many psychiatrists have been obliged to come face to face with this problem, and then the problem came whether the psychiatrist should ignore them and refer them to the Church, or whether he himself should attempt to understand something about them and do something about it in practice.

Some very interesting things have happened in this connection. There was a well-known Swiss psychiatrist named Maeder who wrote a very interesting book. He started his work as an agnostic, and as time went on he discovered that many of his patients had religious and moral difficulties about which he himself knew nothing and with which he felt utterly unable to cope. He therefore surmised that it would be worth while to study theology. So he went and consulted a clergyman in Geneva, and asked this Protestant clergyman to train him in theology, and as a result of this training he banished his agnosticism and became an outstanding Christian. That is not the only story of this kind.

The average psychiatrist is honest, and I think that the vast majority are thoroughly honest, as, I am sure, was Freud himself, and are really investigating things and, trying to learn from what is there. He cannot fail to be impressed by the religious conflicts and the moral questions with which so many of their patients are preoccupied; and it would be wrong for him to try to shut his eyes to it. It has been pointed out that if he tries to tell the patient that the patient's religious ideas are illusions, as Freud tried to say, it leads the patient, if the patient trusts the psychiatrist in these things, to a further act of repression in pushing down the religious impulses, religious thoughts, which rise in his mind, and in the end, of course, thereby doing him more harm than good—no question about that.

Now, in closing, it has been a very interesting thing to notice that in the last few years, especially in the last ten years, there has been a definite approach between the theologians and the psychiatrists. For a long while there was a good deal of hostility. There was a good deal of misunderstanding. There was a tendency, as I mentioned earlier, to divide man into compartments and say clergymen dealt with his soul or his spirit, if you like, and the psychiatrist with his mind. The clergyman soon found out that in dealing with his parishioners, and the people who came to him with their problems, he could not avoid knowing something about their minds as well as about their spirits; and similarly the psychiatrist, as we have already seen, found that he could not divide man up in that way, and so there came a time when psychiatrists wanted to pay attention to religion (Jung has written very extensively on religious problems himself), and the clergyman had begun to realise that some knowledge of psychology might be of assistance when dealing with the problems of his parishioners who come to him for help and advice. And so it came about that various societies have been formed in America and in England during the last few years

for the meeting together of clergymen and social workers and psychiatrists to discuss the problems with which people are confronted. I was very interested to have sent to me for review recently from the Editor, a book from America. It is the first proceedings of a society which was formed in America in 1954 by psychiatrists and clergymen and social workers, and they formed in America what they call the National Academy of Religion and Mental Health. Some of them are doing research work and they are going to compare their findings each year at conferences. There have been pastoral psychological groups scattered for some time over the United States. Then in England three or four movements are going on at the moment. There is a Methodist society for pastoral and medical psychology which has a meeting every year at Cambridge, where we get various experts on the theological and the psychological, psychiatric side to discuss particular problems. We had one session about guilt for two-and-a-half days. We had another this year about different age groups, old age and youth, and the average church member, which proved extremely interesting. Then, there is the Guild of Health which is not concerned only with psychological problems; it is concerned also with the questions of the relation of Christian teaching to health generally. There is the Churches' Council of Healing (the Chairman is the Archbishop of Canterbury). These are only a few illustrations of what is going on in the world of psychiatry and religion today.

Four or five years ago. I went to speak to a group of clergy, doctors in Norwich, and at the end of the meeting several of them came up to speak, and among them was the Superintendent of one of the largest mental hospitals in Norwich, a Dr Napier, and he asked me this question: 'Why do you think it is there's such an increase today in nervous problems and in psychosomatic diseases, and so forth?' Well it is, of course, a good idea, if you have a little difficulty in answering questions straight off, to refer back to the questioner. I said, 'Dr Napier, you have a large mental hospital and you have had very much more experience than I have—I should be interested to hear what you have to say about that problem'. Which he did. 'In my opinion, one of the causes of the increase in emotional psychosomatic disorders is that the present generation has thrown over the faith of its forefathers', and he said, 'I consider that faith is a very strong factor in stabilisation of personality, and for that reason', he said, 'I encourage all my patients in the hospital to attend as often as they can at the chapel services and I encourage the chaplains to visit the patients and to discuss religious

questions with them.' Now that was from a man who did not make any profession of Christianity, but that is how he saw things.

Dr D. VERE asked: You say that Christianity will act as a support for a weak personality. Would you agree that this is somewhat double-edged, since any faith may stabilise a weak mind, and even a persistent refusal to face the truth may have a temporary, stabilising effect? Do you feel that Christianity has any distinctive effect different from other faiths?

Dr WHITE in reply said: I do not agree that a persistent refusal to face the truth about one's self has a stabilising effect. It implies an act of suppression which may become repression, and this would result in tension in the mind. Such tension is at the root of emotional and physical symptoms, and often leads to chronic impairment of health. Christianity stands alone among the faiths, in its ability to solve the problem of sin and guilt, and to bring a sense of security and peace of mind. As far as I know, none of the other great world religions are able to provide a satisfactory solution to the guilt which oppresses the soul of man everywhere, or to bring about the happy personal relationship with God assured by the Christian Faith.

D. M. MACKAY, B.S.C., PH.D.

## Man as a Mechanism\*

My subject is a very earthy one. We are, as it were, progressing towards the animal kingdom, and I am briefed to say something about the way in which man's body and brain can be studied as a mechanism, in the kind of way that other mechanical systems are studied: If you like, about the way in which man's 'personality-mediating' parts, his brain and nervous system, can be analysed and understood in the same sort of way as his heart, his lungs, or his kidneys.

You might think that this was a field in which, from the religious point of view, one of the battles for the mind was raging or was likely to rage. I think that in principle this is a possible danger; it is possible that if we as Christians do not read our Bibles carefully enough and think clearly enough, we could find ourselves trying to fight a battle with scientific results over questions of the mechanical explicability of man's brain, in the kind of way that during last century many Christian people joined battle with the biochemists over the chemical explicability of biological processes.

There is indeed today a 'battle for the mind', as a recent book has reminded us, but I want to suggest that it is not the same kind of battle. It arises because men are discovering how to manipulate one another, to treat one another as things subject to their dictates. This raises a very serious religious, ethical, and moral problem, and I have no doubt that if things go as we have seen them go in some parts of the world today, there will be a continuing struggle for human values, for the spiritual dignity of man against the forces of those who are not above manipulating people as things. I want to suggest, however, that this is something quite different from any issue raised by a study of man as a mechanism: that we have no battle on our hands as Christians to prove that man's brain somehow or other will defy physical explanations, or disobey physical laws, nor have we any battle to prove that some kind of non-physical forces are active in man's brain.

That summarises negatively what I want to say, that this kind of stress and struggle would be all wrong in approaching man as a mechanism, but that instead we ought to have as peaceably open minds

\* Transcribed with minor alterations from the recorded proceedings.

in investigating this particular material part of God's creation as in studying any other.

### *The Three-fold Emphasis of the Bible*

Now, of course, if this attitude which I am recommending is defensible, it has to be considered in the light of the Bible and what Christian doctrine has to say about man; and in a short time, I won't do more than remind you, in three 'headlines', what this is, because we are all quite familiar with it.

First, at the mechanical level, the Bible describes man as 'dust', continuous with the rest of God's physical creation.

Secondly, at the psychological level, the Bible speaks of man as 'ensouled', as, if you like, an organism. He is of a piece with the animal kingdom as distinct from the inanimate kingdom on the one hand, and on the other hand he is in some sense able to commune with God, able to be addressed by God as a person. So the first reference to man in this respect in the book of Genesis refers to him as becoming 'Nephesh', which, I believe, is best translated as 'organism' or a mind-body. There is an important point here. As Dr White has already emphasised, the Bible is not suggesting that man has a soul as a watertight extra plugged into a bodily compartment; rather the Bible leads us to *amplify* the conception of man from first, the body, the material, to second, the ensouled body. This 'has more to it' than body; it has an aspect referred to as 'soul', or sometimes 'spirit'.

But then the Bible does not stop there. In a sense its key emphasis is on yet another aspect of man's being—the possibility of his receiving 'spiritual life'. It says emphatically that man is by nature spiritually dead so that when we speak of spiritual life we must mean something different from that which by nature we all have, and sometimes refer to loosely as spiritual.

Therefore, I say, we must distinguish three levels of the Biblical idea of man, the mechanical, the psychological and the spiritual—in this particular sense in which spiritual life is not automatically a property of the human being, but rather his gift from God in the power of Christ.

### *The Scientific Study of Man*

With the Biblical background in our minds then, let us look at the way in which scientists can study man as a mechanism, and see what this sort of study has so far indicated.

First, one must say that the scientific study of man is not new; it has been going on now for several centuries; but the reason why it has never been much in the news until recently is, I think, that with the coming of electronics (the power to amplify minute electrical signals and to control mechanisms with electric currents) a new acceleration has appeared in the tempo of the scientific study of man. It has become possible on the one hand to pick up signals from the single tiny nerve fibres of which we have about ten thousand million in the body, and to study how, for example, the signals from the eye travel back into the brain and how they are coded in the form of electrical impulses along these fibres. In other words, investigation on a scale of size utterly different from anything that was possible before, has been made possible just in this century. Conversely, it has been found possible to stimulate parts of the brain electrically. Thus, for example, a patient who is fully conscious under local anaesthetic can be stimulated in certain parts of his brain so that his hand moves. You can ask him, 'Why did you move your hand?' and he says, 'I didn't—it moved itself'. On the other hand, you can stimulate other parts of the brain in such a way that a man suddenly says, 'I'm thirsty', or in some other way *accepts into his personality* events which you have fed into his brain. You can, by stimulating some parts of the brain (admittedly in epileptic people, since these are normally the sort of patients who allow their heads to be opened), evoke sometimes whole trains of experience. For example, a woman describes herself as 'suddenly back home', and she 'can hear the kids playing at the foot of the stairs'. She is reliving, in a sense, this part of her ordinary experience. In yet other parts stimulation can evoke visual images.

Dr White has already touched on this, and I mention these only as samples of this new power of minute investigation, whereby the science of the organisation of the brain has mushroomed in our century to become one of the biggest and most detailed of the sciences. Out of it all, as Dr White has said, it becomes quite clear that there is a continual two-way connection between what we can say about people's mental experience and what we can say about what is going on in their brains.

*Does 'mind' Require 'gaps' in the Scientific Picture?*

It is a desperately limited picture that we have as yet; a tiny fraction of one per cent of what we would like to know is beginning to be clear, and every few years theories, some of them rather exotic, get

upset and replaced with others which in turn look very queer a few years later. This applies among others to the theories which Dr White cited, so that the field is always changing. The picture of the brain is enormously incomplete, so there is plenty of room for people to speculate and say, 'Aha, you will never be able to explain the whole of it scientifically. I believe that the mind operates in these regions that we do not yet understand.'

What I want to ask is whether what the Bible means by human personality encourages us to this way of talking: whether it makes sense from the Bible's point of view to look for the mind in the gaps in what we understand about the brain, or whether, in fact, the relationship should be a quite different one.

As a start we have to ask whether, and in what sense, the Bible ever gives us ground for considering the human personality apart from its embodiment. Throughout the Bible we find words like 'flesh' used, as it were, interchangeably with 'person'—'all flesh is as grass'; 'my flesh faints and fails'. I do not of course mean this to be a theological study, nor to put undue pressure on individual metaphors; but it does seem that the Bible gives very little encouragement to the idea that we should regard ourselves as somehow seated in a chariot, our body, which is quite separate from us.

What kind of image, then, might begin to do justice to the way in which the Bible does talk about us? For of course it does take very seriously our spiritual nature; and incidentally from the philosophical point of view, quite apart from the Biblical, nothing is more fallacious, as Dr White again pointed out, than the idea of a man sawing off the branch he is sitting on by saying he 'does not believe in mind'. Indeed, I think Dr White would agree that, to do the Behaviourists justice, most even of them would have prefaced such a remark by such saving clauses as 'for scientific purposes' or 'in the laboratory'. When they philosophised and forgot this, of course, it was indeed fatal.

Now, if this is so, if it is possible that the analysis of the body could be carried on without reference to mind, what kind of image can we reasonably use? No one image could be entirely adequate, I am convinced, because to be an ensouled body or an embodied soul or, if you like, to be a person, is a thing unique in our experience. There is no perfect analogy for it; but I want to suggest that there are one or two analogies in our experience which are a little more helpful than the image of a charioteer sitting in a chariot. I should mention, by the way, the big difficulty with the charioteer model: that whereas the earlier

scientists who sometimes used it thought that there were plenty of loose ends in the brain on which, as it were, the soul in its chariot could pull and push to control the way the machine moves, the recent discoveries, thin though they are, seem to indicate that all the really important control links are closed loops, so that there are no loose ends of the sort that are wanted for this kind of job.

*Multiple Aspects and the Fallacy of 'nothing-buttery'*

Well then, positively, what can we suggest? I want to begin with an illustration which is familiar to all of us—the use of lamps to signal from ships at sea.\* When a man sends a message from ship to shore, then in a sense all that is coming from the ship is a series of flashes of light; but the trained man who sits on the shore watching this light intently, says, 'I see a message ordering so and so to proceed somewhere', or, 'Goodness, they're in trouble!' Now why does he say this? All he has seen is 'nothing but' flashes of light. The whole pattern of activity can be perfectly well described thus by a scientist, so completely that from the same description he could reproduce at any time exactly what the man on shore saw. He does not *add* the message as a kind of 'extra' at the end, and it is clearly silly to say he is 'leaving out the message' as if it were very wrong to do so. What he has done is to choose one way of approaching a complex unity, namely the sending-of-a-message-from ship to shore, one aspect of which, if you like, is purely optical, purely physical, allowing of complete description in such terms as the wavelengths of the light and the time pattern. On the other hand, when he reads it as a message, it is not as if he has found something *mysterious* going on *as well as* the flashing. Instead, he has discovered that the whole thing, when he allows it, as it were, to hit him in a different way, can be *read* and can make sense. The message here is related to the flashing of light, not as an effect is to a cause, but rather as one aspect of a unity is related to another aspect.

Take another illustration. Two mathematicians start arguing about a problem in geometry. They take chalk, they make a pattern of dots and lines on the board, and the fun waxes fast and furious. Can we imagine some non-mathematician coming in, and saying in amazement 'I can't see what you're getting het up about—there's nothing there but chalk'? Once again this would illustrate what I like to call 'nothing buttery'—the idea that because in one sense, at one level, or viewed from

\* *Footnote:* with apologies for some repetition of points made on p. 82 (Author).

one angle, there *is* nothing there but chalk, therefore it is unnecessary, it makes no sense, it is superfluous to talk about what is there in any other terms. Again, if the mathematicians protest, 'But there is a figure there—we are talking about these angles', and so forth, they are not suggesting that the other chap's eyes are failing to detect something on the board that they are seeing. Both of them are detecting exactly the same light waves. It is not that the mathematicians have a sixth sense or anything queer that enables them to receive from the board some invisible emanations that the other fellow is not receiving. The point is that as a result of a different 'set', a different *attitude* to what is there, they have the power to see in it or, if you like, to abstract from it, an *aspect* which the other chap misses. Of course, in this case he can be trained to it. There is no great difficulty in their eventually coming to agreement, and he then realises that the geometry pattern is related to the chalk on the board, not indeed as effect is to cause, but rather as one aspect is to another.

*A Relationship more Intimate than 'Cause-and-effect'*

I want to clarify this alternative to 'cause-and-effect' if I can, because it does bear on the questions that Dr White raised earlier about the 'causation' of bodily action by mental activity. If an argument were to come up as to whether the light causes the message or the message causes the light, whether the chalk-distribution causes the geometry problem, or the geometry problem causes the chalk-distribution, we would see at once that the word 'cause' is the wrong word there. Causality is a relationship between *two* events or sets of events—the cause and the effect. Here we have not two events or situations, but one. You cannot have the flashing of the light without the message: they are one set of events. You cannot have the chalk-distribution without there being at the same time the problem on the board. On the other hand you could have the same message or problem in a different embodiment; and therefore I would rather say that the one 'embodies' the other.

*Man as a Mental-bodily Unity*

Now let us pass to the problem of relating mental activity and bodily activity in the human being. What I would like to suggest is not indeed that the relation between them is as simple as the relation between the geometry problem and the chalk, but that in the same kind of way it

would be a mistake for us to try to regard either of them as the 'cause' of the other. We should rather recognise that they are a unity in the same kind of sense, so that, given either, you have the other; and yet it would be absurd to say that one was 'nothing but' the other because, of course, it all depends on the purpose for which you are approaching the situation. If you tell the man that what is coming from the ship is nothing but light, when in fact it is an instruction that unless he gets out there in half an hour he is 'for it', he will laugh at you or do worse. Similarly if a man says, 'I have a decision to make and I feel it is a heavy one and I will be responsible for it', then for any one to say, 'Oh, but my dear chap, once the scientists have explained all that is going on in your brain it will be nothing but a matter of physico-chemical activity' would be to miss the whole point of what the man is doing. He is indeed talking of the same unity, but from a different 'angle' or at a different logical level, or, if you like, from the inside rather than from the outside. What he says may be as important and valid from his angle as what the scientist would say from his. I have deliberately said 'as' and 'as' rather than 'more' and 'than', because for certain purposes what the scientist says about the brain may be crucially important, particularly in cases of mental disease.

It could be terribly important to realise that a man's hallucinations or what have you, that have suddenly sprung up, have at the mechanical level a physico-chemical corollary, so to speak—in other words, something that corresponds to each in the kind of way that the chalk does to the geometry. This might, for example, be the result of a brain tumour, so that if you could get the tumour out without taking out too much that matters along with it, that man's hallucinations might cease and he might then be able to live a normal life.

Similarly, I would say, we must not belittle the importance of understanding the mechanism of what goes on in a man when he is taking a decision—it can be terribly important. But for all such normal activities, when there is nothing going wrong in our brains, and by the mercy of God we are normally functioning human beings, then when we face decisions the language in which it makes sense to discuss the thing, the level at which it makes sense, are those of personal decision and responsibility, and not bio-chemical activity. The tag about the little girl who said 'It ain't my fault, it's my glands' illustrates the fallacy which arises from confusing this relationship between 'dual aspects of a unity', with the relationship of cause and effect. I suggest for discussion that it is misleading and dangerous to discuss the relation

between mental activity and bodily activity as cause and effect, whichever we make the cause. I would say that this is trying to tear apart something which does not admit of that sort of tearing apart, any more than do the geometrical figure and the chalk in which it is embodied. If the chalk changes its distribution, you have indeed a new figure on your hands at the other level. But you cannot have the one changed without the other, and the one is necessary for the other. So it is a relation of necessity but not a relation of causality.

### *The Reality of Human Decision*

Now, of course, this raises many specific problems. I would like to refer only to one, and I will do it briefly because in a recent paper in the journal *FAITH AND THOUGHT* (Vol. 90, p. 103) I have discussed it at a little more length. The problem might be put in this way. Suppose that a man is undertaking a decision, and for the sake of argument, suppose that all the enormous gaps were filled up in our ignorance of what goes on in his mechanism, so that it were conceivable that some super-scientist should know from the outside what is going on in his brain and should be able to calculate what is about to happen. Would not this mean that the super-scientist would know the 'real truth' about the decision before the man had made it, and therefore the decision would not be a real one? This is the way in which the dilemma is often put. If my brain is a mechanical system which could, in principle, be explained completely as such, then does not this mean that my decisions are an illusion, something about which an outside observer would know the real truth while I only 'thought' that I was taking my decision?

The answer to this question may seem a little startling, but I believe it to be inescapable. At first sight, you might suppose that if a scientist, looking at your brain from the outside, can write down on a piece of paper a description of what he sees, then if he has seen correctly, what he has written down on paper must be 'the truth'—a true fact about you. But let us think what would happen if you yourself were to believe what he has written on the paper. If what he has written on the paper describes, let us say, the part of your brain that is concerned with your bodily metabolism, then there is no great difficulty; you can believe it and it makes no difference. If it is the part of your brain that is dealing with the rate of your breathing, well then, perhaps the excitement of reading what is on the paper will alter the rate of your

breathing and so will make the description a little bit out-of-date. But if a scientist knows in advance that he is going to show it to you, then he can, in this case, calculate in advance what effect it will have on you and so eventually arrive at a description which he can give to you, and it will have the effect on you which will make your breathing correspond to what is described.

### *Logical Indeterminacy*

But now what if the description that he writes on the paper refers to the part of your brain which at the moment is, so to speak, lying blank waiting to receive the description? He is then in a really tough logical dilemma; because whatever he writes on the paper is going to change your brain to a new state when it lands. He cannot possibly allow in advance for the effect, because then your brain would already have to be in the state which the description would have to produce in landing on it. In short, the description written on the paper, if you believed it, would change your brain in such a way that it no longer corresponded to the description. It is quite clear, I think, that whatever else you can say about the description on paper, for you that description is not valid. In a very strict sense it is incredible—not only because you do not *feel* like believing it, but because any attempt on your part to believe it would make it out of date. We therefore have the logical paradox that what the man has written on the paper, although it may be valid for him as long as he keeps it to himself, is not 'the truth', because 'the truth' is something that anyone would be right to believe; but here is something which *you* would be *wrong* to believe—and which he knows you would be wrong to believe. If you believed it, you would make it out-of-date, and he would be wrong to believe it too. For you, it is *logically indeterminate*.\*

This, I think, goes very deep. It may not be obvious at first sight, but the point is that even the most accurate scientific descriptions or predictions, based on such states of the brain as we have been discussing, cannot be said to be universally 'true' and cannot be valid for the man whose brain it is.

### *The Necessity for Multiple Accounts of Man*

We thus arrive at, to my mind, the real mystery of what it is to be a man, viewed from the mechanical level—not, I suggest, that anything

\* See my paper 'On the logical indeterminacy of a free choice,' in *Mind*, 69, 31-40, 1960.

necessarily is physically queer in the brain, but that there is something intensely queer at the logical level about scientific descriptions of his brain. While people who are sufficiently detached from him, as it were, as outside observers—who are able to prevent such descriptions from having any effects on the agent—may regard these descriptions as valid-for-them, they cannot claim that they are 'true'. That is the odd thing because, we remember, if they were 'true', the agent would be right to believe them; whereas in fact if the agent believed them they would not be true; they are not valid for him.

In other words I think this illustrates the logical necessity for at least *two* viewpoints on the activity of a man; and this is what distinguishes man as a mechanism from all other mechanisms that we know in the world. Of any other mechanisms in the world, descriptions can be written down at a scientific level, as it were, which can be said to be true (or false) and there is nothing logically wrong about saying it. Anyone and everyone would be equally right (or wrong) to believe them. But descriptions of any man's brain, if they go into sufficient detail, can in the end only be said to be valid from the partial viewpoint of the observer. In the very strongest sense they are *invalid* for the agent, and hence not 'true', because anything that is 'true' is valid, of course, for everybody.

We have therefore to admit that what the agent may rightly believe about his action must be something *different* from what the observer has written on the paper. He would be wrong to believe that, therefore presumably he would be right to believe something else. I want to suggest that what he would be right to believe is that he has a decision to make, that unless he makes it, it won't be made, that the way he makes it, it will be made, that he had better get on with it and that he will be responsible for the way it is made. The validity of this, I suggest, depends not on a *physical* gap in the chain of cause and effect in his brain, but on a *logical* gap in the structure of what he can validly believe.

### *The Irrelevance of Physical Indeterminacy*

If, as I believe, this kind of 'gap' is wide enough for all that religion requires here, there would seem to be no religious justification for any secret hope that science will come up against physical snags in explaining the physical brain. There *are* plenty, of course! To mention only one, there is the well-known fact that when you come down to the

scale of the elements of matter, electrons and so forth, then it is physically impossible (as far as we know now) to predict the way in which two electrons will go after they have collided. They scatter in a way that we cannot predict on any basis known to physics, so that, if we *wanted* to predict the detailed behaviour of a brain, that would be impossible anyway. But what I am suggesting is that this kind of physical awkwardness is not *necessary* for seeing a place, and indeed a logical place, for the reality of human decision and other mental activity. What we have seen suggests that we have here a 'unity' which demands, to do justice to it, at least two levels of discussion, the level of the mechanical from the outside, the level of the personal from the inside standpoint of the agent himself. [The latter, of course, can be shared by other agents through their mutual knowledge of what it is to be an agent.]

Finally, what of 'spiritual life'? Could we perhaps agree now that in the kind of way that we see psychological life 'embodied' in the *physical* brains of persons, it is at least not implausible to see, in Biblical terms, spiritual life as 'embodied' in the *psychological* mechanism of a man, if God by his grace is willing to give that man that life?

The suggestion would be then that the breath of spiritual life, in the Biblical New Testament sense, does not necessarily entail something which is 'unscientific' psychologically. In other words, I do not think the Christian has any more reason to do battle with the psychology of religion, even the psychology of religious conversion, than with the physiology of the brain. We may well doubt that such a private matter will yield much grist for the scientific mill; but that is not to say that the scientist is wrong to look for 'laws' in what data he can get. I am suggesting, then, that spiritual life may be thought of in a general way as related to the scientific mechanistic structure of psychological theory (with which Freud among others has dealt) in the kind of way that psychological life can be said to be related to the activity of the nerve cells and other mechanical components (with which physiology is concerned).

True conversion, as distinct from superficial, is the only way known to Christian faith of bringing about this transformation in a way which 'follows on' and does not do violence to the personality embodied. I can perhaps illustrate what I mean by coming back for a moment to our geometry problem. The geometry problem, on the one hand, could be viewed as nothing but chalk, and on the other hand, could be viewed as a figure of lines and angles. Now the problem can be altered

in any number of ways by rearranging the chalk. If you do violence to it as a problem by laying down new lines or rubbing out lines and changing them, then you get a new problem, or your problem is removed, but you have achieved it only at the cost of doing violence to it. The mathematicians are concerned with the only kind of resolution that interests them, namely by discussing the thing at its own level, respecting its nature, and not forcing or distorting it. Now similarly, I suggest that, while in principle one might imagine that by suitable surgical manipulations you might turn an angry man into a peaceable man, and so forth, this would not amount to conversion in the biblical sense, for you would have solved the man's problem at this level by doing violence to the man. In a sense you have ended up with a different man. As I understand it, the claim of Jesus Christ, that only through Him could eternal life come to us as personalities, indicates that only by His power as the Creator and Upholder of our whole being can our personality be reshaped in a way that does not do violence to us. Only His way of Love preserves the continuity between us as we are now, with the problem of our self-centredness and our rebellion against God, and us as we shall be when He has turned our hearts to God.

In summary, then, I would suggest not only that I see harmony between the study of man as a psychological being and the study of man as a mechanism, but that in some doubtless crude and imperfect way this even throws a little light on the relation between the spiritual life which is offered to man and the psychological structure in which that spiritual life must, by God's grace, be embodied.

Major C. W. HUMBLE said: With regard to Professor MacKay's point about choice being influenced by prediction, I would like to ask these questions. (1) Suppose a super-physiologist does not communicate his prediction truthfully to his subject? He might write down, 'My calculations show that if I tell this man he is going to choose porridge, that will make him choose prunes out of cussedness. I will therefore predict that he will choose prunes, but tell him that I predict that he will choose porridge.' Does this possibility invalidate the argument? (2) Is it possible to set up an analogous situation in a computer programme?

I would like to call attention to an interesting book, *Chance and Providence* (Faber and Faber), by William G. Pollard, who is both a parson and a nuclear physicist. His contention is that it is only for

convenience that scientists have mainly studied situations in which a unique prediction can be made, as in the case of eclipses, for instance, and that the laws of nature must for the most part be expressed in terms of probability. Thus there are two kinds of uncertainty, that due to human ignorance, and that which is inherent in the nature of things, notably Heisenberg uncertainty in atomic theory, which may also be applicable to genetic mutations. Pollard extends this idea to macroscopic phenomena, such as fluid motion, which seems to me to be stretching it rather far. But might it not be applicable to brain cells, which must be subject to random noise?

Professor MACKAY replied: Major Hume's super-physiologist cannot claim that what he is communicating to his subject *ought* to be believed. If *what he has written down*, i.e. what he himself believes, were offered to his subject, it would in turn lose its predictive validity. This is my point.

The logical aspects of this situation can indeed be set up in a computer programme, but as a computer handles only the symbolic *tokens* of beliefs, the question of their truth for the computer does not arise. It is persons who believe, and not their brains. Computers may in some respects be analogous to brains; but to attribute to machinery of any kind, whether biological or otherwise, the activities of persons (e.g. thinking, believing, etc.) would be a logical solecism.

My criticism of Pollard's thesis would be along the lines of part 2 of my recent paper on 'Brain and Will' in FAITH AND THOUGHT, vol. 90. I have there suggested that brain cells may sometimes be physically indeterminate to a significant extent; but such 'noise' does not seem to me to provide the right kind of indeterminacy for the attribution of personal responsibility in human decisions.

GORDON E. BARNES, M.A.

## Some Reflections on the Evolution Controversy

### A. INTRODUCTION

Exactly a century has elapsed since the notorious debate at the Oxford meeting of the British Association, when Samuel Wilberforce, on the one side, and Thomas Henry Huxley, on the other, fired the first shots in the great battle over Evolution. During this period the debate has developed along several lines; and has involved, as its constituents, many and varied controversies, scientific, philosophical, and theological.

The scientific aspects of the debate are largely irrelevant to the subject matter of this paper, and, indeed, impertinent to the interests of the Victoria Institute. Suffice it to state here that, although the mechanism of evolution is still an open question, the fact of evolution, and the major features of its course, are now matters of general agreement amongst biologists. The time has come, therefore, when one cannot afford to treat evolution as anything less than a well-established scientific theory.

The gradual acceptance of this theory during the last hundred years has occasioned the philosophical and theological controversies which are the subject of this paper. These controversies are by no means dead. This very weekend, Sir Julian Huxley writes in *The Observer*,<sup>1</sup> 'The Huxley-Wilberforce duel a century ago symbolised the defeat of the idea of special creation by that of biological transformation. Today the entire god-theory is in competition with the extended evolution theory, and its picture of the world and man's destiny is in process of being superseded by the evolutionary vision.' Three years ago, David Lack wrote, 'The modern tendency is to suppose that the conflict lies wholly in the past, though this seems largely because each side fails to appreciate or accept essential claims held by the other.' The book, *Evolutionary Theory and Christian Belief*,<sup>2</sup> in which these words occur, has as its subtitle '*The Unresolved Conflict*'.

<sup>1</sup> J. S. Huxley, 'Science and God', *The Observer Week End Review* (17 July 1960).

<sup>2</sup> Methuen, 1957.

In an earlier paper<sup>1</sup> read to the Institute I discussed certain philosophical principles which relate scientific and theological descriptions of the universe; and it is my purpose in this paper to show that the application of these principles to the evolution conflict does, in fact, go far towards providing a possible resolution.

The various points of contention reviewed below are not in the order of historical sequence but in what appears to be the most logical order for treatment. Where an argument has been reiterated so frequently in the past as to become well known, and even popular, I have deemed it unnecessary to give detailed references to authors who have used it.

## B. PHILOSOPHICAL AND THEOLOGICAL CONFLICTS

### *Evolution and the Concept of Creation*

The ideas of evolution and creation have often been regarded as mutually exclusive. This is because 'creation' has been assumed to imply a particular mechanism and time scale, such that God's creatorial activity, in its objective features, resembles the work of a conjurer who produces a rabbit out of thin air. In other words, an imaginary observer describing what he witnessed would do so in terms of an instantaneous displacement, or replacement, of water or air by an organism. This concept of creation is, of course, opposed to the theory of evolution.

It seems clear, however, from a study of the various biblical words (Heb., *bara, asah, yatzar*; Greek, *poieo, ktizo*) used to describe God's creatorial activity and the various Scriptural passages (e.g., Gen. i. 1, Prov. viii. 22-31, John i. 3, Col. i. 16-17, Heb. i. 3, Heb. xi. 3) recounting it, that this concept of creation is by no means a necessary Christian idea. The Biblical view of creation is, I suggest, limited to the facts that God planned the universe, brought it into being, and continually maintains it. As far as I can see, it has nothing to say about either the mechanism or the time scale involved.

If this is true, then science, which is objective and empirical, similarly has nothing to say about creation. Creation and evolution are mutually independent concepts derived, one from faith in a revelation, and the other by the method of science. They are complementary rather than contradictory.

<sup>1</sup> G. E. Barnes, 'Philosophical Principles in the Teaching of Science and Religion', *J. Trans. Vict. Inst.*, 88 (1956), 79-98.

Those who have denied the truth of evolution in order to establish the doctrine of creation have, then, been guilty of an illogicality. The true antithesis of evolution is spontaneous generation, while the correct antithesis of creation is materialism. So the scientific question that must be faced is: which is more in keeping with objective facts, evolution or spontaneous generation? The answer which science gives at the moment is undoubtedly 'evolution'; but whatever the final answer may be, it will be irrelevant to the philosophical question of creation or materialism.

### *Evolution and Genesis*

Of the many problems confronting the Christian Church as a result of the establishment of the theory of evolution, perhaps the most intractable is that of the relation between geological history and the creation narrative in the Book of Genesis.

The difficulty of reconciling the two has led some to reject the Genesis account as of no more worth than ancient Babylonian creation myths; as being a mere 'fairy tale' from the nursery of Middle Eastern civilisation. Others, still rejecting the historicity of the account, nevertheless see in it an allegorical picture of spiritual truth. Others, believing the account to be intended as history, have tried, with various degrees of success, to correlate it with geological history. Yet others, believing the account to be historical, and failing to reconcile it with the scientific account, have rejected, partially or completely, the theory of evolution.

The crux of the debate is the interpretation of Genesis i and ii, and this is influenced very largely by the theological viewpoint of the interpreter. If one shares, as I do, the 'orthodox' view that the Bible (but not any particular recension or version) is, in itself, an inerrant divine revelation, one is bound to regard the creation narrative as, in some sense, historical. Its style is that of a description of events that actually happened; and, in the absence of good Scriptural evidence to the contrary, the passage must be taken at its face value.<sup>1</sup> This view of the narrative raises problems which must be faced, but which can be discussed here only in general principles. (To those who take a more liberal view of the Bible, the narrative presents less difficulty.)

<sup>1</sup> This is not to deny that there is figurative language, e.g. myth, in the narrative; history may be, and often is, written figuratively. But the passage itself must determine what is to be understood figuratively.

One problem concerns the implication of the word translated 'after his kind' in Genesis i. 11, 12, 21 and 24 (A.V.). It has frequently been alleged that this phrase implies identity of parent and offspring, and therefore precludes the possibility of 'descent with modification'. This, however, is a false interpretation of the Hebrew, which would be perhaps better translated 'in all its varieties'. The emphasis of the expression is not to limit the variation of types, but rather the opposite. As Driver<sup>1</sup> says, it 'calls attention to the number and variety of the different species included under each head'. Furthermore, the passages which include the expression are concerned with the origin of species, and not with reproduction or descent within the species.

I use the word 'species' here for convenience, but it should be remembered that the species-concept of today is foreign to the Bible. And even more foreign is the idea of the fixity of species. This idea stemmed from the work of John Ray (seventeenth century) and Linnaeus (eighteenth century), and later became 'read into' the creation narrative by Christian orthodoxy. Thus, when Darwin attacked the fixity of species, many Christians felt obliged to defend it; and so developed one unfortunate, and quite unnecessary, conflict.

Another problem is that of the antiquity of life. According to the formerly widely accepted chronology of Ussher, the events of Genesis took place in the year 4004 B.C.; whereas geologists were estimating the age of life upon the earth in terms of millions, or hundreds of millions, of years.

Now estimates such as that of Ussher were based upon Old Testament genealogies; and, apart from being notoriously unreliable (Angus<sup>2</sup> says that 140 different estimates exist), they must relate, not to the origin of life, but to the time of Adam. Whether or not they indirectly imply anything about the antiquity of life depends upon the correct interpretation of Genesis i. If this chapter covers no more than one week, quite obviously the antiquity of life is asserted to be little more than the antiquity of Adam. But in fact the Hebrew text is sufficiently indefinite to allow various interpretations which do not specify the time scale of creation. Some writers,<sup>3</sup> for example, have seen in the problematic Hebrew construction of verse 2<sup>4</sup> evidence of

<sup>1</sup> S. R. Driver, *The Book of Genesis (Westminster Commentaries)*, p. 9.

<sup>2</sup> J. Angus, *The Bible Handbook*. Revised edition by S. G. Green, R.T.S.

<sup>3</sup> E.g. H. P. Liddon, *Romans*; Wm Kelly, *In the Beginning*; G. H. Pember, *Earth's Earliest Ages*.

<sup>4</sup> For discussion of this construction, see *J. Trans. Vict. Inst.*, 78 (1946).

an unspecified time lapse between the original creation in verse 1 and the events recorded in the subsequent part of the chapter. Others<sup>1</sup> have argued from the frequent figurative use of the Hebrew word for 'day', that the days described in Genesis were long periods of time, possibly equivalent to geological epochs. Yet others<sup>2</sup> have taken the 'days' to correspond with a series of revelations concerning the creation, rather than the creative events themselves, and thus having no implications concerning the antiquity of life. So I think it would be true to say that geological estimates of life's history upon the earth present no great difficulty to the Christian today.

But there is still another problem: the relation between the order of events detailed in Genesis 1 and the sequence of life indicated by palaeontology. Many attempts have been made to harmonise the two, particularly by those who regard the days of Genesis 1 as long eras. Some of the harmonies have been successful, but they are so speculative as to be of little value. The biological categories in the Hebrew of Genesis 1 bear no relation to the biological categories of the modern scientist. The Hebrew employs such categories as 'sprouting things', 'trees', 'swarming animals', 'flying animals', 'animals capable of domestication', 'creeping animals', 'monsters'; and, if one identifies these categories with particular taxonomic groups in order to harmonise Genesis and geology, one is clearly reading into the creation narrative more (or less) than is really there.

It has often been said—and as often forgotten—that it is not the function of the Bible to teach science. It is rather a revelation, to faith, of spiritual truths which man could not ascertain for himself. For the purpose of this revelation it sometimes makes assertions about events which science is competent to describe; but when it does so, the descriptions it gives are different from those which science gives. And one must not expect to be able to argue from one type of description to the other. Genesis 1 is no exception.

An analogy will perhaps make plain the sort of attitude which I suggest one ought to adopt towards the creation narrative. A well-known economist is commissioned by a government department to make an extended tour of Africa, in order to report on certain economic

<sup>1</sup> E.g. Hugh Miller, J. W. Dawson, James Dana (amongst geologists). Various hebraists and theologians (e.g. S. R. Driver) have regarded this interpretation as possible; while some writers have claimed support for this view in the *dies ineffabiles* of Augustine.

<sup>2</sup> E.g. P. J. Wiseman, *Creation Revealed in Six Days*.

problems in that continent. On his return to this country, he is met at the airport by a television interviewer, who requests him to tell his unseen audience something of his impressions of Africa. Of all that has happened to him on his journeys, he selects one or two events, and one or two colourful personalities he has met, and describes them in everyday language, in order to make a few salient points of particular interest to the general public. His remarks at the airport, however, bear little resemblance to the official, technical, report he later presents to the government department. This contains a detailed itinerary, and a mass of objective facts and figures; and is of little interest to the 'man in the street'. Now the scientific account of the origins of life and species is like the technical report; it consists of a wealth of objective facts, presented in technical jargon, and means little or nothing to the majority of mankind. The creation narrative, however, is akin to the traveller's impressions: it is factual; but the historical events mentioned are just a few, selected from millions of years of history, and recounted in everyday language, so as to appeal to all men at all times. Furthermore, the actual selection of events has been determined by the need to illustrate a few salient, and all-important, spiritual truths, that are the concern of all mankind.

In the above analogy, it would be folly to insist upon a 'harmony' of the television account and the technical report. I suggest it is equally unprofitable to attempt a harmony of Genesis and geology. Yet Christians have so often become so absorbed in this attempt, that they have forgotten to ask the right sorts of questions about the opening chapters of the Bible; chapters which, in the style of simple word-pictures from pre-history, convey the fundamental spiritual truths of the relations of God to nature, God to man, man to nature, husband to wife, the Tempter to man, and others.

### *Evolution and the Nature of Man*

The similarities between man and animals have been recognised throughout the whole period of church history, without causing any concern to those who would maintain a Christian view of the nature of man. Aristotle's classification of animals, which was in use until the seventeenth century, included man in the *genus*, hairy viviparous quadrupeds; John Ray's classification, which superseded Aristotle's in the seventeenth century, included man in the Anthropomorpha; and Linnaeus, in the eighteenth century, placed man in the order Primates in

the class Mammalia, an arrangement still in use today. The similarities upon which these classifications were based were, however, always regarded as, in a sense, coincidental. Essentially man was different from the beasts in being 'in God's image'; but God, in making him from the dust of the ground, independently of animals, had seen fit, in His sovereign wisdom, to give man certain physical resemblances to what were regarded as 'the lower creation'.

Now the theory of evolution explained these similarities as being due not to coincidence, but to essential continuity between man and the beasts, within the animal kingdom; and this appeared, to many Christians, to challenge the Biblical view of man. How, they asked, could a being derived by descent from animals be also a unique creation in God's image?

In an earlier<sup>1</sup> paper I argued that scientific similarity did not necessarily entail similarity of value or significance, but here it is needful to go further and point out that even scientific continuity implies no equality of value. There is, for example, scientific continuity between the oil colours smeared upon the palette in an artist's hand and the oils distributed on the canvas in front of him. One could say that the oil-painting was 'evolved' from the smear on the palette by the operation of forces exerted by the palette knife. There is complete continuity here; but the picture is a new creation, and may be a masterpiece of art: the oil-smeared palette, on the other hand, is of no significance, except as a means to an end. And so with man: if science should provide adequate evidence that he is, like the animals, a product of evolution, this is no ground for denying that he is also a being of unique spiritual value. Various Biblical passages<sup>2</sup> affirm man's continuity with 'the dust': the theory of evolution merely adds an intermediate stage (to produce the sequence: dust, animals, man). If man's continuity with the dust is not incompatible with a spiritual view of man, surely his continuity with animals is no hindrance to this view. In fact, I suggest it is Scriptural to regard man as being linked with both the animals and God; with the animals by way of his organisal features (Heb. *Nephesh*), and with God via his spiritual nature (Heb. *Ruach*).<sup>3</sup>

The Christian view of man is that he is, not only a spiritual creature, but also a sinful creature; that the lack of harmony, within both

<sup>1</sup> G. E. Barnes, *op. cit.*

<sup>2</sup> Gen. ii. 7, Gen. iii. 19, Job xxxiv. 15, Ps. ciii. 14, Eccles. xii. 7.

<sup>3</sup> For fuller discussion see G. E. Barnes, 'The Nature of Man', *Christian Graduate*, 4, 2 (1951).

individual and society, is a consequence of a faulty relation to God; a state of rebellion, in fact. With the general acceptance of the theory of evolution, an alternative explanation became possible. Human anti-social behaviour was regarded by many as the relic of animal behaviour in our ancestry. It was not that man had fallen, but that he had not risen high enough. Sin was not a spiritual perversion but an unfortunate hereditary behaviour pattern.

It is, of course, very easy to find close similarities between human and animal behaviour. This is not surprising, since human beings, as organisms, have basic needs similar to those of animals (food, territory, self-protection, a mate, etc.); and the satisfaction of those needs involves sometimes co-operation, and sometimes competition, in the community; and sometimes tension within the individual; just as it does amongst animals.

But, as has already been stated, scientific similarity does not imply spiritual equivalence. Two animals may fight over one mate and, as far as we know, be quite unaware of any moral issues involved; when humans do the same, they know that their behaviour requires an ethical appraisal. The ethical *codes* by which they judge behaviour vary with their philosophy, religion, and social environment; but an ethical *sense* appears to be universal amongst men. Everywhere the concepts 'I ought' and 'I ought not' find expression.

As long as man is aware of this responsibility, the possibility remains that anti-social behaviour is correctly described as sin. For sin, in the Christian sense, is not assessed by the objective features of behaviour, but by man's mental attitude to what he can ascertain to be right or wrong. And this, in turn, depends upon man's relation to God. But it has already been pointed out that man's continuity with the animals in no way excludes a spiritual view of man, as a being capable of knowing God. If he is capable of knowing God, he is capable of knowing God's will; and if he is capable of knowing God's will, he is also capable of defying God's will. Man, then, may still be regarded as a sinner; but his sin is not a necessity imposed by his link with animals, but a potentiality involved in his link with God.

### *Evolution and the Character of God*

The view that evolution is to be regarded as the working out of God's creatorial plan has been challenged on the ground that certain features of evolution are allegedly incompatible with the character of God. It

is said, for example, that the randomness of evolution, accompanied, as it is, by extinction of numerous individuals and races, is wasteful, and cannot be regarded as consistent with control by an all-wise and omnipotent God. Or, it is said, the concepts of struggle for existence, and natural selection, paint a picture of 'nature red in tooth and claw', which is inconsistent with a God of love.

The first of these alleged incompatibilities has been dealt with in detail in a recent paper<sup>1</sup> read before this Institute. It was there pointed out that a series of events may be random (in the technical sense of 'unpredictable') and yet at the same time be the outworking of a well-conceived plan. The fact that the plan in this case does not always make sense to the scientific observer is of little significance. The most enlightened Christian will readily confess that there is much beyond his comprehension in God's present working in the world; and I see no reason to expect that God's past work should be any less incomprehensible.

The idea that evolution has been accomplished by gross ferocity on the part of predatory animals, with consequent inordinate suffering on the part of weaker animals, is a misunderstanding of natural selection. 'The struggle for existence' is a metaphorical expression, which does not imply an actual physical contest. It means only that slight variations in the organism-environment relation are sufficient to produce a differential reproduction rate, which will, through several generations, tip the balance of a population towards one variant form rather than another. If this has been the mechanism of evolution in the past, it has probably entailed no more suffering than occurs at the present day. This is not to deny that the problem of suffering still remains for the Christian; but it suggests that the theory of evolution by natural selection does not augment the problem in any way.

### *Evolution and Natural Theology*

Perhaps the most impressive argument of Natural Theology has been the Teleological Argument. This, which reasons from design in nature to a Designer, was formulated by Aquinas, and later expounded in great detail by Paley.<sup>2</sup> It was attacked, on logical grounds, by both Hume and Kant, but nevertheless continued to enjoy a great popularity

<sup>1</sup> G. E. Barnes, 'The Concepts of Randomness and Progress in Evolution', *Faith and Thought*, 90, 3 (1958), 183-204.

<sup>2</sup> Wm Paley, *View of the Evidences of Christianity*, 1794.

in Christian apologetic works for another century or so. A major part of the evidence, on which the argument from design was based, was biological: the evident fitness of the environment to sustain life, and the intricate adaptations of organisms to the environment. This coadaptedness of organism and environment is a very striking example of order in nature; and, before the theory of natural selection was developed, the only way to explain order satisfactorily was by design; and design required a Designer.

By the theory of natural selection, this order can, however, be explained mechanistically. As random changes take place in organisms and their environments by the operation of natural laws, only those changes which adapt the organisms to their environments persist. In this way order is maintained. This mechanistic explanation does not require the postulate of a Designer; but neither, on the other hand, does it exclude the possibility that there is one.

#### *Evolution and Ethics*

The theory of evolution has been linked with ethics in three different ways. It has been argued, firstly, that man's ethical sense (i.e. his awareness of a responsibility to engage in certain thoughts and actions, and to avoid others) has been evolved alongside the evolution of his physical characters, and possibly by similar mechanisms; secondly, that man's ethical values can, or must, be derived from a study of the features of human evolution; and, thirdly, that ethical values must be such as to ensure future evolutionary progress of the human race. The second and third of these arguments, which are logically related, and which usually go together, have been discussed fully elsewhere.<sup>1</sup> The first, however, requires consideration here.

Natural selection has usually been invoked as one factor, if not the only factor, in the evolutionary derivation of man's moral sense. It has been suggested that moral codes have been established because behaviour in conformity with them is of adaptive or survival value.

Now it may be possible to explain man's peculiar behaviour patterns in this way: but it is difficult to understand how the concomitant subjective awareness of responsibility, or duty, has come about by natural selection; particularly as the sense of duty often conflicts with outward behaviour, and thereby produces psychological tension. It is, furthermore, difficult to explain how altruistic ethics, which may be damaging

<sup>1</sup> G. E. Barnes, *op. cit.* *Faith and Thought*, 90, 3 (1958).

to the person who puts them into practice, have been developed by natural selection.

It is probably for these reasons that recent writers<sup>1</sup> on Evolutionary Ethics have further invoked Freudian theories to account for psychological attitudes which, it is alleged, are determined subconsciously by experiences during infancy. But, as Lack<sup>2</sup> has pointed out, these writers appear not to have worked out satisfactorily the relation between Freudian theory and natural selection. For attitudes determined by infantile experiences are not, as far as we know, inherited and, therefore, cannot be subjected to control by natural selection.

Another way in which moral sense has been explained<sup>3</sup> is by regarding it as a product of increasing intellectual ability, which itself can be accounted for by natural selection. But if morals are merely intellectual inferences, they must be derived logically from axiomatic truths or objective data; and in the realm of ethics there are no axiomatic truths, and objective data are irrelevant. So it is difficult to imagine how a moral awareness could arise intellectually.

One may conclude, then, that the attempt to explain the awareness of moral responsibility in evolutionary terms has not, so far, been successful. But even if the development of a moral sense were to be satisfactorily explained mechanistically, this still need not be a difficulty for Christian faith. For mechanism is merely an objective interpretation of God's creatorial activity.

### *Evolution and Vitalism*

In addition to human values, there are other biological facts which are not easily explained in terms of natural selection. The complex adaptive changes, that had to take place presumably concurrently, in order to convert a reptilian forelimb into a useful bird wing; the elaborate developments that must have taken place together in many different tissues before a vertebrate eye could function effectively; these, and other features of life, are repeatedly quoted as being beyond the power of natural selection to explain. Whether or not this is so is still an open question; but I must admit that I have a certain amount of sympathy with those writers who feel (and I think 'feel' is the right

<sup>1</sup> J. S. Huxley, *Evolution and Ethics*, 1947; C. H. Waddington, *Science and Ethics*, 1942.

<sup>2</sup> D. Lack, *op. cit.* p. 102.

<sup>3</sup> C. Darwin, *The Descent of Man*, 1871.

word here) that the odds against these developments are so large that a Darwinian explanation is beyond the limits of credibility.

In order to explain what they regard as otherwise inexplicable, some writers have postulated that living matter has within it some non-material 'force' or 'urge' which has directed evolution. Called *élan vital* by Bergson,<sup>1</sup> 'life force' by Bernard Shaw,<sup>2</sup> 'holistic urge' by Smuts,<sup>3</sup> and 'entelechy' by Hans Driesch,<sup>4</sup> it is always a factor invoked to fill a gap in mechanistic explanations. Thus vitalistic theories have been called in to account for what the physicist would call local decrease in entropy, what the psychologist might describe as an urge, or what the philosopher would designate values.

Such views have found little support from biologists. In fact, both scientists and philosophers have usually reacted against them, for very good reasons. The quasi-mystical force postulated is, by definition, incapable of detection by the empirical methods of science; and vitalism, if accepted, would therefore tend to stifle further scientific research into the gaps. So however much one may feel that current Darwinian explanations are deficient, that deficiency is not to be remedied by the addition of vitalism.

Vitalism is now, quite rightly, a lost cause; but it is a lost cause from which Christians ought to derive a lesson. For the arguments of the vitalists have often been exactly paralleled by the arguments of Christians, who have pointed to the gaps in mechanistic explanations as evidence of the 'hand of God'. The scientific investigator has, of course, just as good grounds for rejecting the postulate of divine activity, based upon this evidence, as he has for rejecting an *élan vital*, based upon the same evidence. And, furthermore, gaps have a habit of closing up.

Needless to say, although science, for methodological reasons, repudiates the filling of mechanistic gaps with vitalistic forces or theistic intervention, it is not in a position to deny that such influences are operative. If they are, the evidence for them will be outside science. It is difficult, however, to conceive what sort of evidence could be adduced in favour of vitalism, unless it be the evidence of the mystic; but this type of evidence is so personal and subjective that it carries little weight with others. The evidence for theism, on the other hand, is—at least, for the Christian—in the objective revelation of God in Christ.

<sup>1</sup> H. Bergson, *Evolution Créatrice*.

<sup>2</sup> G. B. Shaw, Prefaces to *Back to Methuselah* and other plays.

<sup>3</sup> J. C. Smuts, *Holism and Evolution*.

<sup>4</sup> H. Driesch, *The Science and Philosophy of Organism*.

*Evolution and Mysticism*

A few months ago there was published an English translation<sup>1</sup> of Pierre Teilhard de Chardin's book *Le Phénomène Humain*, which is an attempt to give a Christian interpretation of evolution. It is a fascinating book—but very difficult to read.

Père de Chardin emphasises in the preface that his book is to be read purely as a scientific treatise, and not as a philosophical or theological work. This, however, is impossible: whatever else the book is, it is certainly not a scientific work. His starting point is, not evolution as evidenced by the objective data of the scientist, but evolution as viewed through the rose-tinted spectacles of the scientific humanist. His view, in fact, has much in common with that of Sir Julian Huxley (who contributes an introduction to the English translation) and, at times, approaches even the optimistic philosophy, of the inevitability of progress, of Herbert Spencer. His method of interpretation is to start with what he calls 'the phenomenon of man', and to extrapolate both backwards and forwards in time. Thus, since man has both subjective experience (the 'within') and objective features (the 'without'), so the whole of evolution, cosmic and organic, leading up to man, is the manifestation of these two aspects of reality; and the whole universe, therefore, has a within and a without. Furthermore, just as the without has shown increasing complexity from simple inanimate structures to highly elaborate living organisms and communities, so too the within has undergone similar changes. This process of complexification, as he calls it, he envisages continuing in the future until, at a remote time, the Omega-point, it produces a final state of hyperpersonal unity, which he appears to identify with Deity.

de Chardin makes no attempt to justify this type of extrapolation, either by scientific reasoning or by reference to revelation. If his view of the universe is more than pure speculation—and one would expect the speculation of a world-renowned palaeontologist to be disciplined by experience—it is presumably grounded in mystical experience. It is surely significant that several comments and reviews of this work employ such words as 'vision' and 'visionary' in speaking of de Chardin's thought.

No doubt in keeping with this mystical disposition is his use of poetical language, in which much of this book is written. This style,

<sup>1</sup> Pierre Teilhard de Chardin, *The Phenomenon of Man* (Collins, 1959).

although pleasing to read, renders the book in places very difficult to understand. One sometimes cannot be sure whether passages are to be taken literally or figuratively, with the result that the details of his arguments are difficult to follow.

If, however, I have understood them aright, there are several criticisms which could be levelled against de Chardin's thesis. One could, for example, question the validity of the reasoning whereby he argues from increasing complexity of the without to increasing complexity of the within. Surely the within and the without constitute two different logical categories,<sup>1</sup> and variation in one does not necessarily imply corresponding variation in the other. One could also question whether the randomness of past evolution permits any sort of prediction about future evolution.<sup>2</sup> Furthermore, many Christians will think that his apparent identification of the final, hyperpersonal, state with God comes much too close to pantheism to be acceptable; and the conservative Christian will feel that his complete ignoring of sin (in its Godward, as distinct from its social, aspects) and his reliance upon human psychosocial evolution to produce his millennium ally his thought too firmly to an unscriptural humanism.

I hazard the guess, therefore, that de Chardin's thought will commend itself neither to the scientist who wishes to remain objective nor to the Christian: it may, however, have a strong emotional appeal to the scientific humanist.

#### *Evolution and Humanism*

Although humanists have frequently found support for their views in the theory of evolution, others have argued that the theory of natural selection completely undermines all humanistic philosophy.

If man has achieved his present condition by the operation of natural selection, it follows that his reasoning powers, like his anatomical and physiological characters, have been developed because they are of survival value, and not necessarily because they lead to true judgments. Human reasoning might, of course, be valid; but there is no guarantee that it is: for if some erroneous beliefs conferred greater likelihood of survival upon man, the reasoning that produced them would become established. If, then, human reason is untrustworthy, all the products

<sup>1</sup> D. M. MacKay, 'From Mechanism to Mind' (and discussion), *J. Trans. Vict. Inst.*, 85 (1953).

<sup>2</sup> Discussed more fully in G. E. Barnes, op. cit. *Faith and Thought*, 90, 3 (1958).

of human reason, including humanistic philosophies and, for that matter, the theory of evolution itself, are equally subject to doubt. Darwin<sup>1</sup> himself was aware of this problem.

The Christian, on the other hand, who accepts the theory of evolution, escapes this impasse; for he believes, on non-scientific grounds, that human reasoning, although possibly a consequence of natural selection, is also a God-given means of knowing the truth.

#### C. SOME CONSEQUENCES OF THE CONTROVERSY

Whenever Christians have accepted the challenge of the theory of evolution, they have been stimulated to think anew about some aspects of their faith; with the result that some traditional interpretations of the Bible have had to be discarded, some arguments of Natural Theology have had to be amended, and some Biblical teaching, long neglected, has been reinforced. The Bible itself has emerged unscathed from the conflict, while Christian thought has become clarified.

The following are some of the lessons which Christians have learned, or ought to learn, from the debates mentioned in this paper.

1. Between the times of Newton and Darwin, the universe was envisaged as working mechanistically according to natural laws, with creatorial interventions from time to time by God: the normal operation was amenable to scientific investigation, while the 'creative acts' would be recognised as scientifically-inexplicable discontinuities. The theory of evolution, however, postulates that new forms of animals and plants have come into existence by means other than discontinuities; that the laws that govern the regularities of the universe also govern the novelties. There are thus only two possible views of the control of the universe: either God is active all the time in everything, or else He is not active at all. The materialist adopts the latter view, but the Christian is bound to adopt the former. Thus the Christian has been forced back from the pre-Darwinian near-deism to a scriptural theism.

2. It was pointed out above that, in Darwin's time, the phrase 'after his kind' in Genesis i was interpreted in terms of the then-current scientific concept of the fixity of species; and that when Darwin attacked this concept Christians felt obliged to defend it, in order, as they thought, to defend the Bible. Their defence soon had to give way under increasing weight of scientific evidence to the contrary. Let us, from

<sup>1</sup> C. Darwin, *Autobiography* (1876), in *Life and Letters*, ed. F. Darwin (1887), vol. 1.

this conflict, learn the lesson that it is dangerous to ally contemporary science to Christian truth; the ally may prove a weak one, and Christians may find themselves trying to defend the indefensible.

The temptation is with us today. Attempts are now being made to interpret Genesis i in the light of the theory of evolution: the 'days' are said to represent certain geological epochs; the Hebrew categories of organisms are identified with certain groups of animals or plants; and Adam is the founder of a particular culture. It should be realised that a time may come when the present theory of evolution has to be replaced by something better. Should the Christian feel that he must construct a picture of the universe which unifies his science and revelation, let him hold it, therefore, very loosely.

3. The impossibility of reconciling the traditional interpretations of the creation narrative with the theory of evolution has caused theologians to reconsider their attitude to the first three chapters of Genesis; and it is now generally agreed that these chapters are, not a short textbook of geology and biology, but a source of spiritual knowledge. Although they describe historical events, they do it from a spiritual viewpoint. (In this respect they resemble other historical narratives in the Old Testament.) It is illogical, therefore, to attempt either to predict, or to verify, or to falsify, geological or biological assertions by argument from the creation narrative.

4. One important consequence of the evolution controversy is that we now have a better understanding of both the scope and limits of science. Before Darwin's time, it was believed by many Christians that certain events, such as the origin of life and species, were scientifically inexplicable, because the Bible depicted those events as God's handiwork. We have now learned that all phenomena are, in principle, capable of being investigated and explained by the scientific method. The field of scientific exploration is co-extensive with the universe. And yet, as the foregoing discussion has shown, a scientific description of an event does not compete with, or exclude, a Biblical description of the spiritual or moral aspects of that event. Science may survey a field co-extensive with the universe, but it does not dig beneath the surface into the dimension of spiritual truth.

5. There was a time when man could regard himself as an observer introduced into, but hardly part of, a universe which obeyed a few simple rules of Newtonian physics. Man understood all the rules, which took the form of mathematical equations. If then he believed in a Creator, that Being was considered to be an omnipotent, yet relatively

simple, Pure Mathematician. The theory of evolution has demonstrated that man is, not just an independent observer, but an integral part of that universe. The plan of creation is not just an engineer's drawing of a myriad revolving spheres; it is a work of art, a masterpiece of incredible complexity and beauty. The vast sweep of physics from the atom to the galaxy is a relatively insignificant detail; for the plan includes life; conscious life; communal life; life able to survey the universe and to investigate its own origin; life able to appreciate goodness, truth, and beauty; life able to love; and life capable of enjoying communion with its Creator. The plan has been working out over millions of years, and has involved a complex of changes of which the significance is beyond man's understanding. Whole continents have been changed; innumerable species have come and gone, in order that God's purposes in creation might be achieved.

Even Darwin could write, 'There is a grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved.'<sup>1</sup>

Thus the theory of evolution has taught the Christian that God's ways are as profound and inscrutable in creation as they are in redemption.

6. 'Canst thou by searching find out God?'<sup>2</sup> is an ancient question which the Biblical writers consistently answered in the negative. Paul, in particular, argues that 'the world by wisdom knew not God'.<sup>3</sup> And yet medieval christendom expended much thought in attempting to do what the Bible said was impossible. The result, Natural Theology, has influenced Christian thought ever since.

The theory of evolution by natural selection has, however, undermined what was probably the strongest argument of Natural Theology, the argument from design. This is a fact which many preachers seem to have overlooked, if one can judge from the use, made in the pulpit, of the witness of nature.

The Bible undoubtedly speaks of God's revelation in nature; but this revelation, like any revelation human or divine, can be accepted only by faith. In other words, one cannot argue convincingly from the state of nature to the existence of a Creator, but, if one believes that

<sup>1</sup> C. Darwin, *The Origin of Species*, closing words.

<sup>2</sup> Job xi. 7.

<sup>3</sup> I Cor. i. 21.

there is a Creator, one can learn something of His glory and wisdom from the world that He has made. This, I suggest, is the Biblical teaching; and, if the theory of evolution causes a return to a more Biblical use of the witness of nature, this will be another valuable consequence of that theory.

7. Lastly, the debates consequent upon the rise of evolutionary thought have demonstrated the inadequacy of two philosophical systems inimical to the Christian faith, viz., secular humanism, and evolutionary ethics.

#### D. THE CHRISTIAN'S ATTITUDE TO EVOLUTIONARY THEORIES

If the Christian believes that the Bible and the universe are two companion volumes by the same Author, he need not fear, but should rather welcome, all scientific investigation. Sooner or later it will lead to truth, which can never conflict with revelation, and which may even help him to a better understanding and interpretation of revelation. In its search for truth, science does often lead to error; but the error is eventually discovered by science itself, and is replaced by something nearer the truth. In this way science progresses.

For this reason, the Christian should welcome the theory of evolution, for it represents a stage in man's discovery of the truth concerning the origin of life and species. I imagine no scientist at the present time would claim that contemporary evolutionary theories are the whole truth and nothing but the truth, but we have good grounds for believing that they are nearer the full truth than were the theories they have replaced. If, then, difficulties for Christian faith arise in the advance of science, the Christian ought to accept them as a divine challenge to further investigation and thought, knowing that therein lies the way to truth.

Does this mean that he should have no reservations in following the progress of thought? As far as scientific thought is concerned, I suggest it does mean this; but with philosophical thought, no. For philosophy, unlike science, cannot be tested empirically against God's revelation in nature, so there is no guarantee that philosophy will ever lead to the truth. The Christian, then, must question every philosophical speculation, and test it against God's revelation in Scripture.

What limits then does Scripture impose upon evolutionary philosophy? Firstly, it teaches that there is a Creator, Who planned, initiated, and maintains, the whole universe. Secondly, it teaches that there

is in nature a spiritual and teleological order in addition to, and more important than, the causal order which science investigates. Thirdly, it emphasises that man is a spiritual being, as well as an animal; and therefore capable of knowing God, and of defying God, yet nevertheless responsible to God. Any philosophical speculation that denies these truths the Christian must reject.

But, as for science, what better attitude could the Christian adopt than that expressed in these words of Bishop Wilberforce, quoted by David Lack?<sup>1</sup> 'We have no sympathy with those who object to any facts or alleged facts in nature, or to any inference logically deduced from them, because they believe them to contradict what it appears to them is taught by Revelation. . . . To oppose facts in the natural world because they seem to oppose Revelation . . . is . . . but another form of the every-ready feeble-minded dishonesty of lying for God, and trying by fraud or falsehood to do the work of the God of truth. It is with another and a nobler spirit that the true believer walks amongst the works of nature. The words graven on the everlasting rocks are the words of God, and they are graven by His hand.' They cannot 'contradict His word written in His book. . . . There may be to man difficulty in reconciling all the utterances of the two voices. But what of that? He has learned already that here he knows only in part, and that the day of reconciling all apparent contradictions between what must agree is nigh at hand.'

<sup>1</sup> D. Lack, *op. cit.*

K. A. KITCHEN, B.A.

## Egypt and the Bible: Some Recent Advances

### *Introductory*

Ever since the dramatic resurrection of the long-derelict remains of the brilliant civilisations of Egypt and Mesopotamia in the nineteenth and twentieth centuries, there has been a steady flow of studies that have sought to exploit our increasing knowledge of Ancient Egypt in order the better to interpret and evaluate the Biblical references to Egypt and matters Egyptian.

Though interest in the general subject of Egypt and the Bible has never died, there has been no major work in this field since before the late war. Professional Egyptologists with plenty of other highly urgent tasks on their hands have largely been disinclined to involve themselves in the controversies with which Biblical studies abound and to spend time on a subject which could contribute but little to Egyptology itself.

However, a steady stream of papers on a wide variety of particular points has never failed,<sup>1</sup> and some Egyptologists are once more beginning to devote attention to this field.<sup>2</sup>

This paper offers a selection—emphatically and necessarily a very modest and uneven selection—of material bearing on Egypt and the Bible. Two classes of matter are here drawn upon. On the one hand,

<sup>1</sup> For bibliography of pre-war studies to 1941, see I. A. Pratt, *Ancient Egypt, A List of Sources in the New York Public Library* (New York, 1925), and Pratt, *Ancient Egypt: 1925-1941* (New York, 1942), under the sections 'Egypt and the Bible'. Articles of the years 1939-47 are in the eight lists by W. Federn in *Orientalia*, 17 (1948), 18 (1949) and 19 (1950). For nearly everything from 1947 onwards, consult J. M. A. Janssen (ed.), *Annual Egyptological Bibliography*, published in Leiden every year since then. Recent Egyptian works bearing on Old Testament studies have been usefully surveyed by Janssen in the symposium *L'Ancien Testament et l'Orient: Études présentées aux VIes Journées Bibliques de Louvain (11-13 septembre 1954)* (Louvain, 1957), pp. 29-63.

<sup>2</sup> Including Dr Janssen, cf. preceding note and on Joseph, below; P. Montet, *L'Égypte et la Bible* (Paris/Neuchâtel, 1959) (doubtless to appear in English through the S.C.M. Press); J. Vergote on Joseph, see Joseph-section below; É. Drioton on the date of the Exodus and the relationship between Proverbs and Amenemope (see sections on these below)—to name only four scholars out of several.

attention is drawn to some important recent studies devoted specifically to Egypt and the Bible.<sup>1</sup> On the other hand, a brief selection has been taken from the rich potential of useful background-material which is so largely locked away in the multitude of specialised Egyptological publications. This material itself falls under two heads. Some of it has already been brought into connection with Biblical studies by specialists,<sup>2</sup> whereas a few points from the rich potential available as 'raw material' are here presented in relation to Scripture for the first time.<sup>3</sup>

### Early References

Two small points in the 'Table of Nations', Genesis x, are worthy of brief notice.<sup>4</sup>

1. *Pûṭ*. It has been evident for some time that the *Pûṭ* of Genesis x. 6, Nahum iii. 9, Jeremiah xlvi. 9, Ezekiel xxx. 5, etc. is a term for Libyans, especially Libyan warriors. This identification rests on the equation of Old Persian *Putiya* and Babylonian *Putā* (= Hebrew *Pûṭ*) with Ta-Temehu (*Ti-Tmḥw*), a native Egyptian term for Libya(ns), offered by trilingual inscriptions of the Persian emperor Darius I (c. 522-486 B.C.)<sup>5</sup> set up in Egypt.<sup>6</sup> The term *pûṭ* may possibly be derived from the old Egyptian term *pedjty* (*pḏty*),<sup>7</sup> 'foreign bowman' with application to the Libyans *par excellence* who were noted archers.<sup>8</sup>

Now, the term and form *Pûṭ* for Libyans has turned up as a specific

<sup>1</sup> See below, Joseph-section, point 3; Moses/Exodus section, points 2, 3, 5, 6; Solomon/Egypt section, point 2.

<sup>2</sup> See below, Early References, point 1; Joseph-section, points 1 and 2; Moses/Exodus section, points 1 and 6; Solomon/Egypt section, point 1 (Siamun-relief); Later Contacts, points 1 (Karnak list), and 3 (So as vizier and not Re'e).

<sup>3</sup> See below, Early References, point 2; Joseph-section, point 4; Moses/Exodus section, points 4 and 7; Solomon/Egypt section, points 1 (Egyptian foreign policy, Dyn. 21 weakness); Later Contacts, points 2 and 3 (Egyptian foreign policy; So as Osorkon IV).

<sup>4</sup> On Table of Nations, see recently D. J. Wiseman, *Trans. J. Vict. Inst.*, 87 (1955), 14-24, 113-118.

<sup>5</sup> Date based on tables of R. A. Parker and W. H. Dubberstein, *Babylonian Chronology*, 626 B.C.-A.D. 75 (Providence, R.I., 1956).

<sup>6</sup> See G. Posener, *La Première Domination Perse en Égypte* (Cairo, 1936), pp. 186-187.

<sup>7</sup> By the fourteenth century B.C., as the Amarna Letters show, the *dj*-sound (*d*) had shifted to *d/t*, giving *pit/date* (and *pit/de*); cf. W. F. Albright, *Journal of Near Eastern Studies*, 5 (1946), 14, on entry no. 16.

<sup>8</sup> Cf. U. Hölscher, *Libyer und Ägypter*, = *München Ägyptologische Forschungen* No. 4 (Glückstadt, 1937), pp. 38-39 and references.

term in Egyptian itself, in a group of funerary documents in hieratic (cursive) script, dated to the late 21st Dynasty, c. 970 B.C. These fulminate against any magical threat from Egypt, Nubia, or Puda (*Pwidi*), i.e. Libya.<sup>1</sup> These new examples have in turn helped to bring to light another one, Puyad or Pid (*Pyd*), 'Libyans', in the reign of Osorkon II, c. 860 B.C.,<sup>2</sup> a contemporary of Omri and Ahab. Thus the history of this name can be sketched through the second and first millennia B.C. both in Egypt and in Western Asia.

2. *Naphtuhim*. Classed under Mizraim (Egypt) in Genesis x. 13 and I Chronicles i. 11, the term *Naphtuhim* has always been obscure and difficult to identify. Long ago, the pioneer Egyptologists Brugsch<sup>3</sup> and Erman<sup>4</sup> sought to interpret *Naphtuhim* as a Hebrew transcript of the Egyptian Pa-ta-mehu (*pt-t-mḥw*), a term for the Delta or Lower Egypt to balance the mention of Pathros, 'Upper Egypt'; but they could only obtain this equation by resort to the unsatisfactory expedient of drastic emendation of the Hebrew text. It is now possible to offer two almost equally good Egyptian originals for *Naphtuhim* without any recourse to emendation at all.

Firstly, *Naphtuhim* can stand for a Late-Egyptian \**na(yu)-/na(en)-pa-idhu* (*n(yw)-/n(n)-pt-idḥw*, the *d* becoming *t* as often in Egyptian, i.e. 'they of the (delta-)marshland', the people of the Lower Egyptian Delta that Brugsch and Erman had wished to identify here, but with a much closer equivalent than theirs. (Pa-) *Idhu*, 'the marshland', is a well-known Egyptian term for the Delta,<sup>5</sup> and the construction *nayu-*

<sup>1</sup> See I. E. S. Edwards, *Hieratic Papyri in the British Museum*, 4th series (1960), 2 vols. Reference in vol. I, *Text*, p. 10, note 23, on text 'L-1' (Papyrus Br. Mus. 10083), obverse, lines 26-27. Further occurrences and variant spellings are to be found in the parallel documents 'L-3', 'L-6', 'T-2', 'P-3', 'P-4'. As Egypt, Syria and Nubia are separately named in the texts, the comparison with *Put*, *Putā*, is immediate.

<sup>2</sup> Published, unrecognised, in *Recueil de Travaux . . .*, 18 (1896), 50, lines 16; pointed out by Edwards, loc. cit. New publication by H. K. Jacquet-Gordon, *Journal of Egyptian Archaeology*, 46 (1960), 12-23.

<sup>3</sup> H. Brugsch, *Hieroglyphisch-Demotisches Wörterbuch*, vol. 6 (Leipzig, 1881), p. 633 (p. 80 of vol.).

<sup>4</sup> A. Erman, *Zeitschrift für Alttestamentliche Wissenschaft*, 10 (1890), 118-119.

<sup>5</sup> Erman and Grapow, *Wörterbuch der Aegyptischen Sprache*, vol. i (Leipzig, 1926), p. 155, and references under nos. 5 to 8 in *Belegstellen*. The exact form *pa-idhu* occurs in a text of Rameses III's eleventh year, roughly 1180 B.C.; see Epigraphic Survey, *Medinet Habu*, vol. ii (Chicago, 1932), plate 82, line 30; translation, Edgerton and Wilson, *Historical Records of Rameses III* (Chicago, 1936), p. 80.

(sometimes *na(en)-*), 'they of . . .' was in current use with place-names from Rameses II's reign (thirteenth century B.C., age of Moses) and onwards.<sup>1</sup> Naphtuhim would then indeed be the Lower-Egyptian pendant to Upper-Egyptian Pathros in Genesis. x.

The second alternative is to take Naphtuhim as a transcript for a Late-Egyptian \**na(yu)-/na(en)- pa-ta-(we)ha(t)*, (*n(yw)-/m(n)- p(-t)- (w)h(-t)*), with elision of weak semi-consonants and customary loss of final feminine (*t*), 'they of the Oasis land'—i.e. as a term for the inhabitants of the line of oases in the desert to west of the Nile valley,<sup>2</sup> as a whole.<sup>3</sup> This would be a suitable location for Naphtuhim if Mizraim were held to include Lower Egypt without specific mention of the latter;<sup>4</sup> but perhaps the Delta-explanation is more satisfying, even if the Oasis-suggestion is more interesting!

### *The Age of Joseph*

New source-material and new studies have recently appeared that bear directly on this period. The new material of special interest is Papyrus Brooklyn 35.1446, splendidly published by W. C. Hayes of the Metropolitan Museum of Art, New York.<sup>5</sup> This papyrus sheet was originally a page in the Register of Current Criminals of the great prison at Thebes in Upper Egypt in the tenth to thirty-first years of the 12th-Dynasty pharaoh Amenemhat III, c. 1833-1812 B.C.,<sup>6</sup> in the

<sup>1</sup> For place-names constructed with *Nayu-*, etc. cf. Sir A. H. Gardiner, *Ancient Egyptian Onomastica*, vol. ii (Oxford, 1947), pp. 82\*-83\*, no. 377B, and pp. 146\*-149\*, no. 401, under *Rameses II* and III.

<sup>2</sup> For *ta-wehat*, 'Oasis-land', see Erman and Grapow, *Wörterbuch*, vol. i, p. 347, ref. 23. The form *pa-ta-(n)-wehat* actually occurs in the thirteenth century B.C. (Pap. Anastasi IV, 10: 9; 11: 4, 5, cf. R. A. Caminos, *Late-Egyptian Miscellanies* (Oxford, 1954), pp. 176-177), and again in the tenth century B.C. (Dakhleh stela of Sheshonq (I), cf. Gardiner, *Journal of Egyptian Archaeology*, 19 (1933), 22, 29, plate 5, 4th line).

<sup>3</sup> Yet a third perfectly good original for Naphtuhim, closely related to the second offered above, would be \**na(yu)-*, etc., *pa-ta-ih (n(yw)-*, etc., *p(-t)-(-ih)*, 'they of Ox-land', i.e. the inhabitants of the oasis of Farafra, but this would probably narrow down the scope of Naphtuhim too much. On early Egyptian references to, and relations with, the oases, c. 2600-1600 B.C., see H. G. Fischer, *Journal of Near Eastern Studies*, 16 (1957), 223-235.

<sup>4</sup> For Mizraim with the specific nuance of Lower Egypt alongside Pathros for Upper Egypt, cf. Isa. xi. 11 or Jer. xlv. 1, 15.

<sup>5</sup> W. C. Hayes, *A Papyrus of the Late Middle Kingdom in the Brooklyn Museum* (New York, 1955).

<sup>6</sup> Dates based on Parker, *The Calendars of Ancient Egypt* (Chicago, 1950), p. 69.

general period of the Hebrew patriarchs. Some sixty years later, in the 13th-Dynasty, *c.* 1750 B.C., the reverse of the sheet—now 'scrap paper'—was used by an official to draw up a list of slaves in his household to be bequeathed to his wife. Both sides of this document throw vivid light on conditions in Egypt within decades of Joseph's enslavement and promotion there, roughly 1700 B.C.

1. *Egyptian Prisons.* Papyrus Brooklyn sharpens our understanding of the Egyptian prison-system especially when studied in conjunction with previously-known data.<sup>1</sup> Egyptian prisons had three functions: that of a criminal lock-up; that of a place of detention for offenders remanded in custody (as was Joseph); and that of a labour-camp or reserve on which the Labour Bureau ('Office of Provider of People') could readily draw for essential *corvée*-work on the canals and drainage-dykes that were vital to Egypt's economic existence. Outside of Thebes, prisons were located in other main centres and large towns. One such was at Re-honé (modern Lahun, across the Nile, south-west of Cairo), attached to Ithet-Tawy,<sup>2</sup> the administrative capital of Egypt under the 12th and 13th Dynasties taken over by the Hyksos. Joseph's prison could have been this one or in this region unless, as has been recently suggested,<sup>3</sup> Joseph, the butler and the baker were actually under house-arrest. The Register shows that each offender was filed systematically under seven headings including name, sex, charge, whether remanded, completion of the case, etc.

2. *Semites in Egypt.* The slave-list on the reverse side of the papyrus directly illustrates the conditions under which Semites served in Egypt in the eighteenth century B.C. Of some seventy-nine servants in this list, not less than forty-five were 'Asiatics' who bear, for the most part, good West Semitic names of precisely the same linguistic stock as the early Hebrews, especially Jacob and his sons, of this same general period. So high a proportion of Semitic servants in an Upper Egyptian household far from Palestine in an age when the pharaohs were hardly in a position to campaign in Syria for slaves (most 13th-Dynasty kings were ephemeral), is remarkable. It is in the highest degree likely that many of these had been traded into Egypt as Joseph later was, but probably less dramatically. These often intelligent foreigners were

<sup>1</sup> For such a study, cf. Hayes, *Papyrus*, pp. 36-42. For a brief appreciation of this papyrus and reference to prisons, cf. K. A. Kitchen, *Tyndale House Bulletin*, 2 (1956/57), 1-2.

<sup>2</sup> Hayes, *op. cit.* p. 41, note 148 and references.

<sup>3</sup> By J. Vergote, *Joseph en Égypte* (Louvain, 1959), p. 40.

frequently given more congenial tasks than slower-witted Egyptian labourers; hence Joseph's advancement in Genesis xxxix rings true to life. Nor does Papyrus Brooklyn stand alone here; in an important review-article on Hayes's book, Posener has sifted and adduced further scattered evidence for Asiatics in Egypt at this general period.<sup>1</sup>

The Semitic personal names have been specially studied by Albright.<sup>2</sup> Sakar and Sakratu are linguistically one with Hebrew Issachar; there is an 'Asher, compare Hebrew Asher; 'Aqab and 'Aqabtu are from the same base as Jacob (*Ya'aqōb*). In parallel with later Hebrew names are a *Mnhm*, compare 'Menahem', and *Šmštu* a feminine form directly reminiscent of Hebrew Samson. For Shiprah, see *Moses and the Exodus Period*, point 1, below. The genuine antiquity of some patriarchal names is thus brightly illumined.

3. *Two Recent Studies* of Joseph's Egyptian background deserve special (if too brief) mention: a paper by J. M. A. Janssen of Leiden,<sup>3</sup> and a book by J. Vergote of Louvain.<sup>4</sup> Of particular interest in Dr Janssen's paper are his study of dream-interpretation or oneiromancy,<sup>5</sup> the place of Semites in Egypt,<sup>6</sup> and of famines.<sup>7</sup>

In his book, Professor Vergote has systematically commentated a long series of selected points in Genesis xxxvii, xxxix-1, in the light of present day Egyptological knowledge. Among many other useful things, Vergote gives a full, up-to-date statement of the evidence for the Egyptian origin of the Hebrew term for magicians, *ḥarṭummīm*; a most rewarding study of the post of 'butler' (or better, 'cupbearer' as he demonstrates); and an intriguing suggestion to replace the 'captain of the guard' (*sar-ṭebbāḥīm*) by the 'chief provisions officer'.<sup>8</sup> On the thorny problem of Joseph's own post as directly responsible to the pharaoh,

<sup>1</sup> G. Posener, *Syria*, 34 (1957), 145-163.

<sup>2</sup> W. F. Albright, *Journal of American Oriental Society*, 74 (1954), pp. 222-233.

<sup>3</sup> J. M. A. Janssen, *Jaarbericht Ex Oriente Lux*, 14 (1955/56), 63-72.

<sup>4</sup> J. Vergote, *Joseph en Égypte* (Louvain, 1959), = *Orientalia et Biblica Lovaniensia*, vol. iii.

<sup>5</sup> An excellent treatment of this topic, of rather wider scope, is A. L. Oppenheim, *The Interpretation of Dreams in the Ancient Near East, with translation of an Assyrian Dreambook* (Philadelphia, 1956), being *Transactions of American Philosophical Society*, new series, 46, part 3, as a monograph.

<sup>6</sup> An earlier study of Janssen's on this is in *Chronique d'Égypte*, 26/No. 51 (1951), 50-62.

<sup>7</sup> A useful monograph on this is J. Vandier, *La Famine dans l'Égypte Ancienne* (Cairo, 1936).

<sup>8</sup> In Vergote's original French (following Montet), 'l'officier de bouche', *Joseph en Égypte*, p. 33.

Vergote cautiously retains the view that the Hebrew text substantially represents Joseph as a vizier<sup>1</sup> but in 19th-Dynasty (thirteenth century B.C.) terms of usage, i.e. the period of Moses. Janssen<sup>2</sup> preferred to consider Joseph as a *ra-hery*, literally 'Chief Mouth', an official who could be responsible directly to the king for a specifically commissioned task. Still more recently, Ward has insisted that Joseph was simply minister for agriculture and the crown estates but directly responsible to the king.<sup>3</sup> In point of fact, all these explanations are feasible and each has its own drawbacks. The truth is that our understanding of the real functions behind the ornate titulary of the elaborate Egyptian bureaucracy is still very far from adequate.<sup>4</sup>

The full tale of useful documentation collected by Janssen and Vergote must be passed over here, but one other point in Vergote's work demands mention. At first, Vergote had conducted his study of the Joseph-narrative and the Egyptian data without reference to the literary-critical, documentary theories of Old Testament studies. Then, at an advanced stage, his Old Testament colleague Professor Coppens suggested that Vergote should take this branch of study into account. But when he came to apply the documentary theory in conjunction with certain dating-elements derivable from the Egyptian material, Vergote concluded that the basic Joseph-story was a product specifically of the 19th-Dynasty period, the thirteenth century B.C., and that the best explanation of these facts was that Moses was the author of that first narrative—a truly remarkable result!<sup>5</sup> However, the documentary hypothesis is in fact not really relevant to this dating at all,<sup>6</sup> and Vergote admitted<sup>7</sup> that the J/E analysis actually complicated the problems attending on the position of the keeper of the prison. Full-scale study of Egyptian and Western Asiatic literature and Old Testament literature

<sup>1</sup> Vergote, *op. cit.* pp. 102 ff., esp. pp. 107, 121, 133-135.

<sup>2</sup> Janssen, *Jaarbericht*, pp. 66-67.

<sup>3</sup> W. A. Ward, *Journal of Semitic Studies*, 5 (1960), 144-150, following on his earlier study in *Bibliotheca Sacra*, 114/No. 453 (1953), pp. 55 (no. 13), 59.

<sup>4</sup> As is evident from the limited results attained even in extensive studies of Egyptian officialdom, like those of H. W. Helck, *Untersuchungen zu den Beamtentiteln des Ägyptischen Alten Reiches* (Glückstadt, 1954) (*München Äg. Forsch.*, 18) and *Zur Verwaltung des Mittleren und Neuen Reichs* (Leiden, 1958).

<sup>5</sup> Vergote, *op. cit.* pp. vi, 205-210, following on his detailed main text. The present writer would heartily agree with a Ramesside/Mosaic date for the Joseph-narrative.

<sup>6</sup> See the writer's forthcoming review of Vergote's book in *J. of Egypt. Archaeol.*, 47 (1961).

<sup>7</sup> On his pp. v-vi.

against each other within their common background will in due time demonstrate the superficiality and unreality of the documentary type of analysis of ancient writings.<sup>1</sup>

4. *Early Evidence for the Horse in the Nile Valley.* In Joseph's day (c. 1700 B.C.) the horse was already known to the Egyptians according to Genesis xlvii. 17; as a rare and valuable, still rather 'new' animal then, it is there named before the more usual flocks and herds and ubiquitous asses. Although the horse is known to have been used in Asia Minor from the nineteenth century B.C.,<sup>2</sup> and with chariots in Syro-Mesopotamia in the eighteenth century B.C.,<sup>3</sup> no trace of the horse had turned up in the Nile valley before the eve of the New Kingdom, c. 1600 B.C., until very recently. But in 1958-59, while excavating the ancient Egyptian fortress at Buhen (Wady Halfa) for the Egypt Exploration Society, Professor Emery found 'the skeleton of a horse lying on the pavement of the Middle Kingdom rampart in circumstances which indicate that it is a good deal older than the burning of the fortress in the seventeenth century B.C., and thus antedates considerably the supposed introduction of the horse into the Nile valley by the Hyksos'.<sup>4</sup> This is clear evidence for knowledge and use of the horse in the Nile valley long before Joseph entered Egypt and so agrees perfectly with Genesis xlvii. 17.

### *Moses and the Exodus Period*

Here also, only a handful of recent points can be touched on.

1. *Names of the Midwives, Exodus i. 15.* The names of these two, Shiprah and Puah, are now known definitely to be authentic and early West Semitic personal names, in contrast to the naïvely negative attitude of certain Old Testament scholars.<sup>5</sup> 'Shiprah' first occurs as a woman's name in the Asiatic slave-list of Papyrus Brooklyn, c. 1750

<sup>1</sup> Provisionally see briefly below (Moses/Exodus section, 7). The full weight of evidence is reserved for later and properly detailed treatment.

<sup>2</sup> A. Goetze, *Kleinasien* (1957 edn.), p. 77 with notes 6 and 7 and Tafel 7, Abb. 13.

<sup>3</sup> In the Mari archives. Cf. G. Dossin, *Archives Royales de Mari*, vol. i (1950), letter 50, lines 11-14; C. F. Jean, *ibid.* vol. ii (1950), letter 123, lines 10 and 22; Dossin, *ibid.* vol. iv, 1951, letter 38, line 11; Dossin, *ibid.* vol. v (1952), letter 20, lines 7-9, 18-20.

<sup>4</sup> R. O. Faulkner, Editorial Foreword, *J. Egypt. Archaeol.*, 45 (1959), 1-2.

<sup>5</sup> For example, M. Noth, *Die Israelitische Personennamen*, 1928, p. 10, whose dismissal of these names as 'purely artificial' was thus quite unjustifiable.

B.C., already commented on above,<sup>1</sup> some four centuries before Moses. Pu'ah (*Pḡt*) is equally well attested, this time in the N. Canaanite texts from Ugarit in Phoenicia of the fourteenth to thirteenth centuries B.C.<sup>2</sup>

2. *Enchanted Serpents*. When in Exodus vii. 8-13, Aaron at Moses' command cast down his rod to become a serpent before Pharaoh, the Egyptian magicians 'did in like manner with their enchantments' (verse 11). While Aaron and Moses' feat remains in the realm of miracle (Exodus iv. 2-5), it is perhaps possible to offer some explanation of the magicians' 'enchantments'. If first snake-charmed, the Egyptian cobra (Arabic *naja haje*) can actually be rendered immobile (catalepsy) if pressure be deftly applied to the muscles at the nape of its neck.<sup>3</sup> This act of grasping a serpent by its neck appears to be shown on some Egyptian scarab-amulets,<sup>4</sup> and was performed (and photographed) in Egypt as recently as 1954.<sup>5</sup>

3. *The Plagues*. The tenth plague (death of the first-born) belongs in the realm of miracle, but the preceding nine demonstrated God's use of the created order to achieve certain ends, and recent investigation tends to confirm both the reality of their occurrence and the powers of accurate observation of the narrator of Exodus vii. 14-x. 29. G. Hort has pointed out<sup>6</sup> that the first nine plagues form a connected sequence, triggered-off by an abnormally *high* Nile-flood in July/August. In Egypt, too high an inundation was just as disastrous as a too low one. Such an excess flood could bring with it microcosms known as *flagellates*, that would heighten the colour of the river and produce conditions unfavourable for the fish so that they died wholesale as recorded (first plague). Decomposing fish in their backwaters drove the frogs ashore in hordes (second plague), having also infected them fatally with *bacillus anthracis*. The third plague (Exodus viii. 16-19) represents an abnormal multitude of mosquitoes, result of the favourable breeding-conditions offered by a high inundation. The 'murrain' (fifth plague) on

<sup>1</sup> Cf. Albright, *Journal Amer. Oriental Society.*, 74 (1954), 229, 233.

<sup>2</sup> Albright, op. cit. p. 229, note 50; C. H. Gordon, *Ugaritic Manual*, vol. iii, (Rome, 1955), Glossary, p. 313, No. 1566, *pḡt*, 'girl' and as personal name.

<sup>3</sup> L. Keimer, *Histoires de Serpents dans l'Égypte Ancienne et Moderne* (Cairo, 1947), pp. 16-17.

<sup>4</sup> Scarabs in Keimer, op. cit. figs. 14-21.

<sup>5</sup> According to H. S. Noerdlinger, *Moses and Egypt* (Univ. S. California Press, 1956), p. 26. Despite this book's exotic origin as the background to a film (*Ten Commandments*) by a non-Egyptologist, this work is quite well documented.

<sup>6</sup> In two articles: *Zeitschr. f. Alttest. Wiss.*, 69 (1957), 84-103, and *ibid.* 70 (1958), 48-59.

the cattle in the fields (not in the byres or stalls) would be anthrax, contracted in the river-meadows where the frogs had died of this class of *bacillus*. The 'blains' (sixth plague) on man and beast, especially legs and feet, would be a skin-anthrax, contracted from a principal carrier, the fly *stomoxys calcitrans*, encouraged in its breeding (like the mosquitoes) by conditions following on a high Nile; these would also be the 'flies' of the fourth plague.

As it affected flax and barley but not yet wheat and spelt, the hail and thunderstorm of the seventh plague would fall about early February. Heavy rainfall earlier on in North Abyssinia and environs would not only cause the extra-high Nile in the first place but favour also the onset of the unusually severe swarms of locusts (eighth plague) that ate up whatever had survived the hail. Finally, a strong *Khamsin* wind (early March, ninth plague) arose, made dark not only by ordinary dust or sand but also with masses of fine particles of *Roterde* ('red earth') deposited by the high Nile previously and since dried to a fine dust.

The whole account as it stands is clear, accurate and consistent; any attempt to split it into 'sources', 'documents', or 'hands' (J, E, etc.) automatically makes nonsense of the phenomena recorded in the narrative—and on this ground alone stands methodologically self-condemned.

4. *Organisation of Labour*. Often enough the plight of the Israelites in having to find their own straw and yet maintain their full production ('tale') of bricks (Exodus v. 6-19) has been aptly compared with the passages in the almost contemporary Anastasi papyri in the British Museum, in which one official smugly records that his brickmakers are duly producing their daily stint, while another complains that he has neither straw nor men to make bricks.<sup>1</sup> The effect of putting straw or chaff into mud bricks is now understood,<sup>2</sup> and Egyptian bricks often show traces of former straw-stalks in them.<sup>3</sup>

In modern Egyptology, a neglected class of antiquity has been accorded increasing attention: the hieratic ostrakon (plural, ostraca). These are simply potsherds or limestone flakes that bear in cursive script (hieratic) the random business and other workaday jottings of

<sup>1</sup> Most recent translation in Caminos, *Late-Egyptian Miscellanies*, pp. 106, 188.

<sup>2</sup> References in A. A. McRae in symposium *Modern Science and Christian Faith* (Wheaton, Illinois, 1948), pp. 215-219; cf. also A. E. Lucas, *Ancient Egyptian Materials and Industries* (1948 edn.), p. 44.

<sup>3</sup> See C. F. Nims, *Biblical Archaeologist* 13 (1950), 21-28.

the ancient Egyptians—in short, their equivalent of scrap paper and memo.-pads! In these ancient memoranda, snatches and quotations from Egyptian classical literature, or hymns and prayers, or magical spells rub shoulders with mundane accounts for bricks or donkey-loads of straw, reminiscent of Exodus v; there are lists of victuals and fire-wood, notes of work done, marriage-contracts, notes of legal proceedings, consultation of oracles—a living picture of the workaday Rameside Egypt in which the Hebrews laboured until their Exodus.

The pharaoh's charge against Moses and Aaron in Exodus v. 3-8 (i.e. of inducing idleness among the Hebrews under cover of celebrating a religious festival) gains colour when, among the ostraca, one sees in the day-to-day 'journals of work' the detailed records kept of days actually worked and of absences of workmen, often with the reasons added. One superb such ostrakon of Rameses II's fortieth year (about 1260 or 1250 B.C.) accounts for 50 workmen in this way:<sup>1</sup> absent through illness (once, 'bitten by a scorpion'), or on other jobs or family matters, or for religious festivals (as Exodus v. 8), or labelled simply *wsf*. 'idle'! Another ostrakon<sup>2</sup> mentions 'a day of idleness spent by the foreman Khons'. When such close account was kept of ordinary Egyptian workmen, the captive Hebrews could hardly escape equally close oversight.

5. *Date and Route of the Exodus* cannot be tackled here. But attention ought to be drawn to a very useful survey of solutions proposed, recent studies, and the present state of these questions that has been published by Dr C. de Wit of Brussels,<sup>3</sup> who favours a date like that proposed by É. Drioton.<sup>4</sup> Further studies on this perennial topic will doubtless continue to appear.<sup>5</sup>

6. *The Tabernacle*. The Tabernacle reputed to have been constructed during Israel's journeyings was in essence 'a portable temple',<sup>6</sup> and was

<sup>1</sup> J. Černý and Sir A. H. Gardiner, *Hieratic Ostraca I* (Oxford, 1957), plates 83-84. This sumptuous folio volume is but one of many specialist publications devoted to ostraca, too numerous to list here.

<sup>2</sup> Černý and Gardiner, *op. cit.* plate 65: 1.

<sup>3</sup> C. de Wit, *The Date and Route of the Exodus* (Tyndale Press, 1960).

<sup>4</sup> É. Drioton, 'La date de l'Exode', in symposium *La Bible et l'Orient* (1955), pp. 36-49, = (Cahier) No. 1 of the *Revue d'Histoire et de Philosophie Religieuses*.

<sup>5</sup> For a further compact and comprehensive treatment of the date of the Exodus, see Kitchen and Mitchell, 'Chronology of the Old Testament', in Bruce, Packer, Tasker, Wiseman (eds.), *Tyndale Bible Dictionary*, 1961 (forthcoming).

<sup>6</sup> To quote F. M. Cross, *Biblical Archaeologist*, 10 (1947), 61.

in fact a prefabricated structure for religious use, to employ modern terms. Its construction of vertical boards, frames, tenons, sockets and bars, gold-overlaid, with curtains and coverings, was designed for ready erection and dismantling. Too often in the past, this structure has been dismissed as 'quite unrealistic', or, 'its very possibility is doubtful', by some Old Testament scholars.<sup>1</sup> In actual point of fact, there is ample Egyptian evidence for long and regular use there of prefabricated structures, especially for religious purposes, to refute easily the misplaced charge of late fantasy emitted by such scholars. The very constructional techniques listed above are well exemplified in the great bedroom-canopy of Queen Hetepheres I (4th Dynasty, c. 2650 B.C.), to mention only one of several early examples. The religious use of such structures is illustrated by the 'Tent of Purification' (associated with the rites of embalming). Representations of these<sup>2</sup> show a portable structure with hangings or curtains of cloth upon a framework of vertical poles linked by horizontal bars and beams: structurally and functionally directly reminiscent of the Hebrew tabernacle. The long chain of evidence comes right down to the fourteenth and thirteenth centuries B.C. and beyond, from a variety of sources and all in religious contexts. Hence, the pattern shown to Moses on the mount would enable him and Bezalel to exploit fully the best-trying and most appropriate constructional techniques of the day, essentially practical and straightforward, not fanciful, and providentially familiar to them from long residence in Egypt.<sup>3</sup>

7. *Ancient Literature and Documentary Criticism.* The still-customary<sup>4</sup> documentary hypothesis of the formation of the Pentateuch is based on a series of formal 'criteria':<sup>5</sup> double names of deity (e.g. YHWH/Elohim), of individuals (e.g., Israel/Jacob, or Reuel/Jethro), of groups (e.g., Ishmaelites/Midianites, or Canaanites/Amorites), of places

<sup>1</sup> Quoting Bentzen, *Introduction to Old Testament*, vol. ii, p. 34; Wellhausen, *Prolegomena to History of Israel* (Meridian edn., 1957), p. 39.

<sup>2</sup> Blackman, *Rock Tombs of Meir*, vol. v (1952), plates 42, 43.

<sup>3</sup> Compact treatment of this topic with fuller references, Kitchen, *Tyndale House Bulletin*, Nos. 5/6 (1960), pp. 7-11 with 12-13.

<sup>4</sup> 'The documentary hypothesis still commands general acceptance' so J. Bright, *A History of Israel* (English edn., 1960), p. 62.

<sup>5</sup> One of the most systematic treatments of these is still probably S. R. Driver, *Introduction to Literature of the Old Testament* (9th edn., 1913). A more recent work of the same type is O. Eissfeldt, *Einleitung in das Alte Testament* (3rd edn., 1956).

(e.g., Sinai/Horeb), or use of (para-) synonyms (e.g., 'amāh/shipḥāh, 'handmaid'/'bondmaid'); major changes of style; superficial repetitions ('he said . . . so said he'); and several others. However, the whole apparatus of such 'criteria' is in fact arbitrary and meaningless when placed against the relevant background of strictly contemporary ancient Egyptian and West Asiatic literatures. If such 'criteria' are applied to *precisely similar* 'phenomena' as they appear in texts from these various literatures, often so similar to the Hebrew writings in the external forms of expression, they produce nothing but manifest absurdities. The plain fact is that such 'phenomena' in Old Testament and Ancient Orient alike have quite other *raison d'être* than that of marking imaginary 'hands' or 'documents'.

A few examples may make this clear. For double names of deity: the official Ikhnofret (c. 1850 B.C.) on his stela from Abydos now in Berlin uses *four* different names and fixed epithets for the god Osiris as well as several combinations of these (cf. YHWH-Elohim), all in one modest inscription.<sup>1</sup> Four double personal names: one need only recall the scores of Egyptians who bore two (or more) names;<sup>2</sup> two must suffice here—'Sebekkhu whose good name is Djaa' (c. 1850 B.C.), known from two Abydos stelae, one each in the Manchester and British Museums;<sup>3</sup> and a scoundrel Mersakhme also called Peroy,<sup>4</sup> c. 1180 B.C.<sup>5</sup> For multiple group names: compare the brief record of Sesostri III's Palestinian campaign on Sebekkhu's Manchester Stela, where the one general Palestinian foe is referred to by *three* distinct terms: *Mntyw-Sit*, 'bedouin of Asia'; *Rtnw*, 'Syria(ns)'; *Amw*, 'Asiatics'. As for place-names, one need only cite Merenptah's famous 'Israel Stela' (c. 1230 or 1220 B.C.) in which Memphis is called by three names, one an abbreviation of one of the others (*Mn-nfr*; 'Inb-ḥd'; 'Inb),

<sup>1</sup> Namely Osiris (*Wsir*), Wennofre, Khenty-Amentyu, Lord of Abydos (Neb-Abdju). Hieroglyphic text in K. Sethe, *Aegyptische Lesestücke* (1928), pp. 70-71. These phenomena can only be properly studied in the original language, as English translations do not always reflect them.

<sup>2</sup> On the various names of the Egyptians, see vol. ii of Ranke's *Aegyptische Personennamen* (Glückstadt), 1952.

<sup>3</sup> British Museum stela No. 249 (1213), Budge and Hall, *Hieroglyphic Texts from Egyptian Stelae, etc.*, in *Br. Mus.*, vol. iii (1912), plate 12; Newberry, *Journal Egypt Archaeol*, 18 (1932), p. 141. Manchester stela, in Sethe, *Aeg. Lesestücke*, pp. 82-83.

<sup>4</sup> References in Černý, *J. Near E. Stud.*, 14 (1955), pp. 162-163.

<sup>5</sup> For similar Hittite and Hurrian evidence on double names, see Kitchen, *Hittite Hieroglyphs, Arameans and Hebrew Traditions* (1962) (forthcoming).

and Egypt by two names (*Kmyt* and *Ti-mri*).<sup>1</sup> For common nouns, compare the *five* different terms for boats and ships, some common and some special, used in the recently discovered historical inscription of king Kamose which describes part of his war against the Hyksos.<sup>2</sup> These examples (plus others for further 'criteria' for which space forbids treatment here) could be multiplied a hundredfold, and not from Egyptian only.<sup>3</sup> No Egyptologist (or other Orientalist in parallel disciplines) is such a fool as to see 'sources' behind such texts and inscriptions, or to scissor up either these stone stelae or the hieratic papyrus draft behind each, where the very possibility of any long or involved literary conflation or prehistory is wholly excluded by the very nature and circumstances of the texts themselves, often composed and engraved within months, weeks or even sometimes days of the events commemorated. The history of texts, literary and otherwise, must be determined by objective and wholly different methods.

### *Solomon and Egypt*

Only two points can be dealt with quickly here.

1. *Solomon's Alliance with Egypt.* During the general period c. 1085-945 B.C., contemporary with the later judges, Saul, David and Solomon in Israel, Egypt after the death of her last nominal 'emperor' (Rameses XI) was ruled by the pharaohs of the 21st Dynasty from the great North-east Delta seaport of Tanis, the Hebrew Zoan. These kings bore direct rule over Lower Egypt only—they ruled Upper Egypt indirectly, through the persons (and by permission) of the almost independent military dynasty of High Priests of Amun at Thebes, an arrangement

<sup>1</sup> W. M. F. Petrie and W. Spiegelberg, *Six Temples at Thebes*: 1896 (1897), pp. 26-28 and plates 13-14.

<sup>2</sup> Published by L. Habachi, *Annales du Service des Antiquités de l'Égypte*, 53 (1955), 195-202, and M. Hammad, *Chronique d'Égypte*, 30/No. 60 (1955), 198-208. The words are: 'ahá'u, imu, ba'u, mek, and djá't, in lines 5, 6, 13 and 7 respectively.

<sup>3</sup> The present writer has examples collected from Babylonian and Assyrian, Ugaritic (N. Canaanite) and Phoenician, Hittite and even Old South Arabian texts as well as more Egyptian and Coptic examples. This mass of material must await a full and detailed future treatment. Provisionally cf. also Kitchen, 'Egypt: Literature', in *Tyndale Bible Dictionary* (1961) (forthcoming). Nor is this writer alone in his scepticism. Note a parallel brief study by the well-known Jewish orientalist C. H. Gordon, in *Christianity Today*, 4, (1959), 131-134.

probably reached by a mutual bargain and agreement.<sup>1</sup> This peculiar situation helps to explain why these pharaohs did not pursue an aggressive foreign policy in Syria-Palestine, but rather sought security on their Asiatic frontier by limited 'police-action' in the adjacent 'Gaza strip' and Philistia, and by alliance with the principal Palestinian states including Israel.

This policy is clearly exemplified by the pharaoh who smote Gezer and gave it as dowry with his daughter's hand in marriage-alliance,<sup>2</sup> to Solomon (I Kings iii. 1; ix. 16). This alliance guaranteed the mutual security of both states on their common frontier and probably reciprocally benefited both commercially also (cf. I Kings x. 28-29). From Egypt at this period comes one scrap of evidence that may perhaps identify the pharaoh in question. At Tanis itself (modern San el-Hagar), Montet discovered a badly damaged triumphal relief-scene of king Siamun. This depicts the king in the conventional attitude of smiting an Asiatic foe; but the impotent alien on this block clutches an axe of Aegean type—perhaps Philistine.<sup>3</sup> This would agree quite well with a 'police-action' of Siamun in Philistia, culminating in the capture of Gezer and an alliance with Solomon.

2. *Egyptian Wisdom and Proverbs*. Besides the general heading of Proverbs i. 1, chapters x to xxiv are directly, and xxv to xxix via Hezekiah's copyists, ascribed to Solomon. In xxii. 17-xxiv. 22, Solomon explicitly quotes what he calls 'the Words of the Wise'.<sup>4</sup> The authorship of chapters i to ix is not explicitly stated. Old Testament scholars often consider it to be the latest part of the whole book, but this judgment is based mainly on its supposedly 'advanced' (and so 'late') theological

<sup>1</sup> On the origins and rise of the general Herihor and his high-priestly dynasty see Drioton and Vandier, *L'Égypte* (1952), pp. 362-366, 381, 511-512, 556 ff., for history and references, and especially Kees, *Herihor und die Aufrichtung des Thebanischen Gottesstaates* (1936), in *Nachrichten d. Gesellschaft d. Wissensch., Göttingen*, Phil.-Hist. Kl., Fachgruppe I (Altertumswiss.), Neue Folge, vol. ii, No. 1.

<sup>2</sup> That a pharaoh should marry off *his* daughter to a foreign potentate (instead of vice-versa) was a signal honour; cf. A. Malamat, *Biblical Archaeologist*, 21 (1958), 97-99, plus *ibid.* 22 (1959), 51.

<sup>3</sup> Often illustrated in Montet's Tanis publications. Most recently in his *L'Égypte et la Bible* (1959), p. 40, fig. 5.

<sup>4</sup> Note the wording of xxii. 17—'hear the words of the wise', in parallel with 'apply thine heart to my knowledge': i.e. Solomon (x. 1) has utilised profitably the words of the wise in the wisdom that he now passes on.

concepts, especially the personification of Wisdom. This judgment is in fact quite unjustified because its grounds are erroneous: so far from being 'late', personification was a concept widely and frequently used and understood throughout the ancient Biblical East from the third millennium B.C. downwards, for centuries before Solomon was even born. He could therefore have readily used personification and have himself prefaced our chapters x to xxiv with the long introductory exhortation of i to ix by way of prologue, rather as did Ptahhotep and Amenemope in Egypt.<sup>1</sup>

In Ancient Egypt, written treatises of proverbial wisdom have a very long history, beginning with the sage Imhotep (c. 2700 B.C.) and continuing down to the Christian era, very nearly.<sup>2</sup> Among these, when published in 1923,<sup>3</sup> the Teaching of Amenemope was quickly seen to contain various proverbs directly related to those in Solomon's 'Words of the Wise'. Ever since Erman's famous first study of Amenemope and Proverbs in 1924,<sup>4</sup> it has rather become a shibboleth among Old Testament scholars<sup>5</sup> that Proverbs must have borrowed from Amenemope, not vice-versa.<sup>6</sup> However, the French Egyptologist Dr É. Drioton has now produced weighty reasons for suggesting that the Egyptian Amenemope is actually an indifferent Egyptian translation from a Semitic—Hebrew—original, itself composed by Jews in

<sup>1</sup> References for, and compact treatment of, early use of personification in Kitchen, *Tyndale House Bulletin*, Nos. 5/6 (1960), 4-6 (other Egyptian matters are covered in this paper, not repeated here). The other reason usually offered for a late date of Prov. i-ix is that of language. But this reason is no sounder than the theological one, as will be shown on another occasion.

<sup>2</sup> For Egyptian wisdom and other literature, see the inventory and studies by Posener, *Revue d'Égyptologie*, 6 (1949), 27-48; *ibid.* 7 (1950), 71-84; *ibid.* 8 (1951), 171-189; *ibid.* 9 (1952), 109-120; *ibid.* 10 (1955), 61-72; *ibid.* 11 (1957), 119-137. Some translations in Pritchard, *Ancient Near Eastern Texts* (1950/55) pp. 412-425. Note also the ode to writing and sages, *ibid.* pp. 431-2.

<sup>3</sup> Budge, *Hieratic Papyri in the British Museum*, 2nd series (1923). See also F. Ll. Griffith, *Journal Egypt. Archaeol.*, 12 (1926), 191-231, and H. O. Lange, *Das Weisheitsbuch des Amenemope* (1925).

<sup>4</sup> Erman in *Sitzungsberichte d. Preussischen Akad. d. Wiss.*, Phil. Hist. Kl., XV (Berlin, 1924), pp. 86-93).

<sup>5</sup> Almost none of whom can read Late (or other) Egyptian.

<sup>6</sup> Representative survey by W. Baumgartner in H. H. Rowley (ed.), *The Old Testament and Modern Study* (Oxford, 1951), pp. 210-216, esp. pp. 210, 212. Oesterley, *The Wisdom of Egypt and the Old Testament* (1927), suggested that Proverbs and Amenemope both drew on a common source, but this found little favour. Kevin's attempt to show that Amenemope had borrowed from Proverbs was largely rejected.

Egypt.<sup>1</sup> This would be the 'Words of the Wise' on which Proverbs also subsequently drew. Drioton points out a series of un-Egyptian usages in grammar, syntax and vocabulary—usages that become entirely natural when translated back into Hebrew. Drioton's thesis will be difficult to controvert, and if it wins acceptance will be of the greatest importance for Old Testament studies.

### *Later Egypto-Hebrew Contacts*

Much could be said also of the period after Solomon, but again space and time permit only a glimpse of the possibilities.

1. *Shishak*. In 945 B.C., a new, Libyan, prince ascended the Egyptian throne: Sheshonq I, founder of the 22nd Dynasty. He speedily brought all Egypt under his control, Upper as well as Lower, securing Thebes by appointing his own son Iuput as non-hereditary High Priest of Amun. After some years of quiet administration that doubtless benefited Egypt internally, Sheshonq sought to adopt a more aggressive foreign policy than his predecessors: to gain security and commercial advantage by subduing any possible Palestinian rivals, and regain Egypt's old trade-relations in Phoenician Byblos.<sup>2</sup> In Palestine, Sheshonq bided his time while Solomon yet lived, harbouring useful political pawns like Jeroboam son of Nebat (1 Kings xi. 29-40). This prudence paid dividends when at Solomon's death he allowed Jeroboam to return to Israel and precipitate the break-up of that kingdom. Subsequently Sheshonq—Shishak—invaded and subdued not only Judah (1 Kings xiv. 25; 2 Chron. xii. 2-12), but Israel as well (stela at Megiddo;<sup>3</sup> the Karnak relief). The great triumphal relief and topographical list of Palestinian place-names sculptured on the wall of the temple of Amun at Karnak in Thebes to commemorate his victory<sup>4</sup> has long been known, but its value not fully appreciated until more recently. Fresh study has shown

<sup>1</sup> In two articles: *Mélanges Bibliques André Robert* (1957), pp. 254-280, and *Sacra Pagina*, vol. i (1959), pp. 229-241; more is to follow. On date of Amemope and therefore of the Words of the Wise, see also provisionally Kitchen, 'Egypt: Literature', in *Tyndale Bible Dictionary* (1961) (forthcoming).

<sup>2</sup> Survey of Egyptian relations with Byblos (documented) in Montet, *Byblos et l'Égypte* (1928). Sheshonq I dedicated a statue in the temple of Baalath, goddess of Byblos, cf. Dussaud, *Syria*, 5 (1924), 145-147, plate 42.

<sup>3</sup> See Lamon and Shipton, *Megiddo I* (1939), p. 61 and fig. 70; or Fisher, *The Excavation of Armageddon* (1929) p. 16, figs. 7-9.

<sup>4</sup> Beautifully facsimiled in Epigraphic Survey, *Reliefs and Inscriptions at Karnak* (1954). Convenient photo in Pritchard, *Ancient Near East in Pictures* (1954), p. 118, fig. 349.

that this list preserves useful information on Palestinian topography, especially for the Negeb or Southland.<sup>1</sup>

2. *Shishak's Successors*. At first Sheshonq I's successors tried to emulate both his policy and his success. Osorkon I probably sent out 'Zerah the Ethiopian',<sup>2</sup> and his ignominious defeat at the hands of Asa of Judah (2 Chron. xiv) probably spelt the end of the aggressive policy.<sup>3</sup> Another major factor that would contribute to a change in Egyptian foreign policy was the progressive weakening of the central power and authority of the Libyan pharaohs inside Egypt itself, especially under a nonentity like Takeloth I, and the increasing independence of the provincial chiefs and of Thebes under High Priests once again virtually a dynasty on their own. Hence, Osorkon II apparently returned to the old 21st Dynasty policy of security by alliance; a presentation vase inscribed with his name and titles was found long ago in the palace of Omri and Ahab at Samaria.<sup>4</sup>

3. 'So'. This renewed Egypto-Hebrew alliance would explain how it was that Hoshea, Israel's last king, turned so naturally to 'So, king of Egypt' for help against Assyria, c. 725/4 B.C. (2 Kings xvii. 4). So's identity has always been obscure. This problem has been complicated hitherto by attempts to equate So with the supposed 'Sib'e', an Egyptian commander mentioned in texts of Sargon II of Assyria (722-705 B.C.), and also with the Ethiopian pharaoh Shabako (c. 715-702 B.C.), thought of as a commander in 725/4 B.C. In fact, this whole tissue of equations is unworkable on both chronological and philological grounds. Firstly, Shabako could not be commander in Lower Egypt in 725/4 B.C., because Osorkon IV was nominal king and Tefnakht and Bakenranef of Sais were successively the real rulers of Lower Egypt then, and So is a king, not a commander. Secondly, it appears that the cuneiform 'Sib'e' is now to be read as 'Re'e',<sup>5</sup> and so this commander can be neither

<sup>1</sup> See Maisler-Mazar, *Vetus Testamentum, Supplement*, vol. iv (1957), pp. 57-60. On the Sukkiim, cf. Albright in Rowley (ed.), *Old Testament and Modern Study* (1951), p. 18, following Spiegelberg and Gardiner.

<sup>2</sup> Osorkon and Zerah are not identical as sometimes thought; philological difficulties apart, Osorkon is a Libyan king and Zerah an Ethiopian commander—different in race and office.

<sup>3</sup> But Osorkon I did maintain relations with Byblos as shown by his statue found there, Dussaud, *Syria*, 6 (1925), 101-117, plate 25.

<sup>4</sup> Reisner, Fisher, Lyon, *Harvard Excavations at Samaria*, vol. i, p. 247, fig. Statue of Osorkon II from Byblos, Dunand, *Fouilles de Byblos*, vol. i, pp. 115-116 (No. 1741), plate 43.

<sup>5</sup> See R. Borger, *J. Near E. Stud.*, 19 (1960), 49-53, esp. 53.

So nor Shabako. All three individuals are quite distinct. There are two identifications for So that can be suggested. Firstly, this 'name' may just be the Hebrew transcript for Egyptian *tja*, 'vizier' and 2 Kings xvii. 4 be understood to say that Hoshea sent to 'the vizier (*šō* = *t*) of the king of Egypt', i.e. to Pharaoh's chief minister.<sup>1</sup> The other solution is to take So as an abbreviated reference to Osorkon IV,<sup>2</sup> the last shadowy king of the 22nd/23rd Dynasty, who reigned nominally in the East Delta at Bubastis (Pi-Beseth) as late as 716 B.C.<sup>3</sup> Hence, So is probably either Osorkon IV or his vizier.

### Conclusion

The foregoing survey is a very paltry selection from recent work by present-day scholars and from the new material still waiting to be used. Inadequate as it is, however, this selection may serve to indicate how rich a potential for Old Testament studies Egyptology has to offer, more than ever before. The day is ripening for a stock-taking in this rich field, a task which, *Deo volente*, it is hoped to undertake in the not too distant future.

DR D. VERE: We have listened to two papers this afternoon. The first, dealing with Genesis i-iii, suggested that there was no attempt at full historicity, and the aim was simply to teach spiritual lessons. The second, dealing with other chapters nearby, suggested that detailed, absolute historicity obtained in them. As someone who knows nothing of ancient language, may I ask where I am to draw the line between these two forms in Genesis?

K. A. KITCHEN (Liverpool) in reply to Dr Vere's query concerning the degree of historicity in Gen. i-iii: It is not possible for me to answer Dr Vere's query really adequately in a brief comment; what now follows is merely my own personal impression and is in no way definitive. The historical *mien* of Genesis xi. 1 is beyond doubt: real people do things attested of other real people in contemporary documentation at the relevant periods in antiquity. Genesis x likewise records actual peoples and communities in the second millennium B.C.,

<sup>1</sup> This is the suggestion of S. Yeivin, *Vetus Testamentum*, 2 (1952), 164-168.

<sup>2</sup> Osorkon IV with prenomen 'A-kheper-Rē'. For this kind of abbreviation, compare Sese for Rameses (II) in 19th Dynasty, Caminos, *Late-Egyptian Miscellanies*, p. 47 and references.

<sup>3</sup> As *Shilkanni*, who sent a present to Sargon II of Assyria in 716, cf. H. Tadmor, *J. Cuneiform Stud.*, 12 (1958), 77-78.

perhaps owing their names to various founding fathers.<sup>1</sup> The only satisfying interpretation of Genesis vi-ix is surely as a straight narrative of actual if very distant events. The Flood was also sufficiently real for the ancient Sumerians and Babylonians to insert it into their historiographic king-lists<sup>2</sup> as well as in their heroic literature (Gilgamesh). The names in the genealogies, etc., of Genesis iv-v are not just fanciful but real names, mainly early Semitic in their present form. It is, however, quite possible that they are not continuous in the strict sense (i.e. father to son), but selective—a phenomenon amply attested elsewhere both in the Bible (Ezra; genealogies in Matthew and Luke) and in the genealogies and king-lists of the strictly contemporary Ancient Near East.<sup>3</sup> So, the plain reading of Genesis iv-x (like xi. 1)—whether in Hebrew original or English version—suggests that it is essentially a factual record: compressed, concise, intended primarily to convey definite truths and message but on a basis of actual fact.

Hence, it is not unreasonable to expect that Genesis i-iii will similarly be based on historic occurrence rather than be purely symbolical 'picture-language', unless clear indication is given to the contrary. In fact, both Hebrew original and English versions alike *read* stylistically as a plain narrative;<sup>4</sup> the rivers of Genesis ii. 10-14 are real ones of no 'pictorial' value whatever. That man in the full sense (not just physical) had a definite start, was the last and culminating part of the animate creation, was granted as such, a definite relationship with his Creator and lost it by disobedience—all this is inherently straightforward enough, needing no allegorising. And the narrative of Genesis i is in essence simply a *summary* of creation: its one great affirmation is the one supreme God's initiative without any reference to means used,<sup>5</sup>

<sup>1</sup> Cf. D. J. Wiseman, *J. Trans. Vict. Inst.*, 87 (1955), 14-24, 113-118, on Gen. x.

<sup>2</sup> Translation in Pritchard (ed.), *Ancient Near Eastern Texts*, 1950/55, p. 265; Jacobsen, *The Sumerian King List* (Chicago, 1939).

<sup>3</sup> A striking random example is the Abydos king-list of pharaohs set up by Sethos I (c. 1300 B.C.); at one point, he leaves out five dynasties between the 12th and 18th Dynasties without comment—not captiously, but for reasons that are irrelevant here.

<sup>4</sup> Note also the brief but judicious review of this matter by T. C. Mitchell, *Faith and Thought*, 91 (1959), 48-49.

<sup>5</sup> The original and strictly physical theory of evolution (a means) cannot therefore confirm or refute Gen. i (cause); they are virtually irrelevant to one another, and the famous controversy of late last century was fundamentally wholly unnecessary. Evolution or any other theory may disagree with our *interpretation* of scripture, but this is not the same thing as clashing with the text of scripture itself. The 'evolution' that must be rejected is the illegitimate

beyond the initiatory Divine will and word. It could hardly be any more compact; some aspects are almost just commonsense—one cannot put plants and animals in earth and heaven unless the latter have been created before them, and plants must precede animals; and this passage is as remarkable for what it does *not* say. It has a definite, limited purpose in God's economy of Scripture, and everything foreign to this is rigorously excluded and does not pander to our curiosity. It is surely basically fact, but of the greatest conciseness. The New Testament (e.g. Paul in Romans on Adam, first man) would endorse a factual interpretation.

This does not mean that there are no difficulties in interpretation in two respects. Firstly, there may sometimes be difficulty in correlating the little that is said in Genesis with current results of scientific inquiry into the origins of the universe; this is to be expected just as long (very long, I fear!) as our scientific knowledge (despite its remarkable scope) remains as imperfect and vastly incomplete as it in fact is—new facts turn up, theories come and go. Such difficulties can occur in later Biblical books whose historical nature is denied by none, and hence are no criterion of historicity or otherwise. Secondly—and again as in some passages elsewhere in historical Scripture—there are always the isolated textual points whose correct interpretation is open to honest differences. One thinks of the 'rib' (or better, 'side?') in Genesis ii. 21-23; woman is certainly a basic side to man, but in what sense here? Or, there is the serpent in Genesis iii: the devil could as easily take this form as that of an 'angel of light', or (as elsewhere in antiquity and modern times alike) is it perhaps used as an epithet to express the devil's nature (like 'the old serpent . . .')? But interpretational matters of this kind are not peculiar to Genesis i-iii, as students of the prophets and epistles will know. Although the main point of these early narratives must always be the truths and lessons they teach and were intended to teach, yet they would appear to do so not by fiction that suddenly switches to history after Genesis iii, but through a basic minimum of historic facts, revealed or transmitted compactly over a long period of time until incorporated in written records in the third and second millennia B.C. With Abraham, God's dealings with men were specially concerned with one individual and his descendants, and the historical perspective of revelation changed focus to greater detail in a smaller field—but not in its essentially historical nature.

and unjustified extension of the original theory to inappropriate fields ('evolution of religion', the spirit, etc.).

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## The Wisdom Literature of the Old Testament

Many discussions on literacy, both as it was in antiquity and as it is now, fail to distinguish between the absolute inability to read and write and the lack of readiness to use these skills because of want of opportunities to exercise them. I do not know whether any effort has been made to estimate the number who were able to read and write in the ancient Near-East. We may be certain that it varied much from century to century and from land to land. It will have depended not only on whether it was a period of peace and prosperity, but also on the form of writing used. The simpler and more alphabetic forms of writing will always have found a higher proportion of the population capable of using them.

But even where under Hellenistic influence and post-exilic Jewish preoccupation with the Law of Moses certain parts of the Near-East must have shown a very high proportion of literacy in the strict sense, we may question the real ability of many to make active use of the ability they theoretically possessed. This was due to two closely connected causes. The cost of a book, whether tablets or cylinders of baked clay, or rolls of papyrus or parchment, was, even in New Testament times, when tremendous advances had been made in the techniques of manufacture and copying, beyond the ability of the mass of the population to acquire, unless there existed an interest great enough to cause an act of genuine self-sacrifice. Then, though libraries, in the sense of collections of documents, records and literary texts, had existed from early times at temples and courts, they were not readily accessible to the general public. It is not likely that the famous Hellenistic libraries at Alexandria and Pergamum could have been used by any who could not establish their claim to scholarship.

This confining of true literacy in antiquity to a small proportion of society had very important consequences. Even today, when literacy is taken for granted, except perhaps with the mentally defective and the children of the bargee and of the gipsy, we are painfully aware that there is literacy and literacy; where some profit much from their schooling, some have profited not at all. This cannot be changed by all eleven-plus examinations, comprehensive schools and similar edu-

cational experiments. How much greater must have been the gulf between the truly educated and the bulk of the population in the past. Jesus ben Sira, writing about 190 B.C. puts it quite bluntly, when he says:

The wisdom of the wise depends on the opportunity of leisure;  
and he who has little business may become wise.  
How can he become wise who handles the plow,  
and who glories in the shaft of a goad,  
who drives oxen and is occupied with their work,  
and whose talk is about bulls?  
He sets his heart on plowing furrows,  
and he is careful about fodder for the heifers.  
So too is every craftsman and master workman  
who labours by night as well as by day;  
those who cut the signets of seals,  
each is diligent in making a great variety;  
he sets his heart on painting a lifelike image,  
and he is careful to finish his work.  
So too is the smith sitting by the anvil,  
intent upon his handiwork in iron;  
the breath of the fire melts his flesh,  
and he wastes away in the heat of the furnace;  
he inclines his ear to the sound of the hammer,  
and his eyes are upon the pattern of the object.  
He sets his heart on finishing his handiwork,  
and he is careful to complete its decoration.  
So too is the potter sitting at his work  
and turning the wheel with his feet;  
he is always deeply concerned over his work,  
and all his output is by number.  
He moulds the clay with his arm  
and makes it pliable with his feet;  
he sets his heart to finish the glazing,  
and he is careful to clean the furnace.  
All these rely upon their hands,  
and each is skilful in his own work.  
Without them a city cannot be established,  
and men can neither sojourn nor live there.  
Yet they are not sought out for the council of the people,  
nor do they attain eminence in the public assembly.

They do not sit in the judge's seat,  
 nor do they understand the sentence of judgment;  
 they cannot expound discipline or judgment,  
 and they are not found using proverbs.  
 But they keep stable the fabric of the world,  
 and their prayer is the practice of their trade.  
 On the other hand he who devotes himself  
 to the study of the law of the Most High  
 will seek out the wisdom of the ancients,  
 and will be concerned with prophecies;  
 he will preserve the discourse of notable men  
 and penetrate the subtleties of parables;  
 he will seek out the hidden meanings of proverbs  
 and be at home with the obscurities of parables.  
 He will serve among great men  
 and appear before rulers;  
 he will travel through the lands of foreign nations,  
 for he tests the good and evil among men.

(Ecclus. xxxviii. 24-xxxix. 5)

The further back we go in the history of the ancient Near-East the greater must have become the gulf between the educated man, able to read and write without difficulty and familiar with the records of the past, and the warrior, whom Ben Sira does not even trouble to mention, the farmer and the skilled artisan. We find them in all the centres of culture and civilization and they are called 'scribes' or 'the wise'. Especially in Egypt the two terms seem to be virtual synonyms. Though, as might be expected, we often find them linked with the temples, and not a few of the Wise may have been priests, there was the early tendency for the two to diverge.

The Wise will have had their place in Israel from the institution of the monarchy, and especially from the setting up of the ornate court of Solomon. It will not be chance that the first mentioned as holding the office of royal scribe, or secretary, and apparently called indifferently Serariah, Sheva and Shisha was, if the name is a guide, a foreigner. In Jeremiah xviii 18 the Wise are mentioned as a separate class alongside the priest and the prophet, and in Jeremiah viii. 8, 9 they are, quite understandably, identified with the scribes. They are mentioned too in Isaiah xxix. 14, and are implied, though not expressly so called, in Proverbs xxv. 1.

We are not here concerned with their role in society, which will be sufficiently indicated by two quotations. 'The role of the sages and the public estimate of them were very similar in all lands. They were the schoolmasters and the court counselors.'<sup>1</sup> 'The scribes then are mediators of an international culture in the same manner as modern academicians.'<sup>2</sup> In the light of these quotations it is particularly noteworthy that it is said of Solomon, 'Solomon's wisdom excelled the wisdom of all the children of the east, and all the wisdom of Egypt. For he was wiser than all men; than Ethan the Ezrahite, and Heman and Calcol, and Darda, the sons of Mahol' (1 Kings iv. 30, 31). We can compare only like with like so, however superior it may have been, Solomon's wisdom was considered to be of the same type as the Egyptian and that of the nomads of the desert as well as that of Edom or Canaan. The names Ethan, Heman, Calcol, Darda have generally been linked with Edom, which was famous for its wisdom, cf. Jeremiah xlix. 7, Obadiah viii. Albright, however, claims that these are Canaanite names.<sup>3</sup> He maintains on the basis of the Ugarit discoveries that the Hebrew wisdom literature has its roots in that of the Canaanites. The recent announcement that wisdom material has been discovered in the recent excavations at Ugarit will enable this claim to be tested. The resemblance between much of the extant Egyptian wisdom literature and that of the Old Testament has long been known. In particular it is claimed that Proverbs xxii. 17-xxiii. 12 is based on *The Instruction of Amen-em-Ope*,<sup>4</sup> but a strong argument can be made for the Egyptian being derived from the Hebrew.<sup>5</sup> This is not a question that should be answered *a priori* on the basis of theories of inspiration. In any case borrowing, on whichever side the priority, shows the basic similarity of outlook and method. As might be expected the links with the Accadian wisdom literature are much slighter. It is worth noting that the earliest extant Egyptian examples go back to the third millennium B.C.

'The core of the general cultural viewpoint held in common,' says

<sup>1</sup> Rylaarsdam, *Revelation in Jewish Wisdom Literature*, p. 9.

<sup>2</sup> Bentzen, *Introduction to the Old Testament*, vol i, p. 171.

<sup>3</sup> Canaanite-Phoenician Sources of Hebrew Wisdom in *Wisdom in Israel and in the Ancient Near East*, p. 13.

<sup>4</sup> For *The Instruction of Amen-em-Ope* and representative extracts from Egyptian wisdom literature, see Pritchard, *Ancient Near-Eastern Texts*, pp. 412-424.

<sup>5</sup> So Young: *Introduction to the Old Testament*, pp. 303 ff, but see Baumgartner in *The Old Testament and Modern Study*, p. 212.

Rylaarsdam, 'rests on the conviction that existence is fundamentally rational and moral. The divine rule, to whatever deity assigned, is held to be constant and intelligent. The divine order rewards those who discover and obey it; it punishes those who transgress it—life is morally interpreted.<sup>1</sup> The rest of this paper is concerned with how this pattern is worked out in the Old Testament.

The first impression we gain from the reading of the three Hebrew wisdom books in the canon, Proverbs, Job and Qoheleth (there are two examples in the Apocrypha, Ecclesiasticus or the Wisdom of Jesus ben Sira, and the Wisdom of Solomon, which will not be considered here), is that while they claim to be expressing the truth underlying human life, they do not claim divine inspiration in the way the prophets do. With all the marked differences between the books and the various sections of Proverbs, x. 1-22; xvi. 25-29 are attributed to Solomon; chapter xxx to Agur, xxxi. 1-9 to the mother of Lemuel; i. 7-ix. 18; xxii. 17-xxiv. 22; xxiv. 23-34; xxxi. 10-31 are anonymous—all the authors are God-fearing, convinced that the wisdom on which they rely is a gift of God, springing from 'the fear of the Lord'.

With the exception of Agur (chapter xxx) the writers represented by Proverbs approach their task without any doubts. It is clear that to them life offers few mysteries. God is the originator of all phenomena; hence the general outcome of human actions can be foretold with confidence. There are two ways which a man can walk: the way of wisdom and the way of folly; the paths of uprightness and the ways of darkness (ii. 13); the way of life and the way of death; the high way and the way of thorns (xv. 19). In common with so much in the Old Testament it is assumed that the righteous will prosper and the evil will suffer and perish. But this prosperity is not automatically equated with riches. On the one hand it is clearly recognised that wealth does not always abide (xxiii. 4, 5), on the other many things are valued as being more precious than wealth, e.g. wisdom, the fear of the Lord (xv. 16), righteousness (xvi. 8), a good name (xxii. 1), integrity (xix. 1).

There has been a tendency to depreciate the spiritual level of Proverbs. Gunkel considered that Israelite wisdom was in its first stages purely this-worldly and judging actions by the happiness and gain they would bring. Such criticisms fail to understand the essential nature of this wisdom. It is neither revelation nor a deduction from revelation. It is an effort based on the *a priori* assumption of the moral nature of Yahweh and His conformity to moral law to discover how

<sup>1</sup> *op. cit.* p. 14.

His dealings with men work out in the uniformities of experience and history. Of necessity then it has to concern itself with the individual actions of which the average life is composed, and it is forced to judge the outcome of men's actions by external criteria which are discernable to human observation. 'The Lord looketh on the heart', but the wise must judge by the externals in which the consequences of a man's life have been expressed. The resultant judgments may seem superficial, but that does not of necessity mean that they are invalid. Human wisdom, if it commences in the fear of the Lord, will not claim to penetrate as deeply into the nature of the relationship of God and man as does the inspired prophet. But it is clear that the writers of Proverbs claim to have penetrated to the truth, even if not into its depths.

Even in Proverbs itself there is one voice raised in protest against this assumption. Agur introduces his teaching with apparent self-depreciation:

Surely I am too stupid to be a man.  
 I have not the understanding of a man.  
 I have not learned wisdom,  
 nor have I knowledge of the Holy One. (xxx. 2, 3)

We shall always do well to treat such language with reserve, especially in the mouth of an oriental. What he really means is that if his companions among the wise can really answer his questions, then he in comparison with them must be an ignoramus. He challenges them with five questions:

Who has ascended to heaven and come down?  
 Who has gathered the wind in his fists?  
 Who has wrapped up the waters in a garment?  
 Who has established all the ends of the earth?  
 What is his name, and what is his son's name?  
 Surely you know! (xxx. 4)

The obvious inference is that with all their study of human life as it is lived out on earth the wise had never penetrated to God Himself. In addition, since they could neither control the powers of nature nor understand how they were controlled, they could not reasonably claim to explain God's control of men.

This general thesis is supported by an appeal to many common things in nature and life which the mind of man cannot readily understand or fathom. In other words Agur challenges his friends and

suggests that in fact they have over-simplified the problems facing them and have attributed to human wisdom powers which in fact it does not possess.

For our purpose today it is of no importance by whom and when the book of Job was written, nor what its relationship to the original story may be. What is important is that though Job is far more than just a wisdom book—Pfeiffer rightly says that ‘it does not fit into any of the standard categories devised by literary criticism’<sup>1</sup>—yet Job and his friends have been depicted in the poem as in many ways typical representatives of the wise, and their discussions, though doubtless far more emotional and passionate than the wise would approve of, are yet discussions on just those points that concerned the wise.

When we so consider the book, we see that, whatever other purpose it may have had, it is a blunt and unhesitating rejection of the main position taken up by Proverbs. Job himself denies most emphatically that there is any basis in human experience for the thesis that the good prosper and the evil suffer and perish. Indeed he claims that the reverse is more often true, and his friends are utterly unable to meet his claims. When we come to the Divine voice in the thunderstorm, we find that it is no revelation of the mysteries of Divine action, no justification of the ways of God with man. Though it rebukes and humbles Job, it brushes aside his friends’ defence of the position of orthodox wisdom even more drastically. In fact we are called on to consider the overwhelming greatness of God as seen in His creation, and in the light of that greatness to realise that the wise were dealing with something too wonderful for them really to know.

We shall postpone the discussion of the validity of the position taken up by Agur and Job and look at that taken up by Qoheleth or Ecclesiastes. So far as I know there is no responsible conservative scholar who today supports a Solomonic authorship for this book. It cannot even be fairly called a pseudepigraph, for any closer study will show quickly and convincingly that the author is using a transparent literary device, which he does not expect to be taken literally. Qoheleth is fairly generally dated not much before 200 B.C.

Since the author was an older contemporary of Jesus ben Sira, who made no bones about revealing his identity in his book, there must be a reason for the anonymity of Qoheleth. The most obvious reason, and one that goes far to account for a certain unevenness in outlook, an unevenness that has all too readily been explained by appeals to one or

<sup>1</sup> *Introduction to the Old Testament*, p. 684.

more editors, is that the author is deliberately putting himself into the shoes of Solomon, the wise but yet foolish, the pious but yet apostate king of Israel, in his old age. We should be unwise to assume that the author of necessity agrees with all he writes. These are the imaginary meditations of one who was very wise but lost the fear of the Lord.

Qoheleth is unique in the Old Testament and indeed in Jewish literature until the modern period. While it is pervaded with a deep and reverent belief in God, it is also in the true sense of the word agnostic. It has often been claimed that the opening section with its conclusion:

What has been is what will be,  
and what has been done is what will be done;  
and there is nothing new under the sun, (i. 9)

shows the influence of Greek thought. We need not go so far afield. We are here in the realm of the concept of the cyclic nature of life which dominated the religions of the Fertile Crescent and which was challenged and denied by the whole Israelite concept of history as moving to a goal of God's choice, which is reiterated in the prophetic message. This cyclic concept involves a denial of all moral purpose in nature and in human life.

Qoheleth knows that God controls everything, and that because the happenings of life come from God they must have a meaning and purpose, but he is completely unable to understand God's goal or purposes. In other words he challenges the outlook of Proverbs as completely and as drastically as does Job, though from an entirely different angle. If we take the linking with Solomon seriously and not merely as a threadbare literary device the reason is not far to seek. Solomon was wise above all who had gone before him, and the wisdom had been given him by God, but it did not prevent his being led astray by his many wives into apostasy. Qoheleth is surely intended to show us the impotence of wisdom divorced from God. It is quite incapable, like modern science, of understanding the Why? of things, however well it grasps the How?

It is only when we look on Qoheleth in this way that we can understand its being taken up into the canon of the Old Testament, while the much more orthodox work of Ben Sira (Ecclesiasticus) was refused. The latter was not needed, for it adds but little and that of doubtful value, to Proverbs. Qoheleth, on the other hand, was needed, if the

canon was to include a rounded picture of the abilities and limits of human reason, as it seeks to understand the ways of God with man.

When we compare Proverbs and Job, we shall have to agree without hesitation that the former gives us a truer picture of *normal* life. The wise were correct in their general delineation of human life and in their estimate of the normal outcome of certain lines of conduct. There must be thousands of Christians whose external life and experience fits into the framework of Proverbs—as we have already seen, the wise by the very nature of things had to concern themselves with the predominantly external. Furthermore, in normal times, when justice sits enthroned on its seat, the righteous are apt to flourish and the wicked to perish.

But we are not able from human experience to argue back to God and to lay down a pattern to which His acts and purposes must conform. In spite of so much exaggeration on Job's part, he is fully correct in this, and even God's glories in nature proclaim that a grasping of His purposes will elude us without the aid of revelation. In addition Job is a flaming protest against the idea that God must conform to men's concepts in His dealings with His creatures. Job's friends were wrong about him, not only or primarily because they had formed their theories on insufficient evidence, but because Job was an example of God's freedom to act without reference to precedence and law. No explanation is ever given to Job or us for his sufferings. In them Satan is merely an instrument for the working out of the undisclosed purposes of God, for he cannot even mention Job's name until the Almighty gives him a sign. This means that while we may expect a general norm in God's dealings with us, we may not demand that He conform to it, nor may we use this general norm as a yard-stick with which to measure and judge the exceptional, or those whose experiences are the reverse of ours.

The three-fold cord is completed by Qoheleth. It is not merely that human reason stands in uneasy tension between the normal and the exceptional, between the discernible and explorable on the one hand and the unfathomable depths of the power and wisdom of God on the other. Qoheleth takes with deadly seriousness the aphorism of the wise, 'The fear of the Lord is the beginning of knowledge', or 'The fear of the Lord is the beginning of wisdom', for the two are treated as synonyms. Where this fear does not continue to control human life and thinking, the wisdom and knowledge it originally created becomes strangely unsatisfactory. It enables great works to be undertaken, but it

fails to give them an adequate meaning which could make them the cause of lasting satisfaction. It enables life to be observed scientifically and accurately, but makes the knowledge so gained valueless, for the clue as to the inner meaning of it all is lacking.

Though the Old Testament is primarily a revelation of God through Moses and the prophets, yet no aspect of legitimate human life and experience is ignored by it. Human married love finds its glorification in the Song of Songs and the broken heart its expression in Lamentations. Even so human reason comes into its own in the Wisdom Books, Proverbs, Job and Qoheleth. But if we are to understand what human reason can legitimately undertake in its study of God's ways with men and what are its limits and what the perils associated with it, we need the threefold approach of the three books we have considered. It is only as we put them together and seek to create a synthesis of their message that we shall be freed from either undue trust in human reason or on the other hand undue depreciation of it.