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JOURNAL OF THE TRANSACTIONS  
OF  
THE VICTORIA INSTITUTE

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VOL. LXXIV

1942

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THE TRANSACTIONS  
OF  
The Victoria Institute  
OR  
Philosophical Society of Great Britain

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VOL. LXXIV

1942



LONDON:

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**\*\* The object of the Institute being to investigate, it must not be held to endorse the various views expressed either in the papers or in the discussions.**

# VICTORIA INSTITUTE

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REPORT OF THE COUNCIL FOR THE YEAR, 1941.

TO BE READ AT THE

ANNUAL GENERAL MEETING, MAY 18TH, 1942.

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## 1. *Progress of the Institute.*

Presenting the Seventy-Fourth Annual Report on completion of the Institute's 77th year of service, the council record their appreciation of the generous help of the authors of the papers, and of others whose participation in the discussions have contributed to their effectiveness.

To the Divine Giver of All Good they offer their humble, grateful thanks for the privilege of this continued service and witness in circumstances of exceptional difficulty.

## 2. *Meetings.*

War conditions having rendered it impracticable to hold Ordinary Meetings in January and February, the first four papers of the Sessions 1941 were circulated to subscribers and discussed by written communication. Six ordinary meetings were then held. In all ten papers were published as follows:—

“The Visions of Nebuchadnezzar and Daniel, and the Seventy Sevens Prophecy,” by SIR AMBROSE FLEMING, D.Sc., F.R.S. (President).

“An Argument for the Verbal Inspiration of the Bible,” by the Rev. Principal H. S. CURR, M.A., B.D., B.Litt., Ph.D.

“Divine Intervention in Historic Fact and Prophetic Anticipation,” by the Rev. W. S. HOOTON, M.A., B.D.

- “Genesis and the Gospel,” by E. J. G. TITTERINGTON, Esq.,  
M.B.E., M.A.
- “Ras Shamra, Mari and Atchana,” by SIR FREDERIC KENYON,  
K.C.B., D.Litt., L.L.D.  
Wilson E. Leslie, Esq., in the Chair.
- “Biology in Figures. A Study in Mathematical Biology,”  
by B. D. WRAGG MORLEY, Esq., F.Z.S., F.R.E.S., &c.  
F. T. Farmer, Esq., B.Sc., Ph.D., in the Chair.
- “Some Hiatuses in the Plant Kingdom and their Significance,”  
by Prof. A. P. KELLEY, M.A., Ph.D. (being the Dr. A. T.  
Schofield Memorial Paper 1941).  
Douglas Dewar, Esq., B.A., F.Z.S., in the Chair.
- “The Probable Dates of the Gospels, with Particular Reference  
to their Importance as Historical Documents,” by the  
Rev. F. N. DAVEY, M.A.  
Major H. B. Clarke, late R.E., in the Chair.
- “Inanimate Nature : its Evidence of Beneficent Design,” by  
B. P. SUTHERLAND, Esq., M.Sc., Ph.D. (being the 1940  
Gunning Prize Essay).  
J. I. Aitken, Esq., M.B., B.Ch., in the Chair.
- “Climate and Weather in the Bible,” by CICELY M. BOTLEY,  
F.R.A.S., F.R.Met.S.  
L. C. W. Bonacina, Esq., F.R.G.S., Vice-Pres., R.Met.S., in the  
Chair.

---

### 3. Council and Officers.

The following is a list of the Council and Officers for the year  
1941 :—

#### President.

Sir Ambrose Fleming, M.A., D.Sc., F.R.S.

#### Vice-Presidents.

(Limited to seven.)

Lieut.-Colonel F. A. Molony, O.B.E., late R.E.  
A. W. Oke, Esq., M.A., LL.M., F.G.S.  
Prof. A. Rendle Short, M.B., B.S., B.Sc., F.R.C.S.  
L. E. Wood, Esq., M.B., D.P.H., F.R.S.A.  
Rev. H. Temple Wills, M.A., B.Sc.  
Sir Charles Marston, J.P., F.S.A.



**Trustees.**

Alfred W. Oke, Esq., M.A., LL.M., F.G.S.  
 William C. Edwards, Esq.  
 Robert E. D. Clark, Esq., M.A., Ph.D.

**Council.**

(Limited to Twenty-four.)

*(In Order of Original Election.)*

|   |  |
|---|--|
| A. W. Oke, Esq., M.A., LL.M., F.G.S.                  | Lieut.-Col. L. M. Davies, M.A., Ph.D., late R.A., F.G.S., F.R.S.E. |
| Lieut.-Col. F. A. Molony, O.B.E., late R.E.           | Wilson E. Leslie, Esq.   |
| William C. Edwards, Esq.                              | Percy O. Ruoff, Esq.   |
| Louis E. Wood, Esq., M.B., D.P.H., F.R.S.A.           | Robert E. D. Clark, Esq., M.A., Ph.D.                              |
| Lieut.-Col. T. C. Skinner, late R.E., F.R.Met.S.      | Group Captain P. J. Wiseman, R.A.F.                                |
| Rev. Principal H. S. Curr, M.A., B.D., B.Litt., Ph.D. | W. H. Molesworth, Esq., C.E.                                       |
| Douglas Dewar, Esq., B.A., F.Z.S.                     | Prof. S. Nevin, M.D., B.Sc., M.R.C.P.                              |

**Honorary Officers.**

W. H. Molesworth, Esq., C.E., *Treasurer.*  
 Lieut.-Col. T. C. Skinner, late R.E., F.R.Met.S., *Secretary.*  
 Rev. Principal H. S. Curr, M.A., B.D., B.Litt., Ph.D., *Editor.*  
 Lieut.-Col. F. A. Molony, O.B.E., late R.E., *Papers Secretary.*

**Auditor.**E. Luff-Smith, Esq., *Incorporated Accountant.***Assistant Secretary.**

Mrs. L. L. M. E. Malcolm-Ellis.

**4. Election of Officers.**

In accordance with the Rules the following Members of the Council retire by rotation: Lt.-Col. T. C. Skinner, late R.E., F.R.Met.S., Douglas Dewar, Esq., B.A., F.Z.S., and Group Capt. P. J. Wiseman, R.A.F., who offer (and are nominated by the Council) for re-election.

**5. Obituary.**

The Council regret to announce the deaths of the following Fellows, Members and Associates:—

Rev. P. B. Fraser, Colonel G. B. F. Turner, Dr. Louis E. Wood, Rev. W. M. Douglas, Rev. R. W. Colquhoun, J. N. Holmes, Esq., Sidney Collett, Esq., Colonel H. J. Holness, J. F. W. Deacon, Esq., George Brewer, Esq., D. Revie, Esq., M.B., C.M., D.P.H., Mrs. E. E. Hardy, B.A., Rev. George Denyer, W. C. Edwards, Esq., F. H. Piper, Esq.

**6. New Fellows, Members and Associates.**

The following are the names of new Fellows, Members and Associates up to the end of 1941:—

FELLOWS: F. T. Farmer, Esq., B.Sc., Ph.D., Alexander Fraser, Esq., Rev. James Salter, F.R.A.I., F.R.G.S., B. P. Sutherland, Esq., M.Sc., Ph.D., Lt.-Col. A. N. Skinner, M.V.O., R.A., A. Hanton, Esq., M.B., Ch.B., Mrs. A. D. S. Maunder, F.R.A.S. (Life Fellow), Conway A. Ross, Esq., Rev. Ralph G. Turnbull, M.A., B.D., F.R.G.S., Constructor-Lieut. W. F. Spanner, R.C.N.C., James McGavin, Esq.

MEMBERS: C. P. Sames, Esq., M.B., B.S., F.R.C.S., G. H. McKenzie, Esq., M.A., B.Sc., T. K. Simons, Esq., Rev. G. J. Byrnell, James Forrester, Esq., B.A., Rev. A. W. Payne, M. W. Miller, Esq., B.Sc., E. W. Battersbey, Esq., M.J.I., Rev. L. L. Morris, B.Sc., Th.L., B. E. C. Holmes, Esq., B.A., N. B. Nellis, Esq., B.S., R. H. P. Clark, Esq., M.D., M.R.C.P., Prof. E. McCrady, Jr., B.A., M.S., Ph.D., H. Martyn Cundy, Esq., M.A., Ph.D. (Life Member), Ewart A. Mobberley, Esq., B.Sc., A.M.Inst.C.E., Percy Hodder-Williams, Esq.

ASSOCIATES: W. A. Pite, Esq., F.R.I.B.A., Rev. A. G. Shorrocks, B.A., Flying Officer D. J. Wiseman, B.A., R.A.F.V.R., F. W. King, Esq., Peter Hill, Esq., B. M. Wheatley, Esq., J. S. Phillips, Esq., B.A., Rev. M. J. Fuller, A.B., G. W. Thomas, Esq., B.A., F. H. Barber, Esq., Miss E. M. Shubrick.

### 7. Membership.

|                          |     |     |     |     |
|--------------------------|-----|-----|-----|-----|
| Life Fellows             | ... | ... | ... | 18  |
| Annual Fellows           | ... | ... | ... | 81  |
| Life Members             | ... | ... | ... | 31  |
| Annual Members           | ... | ... | ... | 244 |
| Associates               | ... | ... | ... | 41  |
| Library Associates       | ... | ... | ... | 41  |
| Total Nominal Membership |     |     |     | 456 |

### 8. Donations.

Rev. R. C. Oake (Legacy), £55 9s. 10d.; Sir Ambrose Fleming, £6 17s.; Mrs. Farquharson, 10s.; Dr. B. P. Sutherland, £2 4s. 9d.; G. H. McKenzie, Esq., 3s.; C. Howkins, Esq., 10s.; Lt.-Col. T. C. Skinner, £2; R. Cressy, Esq., 7s.; Mrs. Moilliet, £2; H. Proctor, Esq., 5s.; Lt.-Col. A. H. Fraser, £2; Rev. J. Salter, £1 1s.; Rev. H. T. Rush, £1 17s.; G. H. Ramsay, Esq., 13s.; Rev. Principal H. S. Curr, 10s. 6d.; Dr. A. Hanton, £2; W. Wardle Sales, Esq., £5; Lt.-Col. T. C. Skinner, £2; E. H. Betts, Esq., £1 1s.; Miss Geary, 2s.; R. S. Timberlake, Esq., 10s.; Albert Eagle, Esq., 10s. 6d.; Rev. H. R. A. Philp, 3s.; Douglas Dewar, £1; G. de Boer, Esq., 10s. 6d.; Alfred Norris, 3s.; W. H. Molesworth, Esq., £2; Dr. A. P. Moore-Anderson, £1 1s.; J. Young, Esq., 16s.; per W. E. Leslie, Esq., £5; A. Cowper Field, 6s.; W. Laing, Esq., £10; Total, £108 11s. 1d.

### 9. Finance.

For 20 years prior to 1941 expenditure has exceeded income from normal sources (subscriptions and sales of literature) by an aggregate of £2,130, working out on average to £106 yearly, but annually increasing. Sale of investments, donations, adventitious aid of legacies, etc., have served hitherto to bring down annual deficits

for the time being, but the fact has to be faced that they are on the increase and each year the position becomes more serious.

To effect any improvement, there are only two ways open to the Council; (*a*) by reducing expenditure and (*b*) by increasing income. To both of these it will be seen that the circumstances of to-day are inimical, and the problem before the Council is one of continual anxiety. On the one hand, to secure a large-scale increase of membership, and/or more donations (viewing the work as a charitable object meriting support), is an increasingly up-hill task, while on the other, to apply economies of sufficient effect to turn the scale, would so cripple the operations of the Institute as to gravely prejudice them for a long time to come.

The only course open, therefore, is a mid one with promise of gradual *reduction* of the annual deficit, till conditions improve or help comes from some other quarter, and it can be cleared off altogether. Spectacular remedy there is none within the Council's power.

This mid course the Council are endeavouring to follow, looking to Fellows, Members and Associates to do all in their power to introduce new subscribers and support the work while loyally accepting the disadvantages of stricter economic working.

A. W. OKE,  
*Chairman.*

## BALANCE SHEET, 31st DECEMBER, 1941.

| LIABILITIES.  |      |     |    | ASSETS. |  |  |   |    |           |
|---|------|-----|----|---------|--|--|---|----|-----------|
|   |      | £   | s. | d.      |  |  | £ | s. | d.        |
| SUBSCRIPTIONS PAID IN ADVANCE   | .... |     |    | 11      |  |  |   |    |           |
| SUNDRY CREDITORS FOR EXPENSES   | .... |     |    | 194     |  |  |   |    |           |
| LIFE SUBSCRIPTIONS :—   |      |     |    |         |  |  |   |    |           |
| Balance at 1st January, 1941  | .... | 360 |    | 0       |  |  |   |    |           |
| Additions   | .... | 23  |    | 5       |  |  |   |    |           |
|   |      |     |    | 383     |  |  |   |    |           |
| Less Amount carried to Income and Expenditure Account                       | .... | 13  |    | 5       |  |  |   |    |           |
|   |      |     |    | 370     |  |  |   |    |           |
| “GUNNING” FUND ( <i>per contra</i> )  | .... |     |    | 508     |  |  |   |    |           |
| Balance at 1st January, 1941  | .... | 49  |    | 7       |  |  |   |    |           |
| Add Dividends and Interest received   | .... | 23  |    | 17      |  |  |   |    |           |
|   |      |     |    | 73      |  |  |   |    |           |
| “LANGHORNE ORCHARD” FUND ( <i>per contra</i> )                              | .... |     |    | 200     |  |  |   |    |           |
| Balance at 1st January, 1941  | .... | 22  |    | 5       |  |  |   |    |           |
| Add Dividends and Interest received   | .... | 9   |    | 3       |  |  |   |    |           |
|   |      |     |    | 31      |  |  |   |    |           |
| “SCHOFIELD” MEMORIAL FUND ( <i>per contra</i> )                             | .... |     |    | 220     |  |  |   |    |           |
| Balance at 1st January, 1941  | .... | 2   |    | 16      |  |  |   |    |           |
| Add Dividends received  | .... | 9   |    | 9       |  |  |   |    |           |
|   |      |     |    | 12      |  |  |   |    |           |
| Deduct :—   |      |     |    |         |  |  |   |    |           |
| Prize   | .... | 9   |    | 9       |  |  |   |    |           |
|   |      |     |    | 2       |  |  |   |    |           |
|   |      |     |    | 2       |  |  |   |    |           |
| CASH AT BANK :—   |      |     |    |         |  |  |   |    |           |
| Current Account   | .... | 36  |    | 2       |  |  |   |    |           |
| “Gunning” Prize Account   | .... | 73  |    | 4       |  |  |   |    |           |
| “Langhorne Orchard” Prize Account   | .... | 31  |    | 9       |  |  |   |    |           |
| “Craig” Memorial Trust  | .... | 12  |    | 10      |  |  |   |    |           |
|   |      |     |    |         |  |  |   |    | 153 7 2   |
| CASH AND STAMPS IN HAND   |      |     |    |         |  |  |   |    |           |
|   |      |     |    |         |  |  |   |    | 0 15 2    |
| SUBSCRIPTIONS IN ARREAR :—  |      |     |    |         |  |  |   |    |           |
| Estimated to produce  | .... |     |    |         |  |  |   |    | 62 13 6   |
| INCOME TAX RECOVERABLE  |      |     |    |         |  |  |   |    |           |
|   |      |     |    |         |  |  |   |    | 16 11 4   |
| INVESTMENTS :—  |      |     |    |         |  |  |   |    |           |
| “Gunning” Fund :—   |      |     |    |         |  |  |   |    |           |
| £673 3½ per cent. Conversion Stock at cost                                  | .... | 508 |    |         |  |  |   |    |           |
| “Langhorne Orchard” Fund :—   |      |     |    |         |  |  |   |    |           |
| £258 18s. 3½ per cent. Conversion Stock at cost                             | .... | 200 |    |         |  |  |   |    |           |
| “Schofield” Memorial Fund :—  |      |     |    |         |  |  |   |    |           |
| £378 14s. 6d. 2½ per cent. Consolidated Stock at cost                       | .... | 220 |    |         |  |  |   |    |           |
| “Craig” Memorial Trust Fund :—  |      |     |    |         |  |  |   |    |           |
| £200 Merchant’s Trust Limited 4 per cent. Perpetual Debenture Stock at cost | .... | 209 |    |         |  |  |   |    |           |
| £180 Trust Union Limited 4 per cent. Debenture Stock at cost                | .... | 188 |    |         |  |  |   |    |           |
|   |      |     |    |         |  |  |   |    | 1,326 0 6 |

CRAIG " MEMORIAL TRUST FUND (*per  
contra*)     ....     ....     ....     ....

400 0 0

£2,011 4 3

INCOME AND EXPENDITURE ACCOUNT :—

|   |               |                 |
|---|---------------|-----------------|
| Balance at 1st January, 1941                                      | ....          | 487 17 7        |
| <i>Add</i> Excess of Expenditure over<br>Income for the year 1941 | ....     .... | 101 19 5        |
|   |               | <u>569 17 0</u> |

*Deduct* :—

|                         |                |          |
|-------------------------|----------------|----------|
| Donations received      | 53 1 3         |          |
| Legacy                  | 55 9 10        |          |
| Schofield Memorial Fund | 9 9 4          |          |
|                         | <u>118 0 5</u> | 451 16 7 |

£2,011 4 3

I report to the members of The Victoria Institute that I have audited the foregoing Balance Sheet dated 31st December, 1941, and have obtained all the information and explanations I have required. I have verified the Cash Balances and Investments. No valuation of the Library, Furniture or Tracts in hand has been taken. In my opinion the Balance Sheet is properly drawn up so as to exhibit a true and correct view of the affairs of the Institute according to the best of my information and the explanations given to me and as shown by the books of the Institute. Rectification of the Craig Memorial Trust Investments to bring them into accord with the terms of the Trust Deed is proceeding.

Drayton House,  
Gordon Street,  
London, W.C.1.

21st April, 1942.

E. LUFF-SMITH,  
*Incorporated Accountant.*



THE ANNUAL BUSINESS MEETING  
OF THE  
VICTORIA INSTITUTE

WAS HELD IN ROOM 19, LIVINGSTONE HOUSE, BROADWAY,  
WESTMINSTER, S.W.1, ON MONDAY, MAY 18TH, 1942,  
AT 4.30 P.M.

The Chair was taken by A. W. OKE, Esq., M.A., LL.M., F.G.S., in the unavoidable absence of the President, Sir AMBROSE FLEMING, F.R.S.

Referring to the unique services throughout the past fifteen years of their honoured President, Sir Ambrose Fleming, F.R.S., and to the great regret of all at his retirement, the Chairman intimated the Council's nomination, as successor in office, of Sir Charles Marston, J.P., F.S.A., whose work in aid of Archaeological Research was so well known, expressing Sir Charles's regret that, in consequence of another engagement of long standing, he was unable to be present that afternoon.

The Minutes of the Meeting of May 26th, 1941, having been published in the 1941 *Transactions* and circulated to all, were then taken as read, confirmed and signed.

The Report of the Council and Statement of Accounts for the year 1941, having previously been circulated to all, were taken as read and, after some comments by the Hon. Secretary in brief review of the year's work, the Chairman called upon Mr. E. H. Betts to propose and the Rev. A. W. Payne to second the *First Resolution*, viz. :—

“That the Report and Statement of Accounts for the year 1941, presented by the Council, be received and adopted; and that the thanks of the Meeting be given to the Council, Officers and Auditor, for their efficient conduct of the business of the Victoria Institute during the year.”

After opportunity for discussion, there being no Amendment, the Resolution was put to the Meeting and carried unanimously.

The CHAIRMAN then called upon Major H. B. Clarke to propose, and Mr. R. Duncan to second, the *Second Resolution*, viz. :—

“That Lt.-Col. T. C. Skinner, late R.E., F.R.Met.S., Douglas Dewar, Esq., B.A., F.Z.S., and Group Captain P. J. Wiseman, R.A.F., be, and hereby are re-elected.

Also that Messrs. Luff-Smith & Co., Incorporated Accountants, Drayton House, Gordon Street, W.C.1, be, and hereby are, elected Auditors, at a fee of Three Guineas."

After opportunity for discussion, there being no Amendment, the Resolution was put to the Meeting and carried unanimously.

The CHAIRMAN then called on Mr. E. Luff-Smith to propose, and the Rev. A. E. Hughes to second, the *Third Resolution*, viz. :—

"That Sir Charles Marston, J.P., F.S.A., be, and hereby is, elected President, vice Sir Ambrose Fleming, M.A., D.Sc., F.R.S., resigned; that the Vice-Presidents, Lt.-Col. F. A. Molony, O.B.E., A. W. Oke, Esq., M.A., LL.M., F.G.S., Prof. A. Rendle Short, M.B., B.S., B.Sc., F.R.C.S., and the Hon. Secretary, Lt.-Col. T. C. Skinner, F.R.Met.S., be, and hereby are, re-elected to their offices; and that W. H. Molesworth, Esq., C.E. (who had resigned the office but on request had withdrawn his resignation), be, and hereby is, re-elected Hon. Treasurer."

After opportunity for discussion, there being no Amendment, the Resolution was put to the Meeting and carried unanimously.

The result of the 1942 Langhorne Orchard Essay Competition under the title "Evolution and Entropy" was next announced. R. E. D. Clark, Esq., M.A., Ph.D., being declared the winner of the advertised prize of £21, and E. H. Betts, Esq., B.Sc., the winner of a small second prize which the Council had found possible to offer, Mr. Betts' essay being also adjudged of high merit. The prize was then presented to Mr. Betts. Dr. Clark's prize being posted to him.

The Rules of the Gunning Prize Essay Competition for 1943 were then announced. The appointed title being "The Contribution of the Sciences to Religious Thought" (attention being called to the precise nature of the subject, not the debt that civilization owes to the Sciences, but the contribution the Sciences have made towards clearer thought concerning God, His work, His ways and His word).

There being no other business the Meeting was brought to a close by a vote of thanks to Mr. Oke for presiding, proposed by Colonel Skinner and carried with acclamation.



War conditions having rendered it impracticable to hold an Ordinary Meeting on January 12th, 1942, the Paper for that date was circulated to subscribers and is here published, together with the written discussion elicited.

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## *REASON AND REVELATION.*

By THE REV. PRINCIPAL H. S. CURR, M.A., B.D., B.Litt., Ph.D.

**R**ELIGION is intercourse between God and man. That sentence is not intended as a comprehensive definition of religion. It is not intended to do more than to introduce the subject of this paper, and more especially the contention with which it commences. That is the varying emphasis on the Divine and human in the history of theological thought. There have been periods like the Reformation when the stress was laid on the Divine aspect of religion. It was regarded as God's approach to man in his unspeakable need of salvation from sin. Its truths, by whose apprehension men might be made free from the law of sin and death, were always regarded as of Divine origin. They were supernatural in character, and in thinking of them it was always necessary for the man of God to bear in mind that the thoughts and ways of God are past finding out except in so far as they are revealed by the Spirit of God. That position has never been wholly abandoned, although it has declined enormously in popularity. There have never ceased to be thinkers who address themselves to the consideration of theological problems in the consciousness that they are dealing with the wisdom of God, which often appears to be foolishness to the mind of man. There have also been periods when the opposite view of religion has been widely accepted. It is regarded as man's quest for God. The emphasis falls on the human aspect of the subject. Religious truth becomes a pearl of great price for which diligent search must be made. This attitude has become exceedingly common and popular since the acceptance of the conclusions reached by the modern critical movement with regard to the nature and authority of the Bible. When Holy Scripture ceased to be regarded as the inspired Word of God,

the way was opened for a new conception of religion to dominate the field in which the efforts of man occupied the foreground. The tide is turning again towards the older position, for the simple reason that no standpoint which fails to give God His true and proper place will fit the facts. All such theories are bound to make shipwreck sooner or later on the rocks of experience, submerged and otherwise, chiefly on the fact of sin.

The human mind is so constituted, however, that it is apt to go to extremes. Like the pendulum, it moves from one extremity of its orbit to the other. It travels as far as it can to the right only to return as far in the opposite direction to the left. As Sir Isaac Newton has said, action and reaction are equal. That is illustrated by the Barthian theology. Its tremendous emphasis falls on revealed truth as something that the mind of man can never discover unaided, and that it can but accept with deep reverence and humility. Barth and his school have rendered incomparable service up to a point by calling men to concern themselves a great deal less with what they think about God as with what God thinks about them and their salvation. Nevertheless the movement represents a tendency which it cannot for a moment be said to have followed to its logical conclusion, one which may be admirably characterised in the classic words of Tertullian, "Credo quia absurdum." Pascal said something similar when he observed that the true philosopher is the man who despises philosophy. In other words, revelation and reason are declared to be at enmity, the one warring against the other like the Spirit and the flesh in the members of the true believer. That is a particular phase of this union of opposites which is the centre and soul of piety, the life of God in the soul of man through the presence and power of God's Holy Spirit indwelling the heart by faith. Our immediate concern is with the relations of reason and revelation, another aspect of the same vast subject.

In passing, a reference may be made to the way in which the Bible holds the balance so perfectly between seeming incompatibilities. Oil and water do not mix; but oil and water are both symbols of the Holy Spirit, and in the pages of the volume, for which He is ultimately responsible, extremes of truth meet in Divine harmony.

In using such a term as "revelation," it is necessary that there be some clear notion as to its meaning. It signifies, primarily, God's self-manifestation. That takes many forms,

and it is convenient to classify these in a somewhat rough and ready way under the general headings of general and special revelation. By the former is meant such disclosures of God as may be found in the material universe, in the history of the human race, in research and reflection, and in the testimony of man's conscience. Thus the heavens declare the glory of God, and the earth showeth His handiwork. Kepler, the great astronomer, is said to have exclaimed, in reference to one of his discoveries, that he was thinking God's thoughts after Him. Again, human history is His story, as the simple saying puts it. God brought Israel from Egypt, and the Philistines from Caphtor, and the Syrians from Kir. That was Amos' reading of history in the eighth century B.C. (Amos ix, 7). It is as valid and valuable to-day as it was then. Once more God guides the minds of men in the quest of truth; and in the witness of conscience His voice may be heard in man's heart, often dim and confused and misunderstood, but still present. "The spirit of man is the candle of the Lord" (Provs. xx, 27).

Special revelation begins, continues, and ends in Christ. "God, Who at sundry times and in divers manners spake in time past unto the fathers by the prophets, hath in these last days spoken unto us by His Son, Whom He hath appointed heir of all things, by Whom also He made the world; Who being the brightness of His glory, and the express image of His person, and upholding all things by the word of His power, when He had by Himself purged our sins, sat down on the right hand of the Majesty on high; being made so much better than the angels, as He hath by inheritance obtained a more excellent name than they" (Hebrews i, 1-4). As that great passage reminds us, God has also manifested His grace and glory in the Written Word as well as in the Living Word. The same God Who spake unto the fathers by the prophets hath spoken unto their children by His Son. But the Bible can do nothing apart from Christ. In Judaism we have a faith which is based on the Old Testament without the Divine Person to Whom the law, and the prophets, and the psalms bear such powerful witness. To put it otherwise, there is the Written Word without the Living Word, and to the Christian disciple, approaching the matter in a spirit of the deepest respect and sympathy, the result seems like a body without a soul, or a lamp without light. With that provision, however, it may be said that special revelation must be sought in the Christ and in the Bible. It is necessary to add that both are

revelations in the same way. Neither merely contains a revelation in combination with other things which cannot be so described, just as gold is found intermingled with quartz or earth. Both constitute the Word of God to man. The analogy of natural objects which owe nothing whatever to human care or aid will help us in appreciating this point. "Consider the lilies of the field, how they grow; they toil not, neither do they spin; and yet I say unto you, that even Solomon in all his glory was not arrayed like one of these" (Matthew vi, 28-29).

Regarding reason, it may be admitted at once that it is the gift of God, and a very remarkable token of the Divine favour for man, the crown of creation. One hardly feels disposed to go all the length of the Scottish philosopher, Sir William Hamilton, when he remarked that in the world there is nothing great but man, and in man there is nothing great but mind. But the words are worth quoting as a reminder of the excellence of the endowment which God has bestowed upon us in making us rational creatures. It is only meet that we should love Him with all our mind as well as with all our soul, and heart, and strength, and one expression of such love must surely be an attempt to comprehend with all saints what is the breadth, and length, and depth, and height, even although in the long last we are constrained to confess that the love of Jesus passeth knowledge (Ephs. iii, 18-19). These words imply a good deal, and that may now be explained.

In the first place, God desires intelligent service from His creatures in so far as they are capable of rendering it. "Henceforth I call you not servants; for the servant knoweth not what his Lord doeth; but I have called you friends; for all things that I have heard of my Father I have made known unto you" (John xv, 15). The private soldier has no authoritative information as to the plan of campaign in which he is taking a small share. He may conjecture as to its nature, but at the best he is reduced to guessing. It is far otherwise with the subordinate commanders. They are furnished with information as to what is being attempted, and the reasons for so doing. It may not be as complete or detailed as might be possible, but it is adequate to enable them to take their very responsible part in the operations. In the same way it is the good pleasure of God that man should know enough about His nature, and His designs and His methods, to enable him to be a true, if humble, yoke-fellow with his Maker. That is the justification of all that is

meant by revelation. It is intended to enable us not only to love God, but to serve Him with all our minds as well as all our hearts and souls. The superiority of such intelligent service does not call for comment. It surely speaks for itself.

That being the case, the gospel of God is offered to man in a form which cannot only be received by the heart in saving and sanctifying faith, but which also can be grasped by the understanding. A simple illustration will make that point clear. When medical treatment is sought, the advice of the physician is accepted and practised, although it be wholly incomprehensible. If the desired effect is obtained through these means, the demands of the case are satisfied. Pagan faiths sometimes bear a close resemblance to it. The worshippers do what they are bidden by their priests, making no attempt to understand what they are doing. They resemble the heroic soldiers of the Light Brigade at Balaclava during the Crimean War, when a mounted force of six hundred performed a feat of wonderful courage and wonderful stupidity in charging Russian artillery.

Theirs not to reason why,  
Theirs but to do and die.

Far different is the statement of Paul in writing to the Ephesians Church. "Wherefore I also, after I heard of your faith in the Lord Jesus, and love unto all the saints, cease not to give thanks for you, making mention of you in my prayers; that the God of our Lord Jesus Christ, the Father of glory, may give unto you the spirit of wisdom and revelation in the knowledge of Him: the eyes of your understanding being enlightened; that ye may know what is the hope of His calling and what the riches of the glory of His inheritance in the saints, and what is the exceeding greatness of His power to us-ward who believe, according to the working of His mighty power" (Ephesians i, 15-19). The original readers of these words were thoroughly familiar with a type of religion in which reason was at a discount. The service of God is reasonable, and, it may be added, sweetly reasonable. We are called to walk in the light even as God is in the light.

In addition, revelation lends itself to being systematised. Science is simply systematised knowledge, and the queen of sciences is admitted to be theology. Its raw material, so to speak, is revelation. Just as the geologist classifies and rationalises what may be discovered about the rocks, the botanist about the vegetable kingdom, and the biologist about the animal kingdom, in the same way the theologian reduces to logical form and order

the body of truth which has been revealed by God in His Son and in His Word. That can only be done because the material lends itself to it, and that is only what might be expected, for God is not the author of confusion but of order. He is the ultimate source of wisdom and knowledge.

Before that can be undertaken, reason must be satisfied with the credentials of revelation. We are bidden to prove all things and to hold fast that which is good. That is the behest of revelation, and it proves that it has nothing to fear from reason. Thus conclusive evidence can be produced that, whatever else revelation may be, it represents knowledge unattainable by the unaided mind of man. "Canst thou by searching find out God? Canst thou find out the Almighty unto perfection? It is as high as heaven; what canst thou do?; deeper than hell; what canst thou know? The measure thereof is longer than the earth and broader than the sea" (Job. xi, 17-19). "Surely there is no searching of God's understanding" (Isaiah xl, 28). "No man hath seen God at any time; the only-begotten Son, which is in the bosom of the Father, He hath declared Him" (John i, 18). Such a claim is advanced on evidence of various kinds that it may lead captive the intelligence of man as well as his will and affections. A multitude which no man can number has tested these claims and found them to be true and righteous altogether. Our present concern, however, is not with the results of investigation, but with investigation itself. That is not forbidden but encouraged, because the deeper it goes the more surely will it lead to the conclusion that God is light, and in Him there is no darkness at all.

In the process of such investigation stumbling-blocks will be met, and these of the most serious order. That observation applies both to those whose minds have been enlightened with heavenly wisdom and to all others as well. Here are two instances. There is the doctrine of the Trinity. The historic faith of the Christian Church is that God is one, and yet that He is Three Persons—Father, Son, and Holy Ghost. These are not three aspects of one Divine Being, nor the manifestations of one God, nor have we here a case of Tritheism, the acknowledgment of three divinities. The Trinity is a profounder monotheism than that of Judaism or Islam. Again, the case of the Incarnation will present an insoluble problem to human reason. Here we have one Person and two natures. Jesus Christ in the days of His flesh was very God of very God and very Man of very Man.

That is an unfathomable mystery, and yet it may truly be said to be the keystone of our faith. We are called Christians because we worship Christ as God. These are not the only difficulties by any manner of means, but for these alone many who lean to their own understanding are offended in revelation, especially younger students, who live and move and have their being in an atmosphere where exact science may almost be said to reign supreme. They are sorely perplexed when they encounter revealed truths which defy rationalisation. It is the main purpose of this paper to endeavour to ease such a painful situation which must emerge only too often at the present time.

Attention may be called at once to the fact that problems of one kind and another exist in every department of human knowledge. We hear a great deal about psychology in these days and the remarkable strides which it has made, but we are as far off as ever from being able to furnish a satisfactory explanation of the relations between body and mind, between the brain and the mental process. Even more surprising still was the remark of a medical man to me that the human body still offers riddles which have not yet been read. Indeed, it may be said that in all branches of learning there are questions which not only have defied solution up to this present moment, but bid fair to be finally insoluble. Nevertheless their existence does not discourage investigation. It may be that they are tacitly accepted as inevitable in view of human life and experience. In these circumstances the mere existence of problems and mysteries in the gospel should not unduly upset us. Religion has such things in common with all the other provinces in the kingdom of knowledge. It may be that they are more numerous and more grievous, but the very fact that they are found along all the avenues of man's enquiries should go a certain distance towards reconciling us to them. Revelation has no monopoly of them by any manner of means.

Indeed, these difficulties are only what might be expected in revelation. Of its very nature it is concerned with the supernatural, and the very word reminds us that our concern is with things which transcend the ordinary run of affairs. There must be a large amount of similarity, and also a modicum of very significant differences, as this illustration will show. There are two great branches of chemistry, known as inorganic and organic. As its name implies, the one deals with inanimate matter, while the other is concerned with living things, from the

simplest and humblest to the highest and most complex. The same principles doubtless govern both ; but it stands to reason that in inorganic chemistry there are many factors to be considered which do not arise in the other section owing to the radical difference in the substances with which they deal. In the same way we must keep in view that the natural and the supernatural are very different. "For my thoughts are not your thoughts, neither are your ways my ways, saith the Lord. For as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts than your thoughts" (Isaiah lv, 7-8). Creatures whose natural habitat is the earth, or sky, or sea, have different ways of living. In the same fashion differences between things terrestrial and things celestial are bound to appear. Revelation and reason really belong to different worlds, with all that that carries with it. Thus we are bidden to treat the Bible like any other book. There can be no question that the Bible closely resembles all other books, but it differs from them fundamentally because it stands in a class by itself as being the Divine Library, to use Jerome's phrase. Our Lord was so like His brethren that He was tempted in all points like as they were and are, yet without sin, and the difference is still immeasurable, since it stamps Him as Divine. We must never forget that the natural man receiveth not the things of the Spirit of God : for they are foolishness unto him ; neither can he know them, because they are spiritually discerned (1 Cor. ii, 14).

These fundamental points of difference between the supernatural and the natural—the former being the sphere of revelation and the latter that of reason—may be envisaged more clearly if it be realised that revelation may transcend reason while it does not contradict it. The difference is a fine one, and there is always the peril of making distinctions without differences. Take a simple illustration. Mathematically, the proposition that two and two make five is repugnant to reason. Psychologically, it is true that two and two make five, for men are always better or worse in association than they would be individually. The evidence of experience confirms that statement, so that it cannot be said to be irrational, but it may not be easy to furnish a sufficient explanation. In the same way the exhortation of Paul that believers should work out their own salvation with fear and trembling, for it is God which worketh in you both to will and to do of His good pleasure (Philippians ii,



12-13), obviously outruns reasons, and yet it must be received as true and worthy of all acceptance for it is revealed truth, endorsed by religious experience in every generation from the apostles' day until this present hour. The same can be said for other phases of Christian teaching. They are heavenly mysteries indeed, yet anything but heavenly absurdities.

It will be all the easier to accept that statement if it be constantly kept in view that there is so much in revelation which approves itself to reason. Are we not warranted in maintaining that a similar claim can be made for it as a whole? There is an argument used by Gladstone in one of his essays which will elucidate that reasoning. He cites the case of a mathematical text-book containing a certain number of problems which baffle him. The others he can solve without serious difficulty. He does not on that score discard the book. He rather reflects that a solution of all the problems will yet be forthcoming, and for that reason he reserves it in hope of a full understanding. The analogy surely holds good for the seeming conflict of reason and revelation. So much of the latter can be demonstrated to partake of that Divine wisdom which is ever wiser than man that, in cases where that is impossible, we are surely justified in believing where we cannot prove. "For now we see through a glass darkly; but then face to face; now I know in part; but then shall I know even as also I am known" (1 Cor. xiii, 12).

#### WRITTEN COMMUNICATIONS.

SIR CHARLES MARSTON wrote: I have read through this very interesting paper by Principal Curr, and would like to express my appreciation of it. My only criticism is that he omits to point out the extraordinary fallibility of human reason. And that it all depends upon the soundness, or otherwise, of its premises. I listened in to a broadcast by "The Brains Trust" about a week ago. One of those taking part talked glibly about a thousand million years hence, and I have heard other distinguished men say that the world was created four or five thousand million years ago. This juggling with millions of years displays the most amazing credulity. I should say that it is contrary to all reason, since we only know, imperfectly, what happened five thousand years ago.

Dr. Alexis Carrell, the great medical scientist of the Rockefeller Institute, recently stated "Nothing great has ever come of purely

intellectual processes." This also greatly diminishes the value of reason, and suggests that intuition plays a far larger part in genius than has been estimated during this past century.

Lieut.-Col. F. MOLONY wrote : Principal Curr speaks of the stumbling block presented to some minds by the doctrine of the Holy Trinity. In dealing with this we shall surely do well to stress the fact that the Scriptures always represent the three persons as working together in perfect harmony and co-operation. Greek Mythology often tells of their gods thwarting each other, and this idea has been rendered absurd by the discoveries of modern science.

We have no illustration of three persons working together perfectly, but here is one that comes near it. In every military command, beside the chief we have the Brig.- (or Maj.-) Gen. in charge of administration : and these two usually work together in complete accord. For the third we may well name the Local Auditor, because his position is so independent of the first two, so that it would seem that he could thwart them if he chose. Yet I once heard a B.G.A. say " I think myself very fortunate to have So and So as my Local Auditor." Here was a case of three persons working together perfectly, so far as officers serving under them could judge. Doubtless there were differences between the three, but they did not appear.

So why should we stumble at the belief that the three Persons of the Holy Trinity, though performing different functions, yet may well be said to make one government, or God ? More especially as the Godhead is so very high above us that we ought to expect that there will be matters connected with it which we cannot apprehend.

Major R. B. WITHERS wrote : The two methods of approach to Theology can be paralleled by the two methods of approach to Nature. There is the method which regards the world around us as " given," and which humbly seeks to learn its nature by observation and experiment ; and there is the opposite method which lays down axioms and postulates, and proudly proceeds to deduce what the universe ought to be and how everything ought to behave.

A very definite parallel exists between God's revelation of Himself in material things and His revelation of Himself in spiritual things in His Word. Each is a given entity, complete in itself. In the

Dark Ages men rejected in practice the material entity, and created in its stead the world of Scholasticism with its stationary Earth round which turned the heavens wherein celestial bodies spun in epicycles. This false system broke down when the first scientists sought to discover what *is* instead of to reason what ought to be ; but it still largely shackles Theology. A hundred years ago there were signs that the Scientific Method was at last about to be applied rigorously to the Scriptures; and for a while real progress was made, which is still continuing here and there among unknown students and obscure congregations. Outside these (to the world) insignificant circles, the spirit prevails which pretends to seek truth by relying solely on so-called inner light, and religion, as the paper truly says, " is regarded as man's quest for God."

Truth is not to be discovered by mental theory-spinning, but by precise observation and careful experiment. This is a universal fact ; and until it is universally understood, we can make no collective advance in Theology or progress in religion. Moreover, our progress in Natural Science, being one-sided, will only lead us into ever deeper abysses of catastrophic ruin.

What is said about Barth's school is true up to a point ; but they are wrong where they suggest that revealed truth is in any way above or contrary to reason. It is not that men cannot understand it, but that they do not desire it.

Here it is that I believe the author of the paper to be treading on dangerous ground. Nobody can call simple the doctrine of the Trinity, or of the Incarnation as here described. Indeed, the latter is spoken of as " an insoluble problem to human reason." Frankly, I dissent from this judgment. State all that you can discover about these matters in a really accurate translation of the words of Scripture ; and you will find no insoluble problem and no tangled metaphysical knot. Mysteries appear only when we begin to reason about Scripture. Without these reasonings, there would be no more baffling problems, and no more ground or excuse for our unhappy divisions.

The final quotation of 1 Cor. xiii, 12, is to the point in a way which I fancy the author does not fully appreciate. The contrast is between spiritual immaturity and maturity, not this life and a future state. The immature know " in part " at the best ; but for

those who prefer to study and believe the Scriptures rather than reason about them, "that which is perfect" (literally "complete," or better, "mature") *is* come. The Corinthians were turning back to the things of immaturity, but the Apostle Paul reminded them: "Now that I have become a man, I have laid aside the things of the child." We *can* know now!

Colonel A. H. VAN STRAUBENZEE wrote: I have enjoyed reading this paper by Rev. Principal Curr very much. I dare say that most of our members know that the first mention of any subject in the Bible is a clue to its subsequent meaning. The word "Revelation" first occurs in Deut. xxix, 29—"the revealed things (belong) to us and our children for ever, that we may do all the words of this law, and the secret things, which have not been, but will be revealed." We learn from this passage that *revelation* is progressive.

That the Bible is the Word of God, the late Sir Robert Anderson wrote: "The Bible is called the 'Word of God' for the same reason that Christ is called the 'Word of God.' It expresses the mind of God. But as Christ is 'Very God' and yet perfect man, so the Bible, while absolutely Divine, is yet the most human book in all the world; and as the Living Word became subject to all the infirmities of humanity, *sin excepted*, so, also, the written word is marked by all the characteristics of human writings, *error excepted*."

"The Verbal Inspiration of the Scriptures" wrote Dr. Kennedy when Regius Professor at Cambridge, "is mathematically proved past all cavil by Mr. Panin's discovery of the numeric value of its letters"; later on he says—"the spiritual proofs of verbal inspiration are overwhelming, this is final."

Both the Hebrew and Greek Testaments have no separate symbols for numbers corresponding to our figures—1, 2, 3, 4, etc. In their place they made use of the letters of the alphabet, so that each letter stands for a certain number, called the numeric value of the letter. As each word consists of letters, the numeric value of the word is the sum of the numeric values of its letters. Thus the numeric value of the name "Jesus" is 888, 8 itself being the number of resurrection.

In John xvi, 30, the disciples at the Last Supper made this confession:—"Now we are sure that Thou knowest all things and needest

not that any should question Thee ; by this we believe that Thou, camest forth from God."

It was not what He had become by virtue of His human birth but what He was by inherent right—coming forth from God, that points, not to His Nativity, but to a past eternity with the Father. In John xvii our Lord says, " I have given them the *words* which Thou gavest me."

The attack on Scripture is a sort of feint, which is a strategic movement against Christ, for it is only through the written word that we can reach the Living Word, and if we give up the one, we lose both.

The Epistle to the Hebrews teaches us that Revelation is progressive, and the most marvellous thing in the world that God has spoken to men.

*Firstly*, by Jehovah Himself to individual men, this covers the book of Genesis.

*Secondly*, by the Prophets—from the call of Moses to John the Baptist.

*Thirdly*, by a Son (Who spake the Father's words only) as recorded in the four Gospels.

*Fourthly*, by the Apostles, who heard the Son and had been associated with Him for about three years. There was no new revelation, but it was a confirming testimony to what the Son had taught, and was verified by wonderful signs, tongues, and miracles, even the raising of dead people—all of which foreshadowed the Kingdom to be set up on earth in the Millennial Age. These signs ceased after Acts xxviii. This period is recorded in the Acts, General Epistles, and earlier Pauline Epistles.

*Fifthly*, by the Spirit of Truth as promised by the Son in John xvi, 12-15 ; given to us through the pen of Paul, in the prison Epistles—Ephesians, Philippians, Colossians and those of Timothy, Titus, and Philemon.

The " great secret " of the Mystical Body of Christ is revealed to us, based upon the facts of Christ's crucifixion, burial, resurrection and ascension.

We find ourselves to-day living in this section, having had revealed to us the " all truth of God," which had been hid in God,

but now as in Ephesians iii, 9, stands revealed, called the Dispensation of the Mystery "hid in the ages past in God, who created all things, in order that now, unto the principalities and the powers in the heavenlies, might be made known through the Church (as an object lesson to them) the manifold wisdom of God."

I believe the words quoted in the lecture from Ephesians iii, 19, "to apprehend, with all the Saints, *what the breadth, and length and depth, and height* (of it), and to know the love of the Christ, which passeth knowledge (so) that ye be filled unto all the fulness of God," refer to this "Mystical Body."

The meaning of I Cor. ii, 14, is surely that the natural mind and affections of man are not under the influence of the Holy Spirit (man being incurably evil) but at the end of the chapter it is written we have "Christ's mind"—which we receive from believing the *written word* of God, and acting on this we work or live out our own salvation (from all the things which oppose us) with (reverential) fear, and trembling (at the thought of seeing God face to face) for it is God who worketh in you, both to will and achieve (it) for His good pleasure.

*Sixthly*, by His servant John, the Apocalypse—yet future.

*Seventhly*, Future, as in Psalms l. 4, 5.

I will conclude with Romans xii, 1—"I beseech you therefore brethren, by the mercies of God, to present your bodies a living sacrifice, holy, well pleasing to God, which is your spiritual (reasonable) service."

MR. W. F. SPANNER, R.C.N.C., wrote: The writer has read this lucid paper with pleasure and profit. The subject is a most timely one on which to focus attention. Nearly the whole of Europe is writhing beneath a savage tyranny almost unparalleled in the history of the human race. The Nazi government has given the full weight of its official approval to the hideous barbarities daily perpetrated in all the occupied countries. It has never hesitated to use the foulest and most depraved methods as instruments of national policy. It has ruthlessly trampled down subject peoples with the most ferocious cruelty. It has shown no respect for any law—human or Divine. We may well ask how this stupendous flood of iniquity has come to be let loose. There are many who will

agree with the writer that this frightful eruption of evil is the fruit very largely of the destructive criticism of the Bible which has been rampant in Germany for the last hundred years. Faith cometh by hearing, and hearing by the Word of God, and where the Word of God has been riddled by destructive criticism the foundation upon which faith rests has been undermined.

Since the last great war a generation has grown up in Germany robbed of its faith in God, the God of the Old Testament and of the New, the God who spake in old time by the prophets, and who hath in these last days spoken unto us by His Son, even the God whose gracious plan of redemption is revealed to us in Holy Writ. The Christian youth of Germany have been left miserably equipped to withstand the fierce assaults of the pagan philosophy of race preached by the Nazis. Could this philosophy ever have triumphed if the Christian ministry had faithfully obeyed the apostolic command to "earnestly contend for the faith once delivered unto the Saints"?

This colossal tragedy is appalling to contemplate, but it is greatly to be feared that the same deadly influences which have wrecked Germany are powerfully at work in our own land to-day. It is sad to learn from the author's paper of the many, especially younger, students who are offended in revelation. It is to be devoutly hoped that all who exercise the sacred office of the ministry will earnestly endeavour to "prove all things and hold fast that which is good." If this be done, the writer does not doubt that (to use another's words) the Old Book, whose pages have been sealed so long with the seals of prejudice and unbelief, will be rediscovered, and will set the world aflame, and show men and women, whoever they may be, the way by which they can come into communion with the living God.

#### AUTHOR'S REPLY.

I find myself in cordial agreement with much that is stated in the foregoing comments and criticisms on my paper. The additions made strengthen and enlarge the scope of what was originally written. I find myself unable to follow Major Withers in his observations, although these may serve as a corrective to any excess of emphasis on my part. While I concur in all that he has got to say on the true approach and method in elucidating the secrets of nature and grace alike, I still feel that the use of these will only

reveal more deeply and clearly the mystery in which so much must ever be enshrouded until every riddle is solved in Christ Jesus and by Christ Jesus. The natural world is a much more puzzling place to the modern scientist than to the mediaeval schoolmen. In the same fashion the New Testament not only solved the problems of the Old but did so by revealing new wonders which are as incomprehensible to unaided reason as they are clear and plain to humble faith.



War conditions having rendered it impracticable to hold an Ordinary Meeting on February 23rd, 1942, the Paper to be read on that date was circulated to subscribers and is here published, together with the written discussion elicited.

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## APOCALYPTIC PORTENTS IN THE LIGHT OF MODERN SCIENCE.

By R. E. D. CLARK, Esq., M.A., Ph.D.

**H**ITHERTO the Apocalypse has been studied almost entirely from a literary and homiletic point of view.

It would seem, however, that there is something to be said in favour of a purely scientific approach, especially as this may throw light upon the much-debated question of whether apocalyptic language was ever intended to be understood in a literal\* sense.

There is reason to suppose that in the past God's judgments have not all been of a miraculous nature. Many of the plagues of Egypt, for instance, clearly follow one another as cause and effect, and do not necessarily involve separate and distinct interventions by God.

If, then, many of the portents of the Apocalypse were intended to be understood literally, we should expect to find (1) that at least some of them are intelligible in terms of science, and (2) that many of these are causally related one to another. If, on the other hand, the apocalyptic judgments were never intended literally, but were parables or symbols of historical

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\* The word "literal" often causes confusion. In a sense, of course, no language is ever strictly literal, but refers to *appearances* only: the Nile obviously never turned to literal blood, the sun does not literally rise or set, nor can we even literally speak of "seeing an object." St. John merely describes the things he *saw* in visions, and the "literalist" expositor holds that those alive on earth would often see essentially what John saw, in so far as his visions applied to the earth. On the "literal" view, the criterion of literality in any given case is, of course, the criterion used in everyday language: if a passage makes obvious nonsense when taken literally (a lamb in heaven, a star opening a pit with a key, a dragon's tail attracting stars, etc.) it must be symbolic, but if it makes good sense it must be literal.

events, neither of these consequences are to be expected. Here, then, is a simple means whereby it should be possible to test the literality of some of the debated passages in the book of Revelation.

Causal relations between the wars, famines and pestilences of Chapter VI are clear, and need no further comment. At the sixth seal, however, we read of a huge earthquake which seems unconnected with the previous events. We have, to-day, good reason to think that periodic gigantic earthquakes, resulting in the formation of mountain ranges, are the lot of our globe. Seismic activity shows steady signs of increase, and we cannot rule out the possibility of an impending disaster. Though we cannot predict details, it is at least certain that the Apocalyptic picture of two main shocks, the second far greater than the first, together with a number of lesser shocks between them, is by no means an impossible picture.

The throwing up of a mountain range would involve numerous gigantic explosions in which dust and stones would be shot up to a great height. In the explosion of Krakatoa enormous quantities of matter are known to have been hurled upwards a dozen or more miles. If, then, the apocalyptic quake were to take place we should expect that for a while at least the sun would be darkened. It might well appear as if it were being looked at through cloth, and indeed it has taken on this appearance near local eruptions on past occasions. The light of the moon would be almost cut off, and that which reached the earth might well be of a deep red hue.\*

Winds of high velocity in the stratosphere would rapidly carry the cloud of dust round the earth. On a small scale this actually happened within about a day or so in the case of Krakatoa. As an onlooker looked up into the night sky he would, therefore, observe that from one end of heaven to the other the stars in the sky were steadily extinguished as the great cloud rolled overhead. It would appear as if the whole universe was being rolled up like an ancient scroll. A large volcanic disturbance might conceivably project particles sufficiently high for luminous effects to be produced when they again fell towards the earth. In any case, large earthquakes are invariably accom-

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\* Owing to the greater scattering of light of sort wave lengths, the light from both sun and moon is easily reddened. Moonlight is richer in the red part of the spectrum (R. H. Baker, *Astronomy*, 1930, p. 121) and is therefore more easily reddened.

panied by luminescent phenomena, lights moving across the sky being commonly reported. Thus might there be produced an awe-inspiring spectacle strongly resembling stars dropping to earth from their places in the heavens. So soon as the dust has cleared, of course, the stars would appear once more. In the Apocalypse they are again in the sky at the sounding of the fourth trumpet (viii, 12).

These events are vividly and plausibly described in Revelation vi. It is also worth noting that violent eruptions both here and also later on in the book would produce, in the daytime, gigantic pillars of cloud stretching far into the heavens, and remaining, as it were, poised in space. On a smaller scale such tracts produced by meteorites remain for about half an hour (*cf.* Joel ii, 30, "pillars of smoke").

Violent meteorological disturbances would follow naturally after an earthquake of the magnitude supposed. In vii, 1, 3, we are told that they will not, however, follow immediately. Later, in chapter viii, storms commence, for we read that hail and fire or lightning (together with blood, *see later*) are cast upon the earth. Large fires are caused, and one-third of the earth's surface is devastated. This third would no doubt include the tropics (there are several Old Testament prophecies of fire devouring trees and grass in Palestine in the "day of the Lord"), and it is not difficult to imagine a future state in which, as a result of the continuation of soil erosion and the resulting diminution in rainfall, much of the earth's vegetation might be only too ready for vast forest and prairie fires.

Next there follow two meteorites, or similar bodies of gigantic size, one of which strikes the sea where it explodes with devastating results, while the other apparently breaks up before it reaches the earth, and in some way poisons the fresh water supplies of the world.

In past years a very good case for taking these heavenly bodies as symbols might certainly have been made out. Throughout the seventeenth century, and until the time of Chladni immediately before the dawn of the nineteenth century, scientists were convinced that meteorites were purely mythical. Naturally, therefore, expositors tended to think that these bodies could have no more physical reality than the dragon in heaven. But we now know that the old opinion about meteorites was wrong and that at least two very large ones have fallen in historic times—perhaps three if we include the craters at Waber in

Arabia. We also know that a large number of minor planets are at this moment to be found in our solar system, and that a collision is by no means impossible. Indeed, the minor planet Hermes, which appears to be less than a mile in diameter, came within half a million miles of us in 1937, while only the year before that Adonis came within three-quarters of a million miles. These asteroids might well be described as being of the size of a mountain ; most of the known ones seem to be one or two miles in diameter.

If a minor planet were to strike the earth, the resulting catastrophe would depend upon its size, and still more so upon its relative velocity. In view of the fact that the minor planets travel round the sun in the same direction as the earth, the velocity of collision would not be large, astronomically speaking, and might well be only a very few kilometres a second. As a result, a gigantic detonation would take place. Owing to the incompressibility of water, the detonation would kill all fish over a wide area, and if the asteroid fell, say, in the Pacific ocean, it would be likely enough to destroy a third of the fish life—that is to say, all that happened to be in this ocean at the time. Ships, too, would fare no better.

It is true that, humanly speaking, the “ chances ” of a collision with an asteroid are not large ; but if this event ever did happen, it is not at all unlikely that two or more of such bodies would strike the earth within a short interval of one another.\* It is noteworthy, then, that of the only two heavenly bodies which are said to fall upon the earth in the Apocalypse, one follows immediately after the other.

The second body is seen by John burning like a lamp. It may, then, be an asteroid which breaks to pieces before reaching the earth. An object of this kind would necessarily scatter matter over the earth, just as John prophesies. But a mass of small stones, containing sufficient matter to produce the effects mentioned, could only enter the earth's atmosphere from one hemisphere, so that the matter would only be deposited over, roughly, a third of the earth's surface, comprising (it might well be) a third of the land area. In both this and the former case the Apocalypse is right in not ascribing a world-wide catastrophe to a collision with a body coming from the sky.

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\* Adonis and Hermes, in two successive years, made the nearest known approaches to the earth of any heavenly bodies.

The matter from the new meteorite infects the water supplies of a third part of the earth, making them bitter. Here we are certainly up against a difficulty, for meteorites which have so far fallen to the earth are not capable of producing this effect. But the asteroids were apparently formed in past ages by the break-up of a planet, and concentration of certain elements may have taken place in the crust of that planet, just as many elements have been concentrated in mineral deposits on the surface of our own earth. Thus matter from an asteroid might contain a large amount of a highly poisonous metallic ore which, on being scattered, would be washed away through springs and rivers into the sea.

In order to infect the rivers, the amount of meteoric dust required would have to be very large indeed, and so we should again expect a darkening of the skies. This is exactly what is stated to occur; it is said that the daylight is shortened by a third owing to the lack of light, while on an otherwise clear night only some of the usual stars are visible, a third part of them being hidden—that is to say, presumably, the fainter ones and those far removed from the zenith.

It is worth noting how, in the case of each of these great events which affect a large area of the earth, as also in the volcanic eruption of chapter ix, we are immediately told about the darkening of the heavens. But where local or minor earthquakes are mentioned (viii, 5; xi, 13; xi, 19), no such result is said to follow. This is exactly as we should expect on scientific grounds, and the only exception (*see later*) is so easily explained that it may literally be said to “prove the rule.”



The star with the key of the bottomless pit, the locusts and the horsemen of chapter ix cannot be judged by physical standards. The last two *may* be symbols or they *may*, conceivably, refer to evil spirits who appear in this guise to “clairvoyant” people. Apparitions, with physical effects somewhat similar to those described in this chapter, are known to psychical researchers in our own day (for example, the Eleonore Zugun case).

In the vials (chapter xvi) we have presented the next and last main series of prodigies. First of all the sea is turned to blood. This mysterious blood first appeared after the sounding of the first trumpet, when hail, fire and blood were thrown upon the

earth. Then, after the burning mountain fell into the sea, a third part of the sea became blood—presumably the same third part in which the fish were killed and the ships destroyed. And now the blood at last covers the whole ocean.

Taken literally, such events appear at first sight to be fantastic. It seems obvious that an ocean of blood must be a metaphor for war and death. However, we must remember that the mysterious appearance of blood, or what looks like blood, has been recorded again and again in the pages of history. Homer (*Iliad*, 16, 459) mentions “bloody raindrops”; the Nile was turned to blood in Egypt; Eugenius IV, Paschasius Radbert and many others have told of instances of the so-called “bleeding host,” while the same thing figured in the witchcraft trials (e.g., that of Abigail Williams in the Salem trials of 1692). Red patches on the ground resembling blood, blood-like snow in the Alps, blood apparently falling from the sky (reported, for instance, by Professor Brun, of the University of Geneva, in 1880), large patches of blood-like water in the Red Sea, and countless other instances of a like kind have also been reported again and again in modern times.

These extraordinary appearances are no longer regarded with the disdainful incredulity which they once occasioned. The “bleeding host” was apparently due to *Bacillus prodigosus*, which grows very well on stale bread and manufactures a brilliantly-coloured chemical material named *prodigosine*, the chemical structure of which was unravelled in 1934. A number of other red plants have been described, and are said to have been responsible for some of the other effects—such are *Palmella sanguinea* (causing red patches on the ground); *Protococcus nicalis* (red snow); *Protococcus fluvialis* (from the sky), and the so-called “red wool” algæ responsible for red patches in the Red Sea. No doubt one of these, or some similar organism, was responsible for the change which took place in the Nile in ancient times. In addition, the purple sulphur bacteria are worth mentioning. Many varieties of these are known to bacteriologists, some of which are capable of living in air. Some species of these bacteria are quite remarkably adaptable. They have been known to thrive even in saturated salt solution, which kills nearly all forms of life, as well as at temperatures as low as freezing point or as high as 80° C.

Nature, moreover, can use red pigments for photosynthesis instead of green chlorophyll, and the replacement of green

marine plants by red ones would not therefore be impossible. Even among large plants, many tropical seaweeds are red in colour.

There is then nothing incredible in supposing that, as a result of a "sport" among the numerous minute red organisms, one will suddenly turn up which, for a while, will be able to adapt itself to conditions on earth in an extremely satisfactory manner, and thus spread to an alarming extent. In the early stages it would doubtless be carried from place to place by winds, should violent atmospheric disturbances be common, and so appear to drop from the sky ("cast upon the earth," viii, 7). Then, later on, after the first asteroid fell into the sea, it would be able to establish itself over that part of the ocean which had been made sterile, for floating plankton over a wide area would be destroyed by the sudden rise in temperature. Conditions would, in short, be ideal for the temporary establishment of a single virile organism, and if a minute red photosynthetic plant was in the process of being scattered over the earth by storms, we might almost predict that it would be the first to reach the now sterile part of the sea and establish itself, making the water red and thick with the organism.

Cases of this kind are only too well known to the biologist. Organisms which have been relatively rare for hundreds of years sometimes suddenly assume a new lease of life and multiply to an astonishing extent with little or no warning. The sudden appearance in virulent form of previously mild diseases is a case in point, while among plants the Canadian water-weed and the dreaded prickly-pear have choked the canals and waterways or devastated the countryside of vast tracts of the earth's surface.

At length, such an organism might make steady and rapid progress against the plankton in every ocean and, more slowly, against those in the rivers. Modern oceanography has shown how enormous are the fluctuations in the population of the sea from month to month and from year to year. Thus, in the northern hemisphere, the ocean phytoplankton become scarce towards the end of the summer for lack of phosphate, which is not renewed from deeper waters until December. At such a time another plant, independent or less dependent upon phosphates, might gain a foothold and thus—upsetting the balance of nature upon which marine life depends—cause the wholesale death of higher forms of life.

Already the carbon dioxide content of the air must have increased appreciably, for a large proportion of the vegetation was burnt up after the sounding of the first trumpet, and the supply will have been further augmented as a result of volcanic activity. Carbon dioxide in the air is believed to produce a "blanketing" effect—absorbing heat waves and preventing their re-radiation into space—so that it would cause a general warming of the earth (G. S. Callendar, *Quart. Jour. Roy. Meteorol. Soc.*, 1938, 64, p. 223, etc.).

A rise in temperature normally causes increased evaporation, and so a larger proportion of the earth's surface is covered with clouds which, by reflecting 80 per cent. of the incident light, shield the earth from the sun's heat. In this way the earth's temperature is kept approximately constant.

In the present case, however, the surface waters over the whole earth have become thick with a minute red plant, and this must greatly reduce evaporation. So for a time the temperature begins to rise rapidly, and the protection given by cloud becomes less than formerly. The sun, in effect, seems much hotter, and the temperature becomes unbearable for life. Imagine our surprise, then, when we read in the very next verse: "The fourth angel poured out his bowl upon the sun and it was given unto it to scorch men with fire; and men were scorched with great heat."

Before long, we cannot say how long, the red plant begins to die for lack of nutrient. Probably, too, it liberates chemical substances into the water which bring about its own death. This, at all events, is the typical history of all invading organisms which are too successful in the fight for life. So the cells burst, throwing their contents into the water, and the latter is once more free to circulate and therefore to evaporate at the usual rate.

Meanwhile, however, the average temperature of the earth has greatly increased. Nature's usual compensation comes into operation at once: water evaporates and the heavens fill with thick clouds which obscure the sun. At present the earth at any given time is about half (actually 54 per cent.) covered with clouds, but it would not require an out-of-the-way rise in temperature for this proportion to be raised to three-quarters or even a good deal more. We may take it, then, that after a considerable rise in the temperature of the world, suddenly compensated for by water evaporation, the blue sky would



disappear for a short time, and men would find themselves living under a thick blanket of cloud which shut out a great part of the daylight.

Here, again, the prophecy follows exactly as we might have predicted: "The fifth angel poured out his bowl upon the throne of the beast and his kingdom was darkened." Disease ("pains and sores") naturally follow.

The drying up of the Euphrates would also, surely, be a natural result of the same rise in temperature and subsequent rapid evaporation. Other rivers which flow near the equator will also, no doubt, be dried up (*cf.* Zech. x, 11, and Is. xi, 15, for the drying up of the Nile).

Shortly after this we are told that there is another world-wide earthquake, far greater than even the former one. And in the violent atmospheric disturbances accompanying such an event, coupled with the dense blanket of cloud, we should certainly expect storms of unparalleled intensity. In particular, hailstones which to-day very rarely reach six pounds in weight would be likely to be much heavier; the apocalyptic figure of about ten times this weight seems reasonable.

In the case of the first earthquake, the effects on the heavenly bodies were immediately noticed, but this is not so on the present occasion. No mention is made of lights moving in the sky, or of the darkening of the sun, moon and stars. And the reason for this is obvious from what has gone before. If the earth is covered with a thick blanket of cloud, sun, moon and stars are invisible, and meteorites or earthquake lights are likely to be invisible.

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While it cannot be claimed that *every* portent is causally related to its predecessor, it would seem that the logical sequence of many of the judgments has been established. Nor is this altogether surprising, seeing that the initial judgments (Ch. 6) are clearly interconnected.

On the other hand similes and parables in the Apocalypse, which are admitted by all to be of a symbolic character, seem to show no such causal relations—as is indeed to be expected.

The evidence here collected would therefore appear to show that much of the Apocalypse should be understood literally.

## WRITTEN COMMUNICATIONS.

Rev. Principal H. S. CURR wrote: Dr. Clark's papers always overflow with interest and instruction. Whether one agrees with his contentions or otherwise, it is impossible not to derive a great deal of benefit from his powers of presenting scientific information in a way which makes it intelligible to those whose studies have lain in a different direction. The latter fact makes it impossible for me to offer any comment on the wealth of scientific detail which has been compressed into such small compass in the paper.

I am rather disposed to query Dr. Clark's general attitude to the supernatural and the natural for two reasons. The first is that one receives the impression from the paper that the natural is the criterion of the supernatural. If the prophecies in the Apocalypse cannot be shown to be in harmony with the findings of physical science, then they must be treated as symbolic. Their literal interpretation is barred. I am not sure that such a line of approach will yield the best results in dealing with the teaching and history of the Bible. The things which are impossible with men are possible with God. That saying is true of man's powers of comprehension as well as of his executive ability. Every miracle rendered in the Bible is an example, not least the moral and spiritual miracles whereby trees were made good with the result that their fruit became good despite the fact that hitherto they had been desperately evil. Are we entitled to use the natural as a yardstick for the supernatural?

My second difficulty is closely related. It centres in the fact that the supernatural is a law unto itself. If it once be admitted, there is no saying what may happen. To compare the natural and supernatural is comparable to finding points of resemblance between man and animals. Take the question of food. Both eat the fruits of the earth, but no animal can or will cook them. In the same way the supernatural resembles the natural at many points as the paper so clearly proves. That is no cause for wonder since the same First Cause is behind both. But the two are different worlds of expression like prose and poetry. Milton's prose is much admired by his students, but it is not to be mentioned in the same breath as his poetry. In the same way the supernatural by its very nature makes its investigation a thorny task. It has

been well said that Creation is God's prose and Redemption His poetry. The vastness of the difference between them must not be overlooked in the interpretation of the book which is the standard history of redemption.

Mr. ALBERT O. HUDSON wrote: The opening remarks include a contradiction in terms. If apocalyptic language is to be understood literally, it ceases to be apocalyptic! The speaker appears to ignore the fact that the Book of Revelation was deliberately framed in the form of an elaborate apocalyptic with at least one application to its own day—that of the early persecuted Christian Church—and that this course was adopted in order to give instruction and consolation to those believers who understood the inner meaning of the symbols, under the noses, so to speak, of Roman pagan persecutors who did not understand the imagery. This end was achieved by basing the main framework of Revelation upon allusions to Old Testament history and prophecy, with which the Christians were thoroughly familiar. In our day over four hundred such allusions have been identified. The second and greater application of this apocalyptic work is founded upon the same allusions and describes the conflict between good and evil through the centuries until its consummation in the triumphant establishment of the Kingdom of God upon earth, and the reconciliation of "whosoever will." The speaker's picture of a capricious, malicious God hurling celestial thunderbolts upon the creation of His own hands and reducing it to a desolate shambles is reminiscent of Middle Ages theology, but by no means worthy of modern serious Christian scholarship. The title of the paper is hardly a happy one—there are many apocalyptic portents to be found in the Old Testament as well as in the Gospels; the paper deals merely with a very small portion of the imagery of the Apocalypse, and that in a speculative manner which is hardly to be associated with serious Bible study or with modern science. What has modern science to say, for example, about the "highly poisonous metallic ore" which "might" be precipitated over the earth by the fall of an asteroid and poison the fresh water springs and rivers? In what way is the progress of the Divine Plan for humanity to be advanced by this wholesale vitiation of their essential means of continued existence?

Serious students of the Book of Revelation will hardly give this paper further thought. Non-Christians and sceptics are not likely to be favourably impressed by this presentation of the character and the purposes of the Creator. The astronomical information imparted is of interest, but as a serious exposition of the future plans of One Who said "I have no pleasure in the death of him that dieth; wherefore turn yourselves, and live ye", it contributes little to our understanding of an important section in the Word of God.

Mr. W. E. LESLIE wrote: When Dr. Clark refers to "the much debated question of whether Apocalyptic language was ever intended to be understood in a literal sense" he is probably referring only to the use of such language in The Apocalypse. But "Apocalyptic language" is characteristic of an extensive literature going back at least to the Book of Daniel and continuing after the close of the N. T. Canon.

Every writer must employ the vocabulary and grammar of his day. Otherwise those who received his writings would be unable to understand them. This applies also to the use of idioms and figures of speech. "Apocalyptic language" may be called an idiom. Those of us who hold that The Apocalypse was inspired may suppose that God used this idiom in the visions given to John. These expressions, so strange to us, were familiar to the first readers. Prudence surely suggests that we should at least commence by seeking to understand them as the first readers understood them.

Take a single illustration. At the end of ch. viii John sees first a star, and then a mountain fall. Then he sees a star which had previously fallen. Dr. Clark takes the first star and the mountain "literally," but he cannot so take the second star because it is said "there was given to him the key . . ." We thus have two modes of interpretation in one brief context. But more—the fact that we have here the idiom also used in 1 Enoch xviii, 13 (*ἴδον ἐπιτὰ ἀστέρας ὡς ὄρα μεγάλα καιόμενα*), and xxi, 3 (*ἐκεῖ τεθέομαι ἐπιτὰ τῶν ἀστέρων . . . ἐρριμμένους ἐν αὐτῇ ὁμοίους ὄρεσιν μεγάλοις καὶ ἐν πυρὶ καιόμενοις*), is ignored, whereas it should be the starting point of an attempt to understand the idiom.

Col. A. H. VAN STRAUBENZEE wrote: In Exodus xxxiv, 10, God tells us He will do marvels such as have not been done in all the earth, nor in any nation. Some of these marvels are doubtless what we find revealed in the Apocalypse.

God is now silent, but still acting in grace, and speaking to man through His written Word. He will then be acting in judgment and wrath, and the supernatural things will probably be well understood by those then on earth, who have to experience them.

In the Book of Revelation, the symbols used are usually explained as to what they represent, while marvels, not so explained, may appear now to men as fantastic will be then found literally true. Accordingly I agree with the lecturer in his closing sentence—that much of the Apocalypse should be understood (or better believed) literally as true.

#### AUTHOR'S REPLY.

I am grateful for Principal Curr's words of appreciation. His criticisms raise important issues.

(1) I entirely agree that the natural is not the criterion of the supernatural and I have slightly altered the wording of my paper in order to avoid giving this impression. If we could find no natural connection between the prophesied events we should simply have no evidence either way as to whether they were intended literally. But if we find such connections, the literal view is rendered probable since Divine intervention upon the natural world would presumably initiate a series of natural causes and effects.

(2) I do not see in what way the natural can be said to resemble the supernatural nor do I understand how there can be a "first cause" in the supernatural realm. The supernatural is surely the mental or creative realm which is not ultimately subject to causality. As Mozley pointed out long ago (*Eight Lectures on Miracles*, Lect. 6) the use of the word "law" in connection with the supernatural is open to serious objection. (See also F. R. Tennant *Miracle and its Philosophical Presuppositions*, 1925, p. 27.) Principal Curr seems to assume that the physical events of the Apocalypse must necessarily be miraculous. Possibly he is right, but I see no reason for the assumption. Those who feel the weight of the ethical objections

raised by Mr. Hudson will probably prefer to believe the opposite. In this connection it is worth drawing attention to the extremely interesting views of H. H. Farmer (*The World and God*, 1935. See G. H. C. McGregor's *New Testament Basis of Pacifism*, 1936, chapter 5, for an excellent summary), who argues that the "wrath of God" is necessarily impersonal.

I note that Mr. Hudson assumes that the word "Apocalyptic" itself implies symbolism. This is not so (see standard dictionaries). In any case all agree that the Apocalypse employs numerous symbols and I entirely accept Mr. Hudson's statement that their particular form is sometimes dictated by the need for tact in view of the contemporary persecutions. The number 666 is a clear case in point. The reason why I "appear to ignore" such facts in my paper is, of course, that they are not relevant to my subject. But these facts do not favour Mr. Hudson's views on the Apocalypse: it is easy to see why St. John should use symbols when referring to the Roman Empire, to the imperial city or to Nero, but there was surely no such need in referring to future events. The Roman authorities would not have been greatly incensed at learning that the sky would be darkened, rivers would evaporate and asteroids would fall from heaven at the end of the age.

The Apocalypse, as Mr. Hudson roughly points out, often refers to the Old Testament, but there are many resemblances to the undoubtedly literal (See J. & J. B. E. Garstang. *The Story of Jericho*, 1940) plagues of Egypt as well as to the symbolic passages. Mr. Hudson seems to ignore the former.

I agree that my paper is speculative, but it is hardly more so than that view which sees in the Revelation a "conflict between good and evil through the ages." Taking the latter view, independent students can rarely if ever agree as to the events which the various prophecies were intended to foretell (J. Tyso, *An Enquiry after Prophetic Truth*, 1831). So serious is this difficulty that many modern writers have abandoned the attempt and deny that the book prophesied any future events (R. H. Charles, *Commentary*, 1920; H. L. Goudge, *The Apocalypse and the Present Age*, 1935; A. L. Maycock, *The Apocalypse*, 1941, etc.). The view I have put forward will I believe remove ambiguities of this kind.

Mr. Hudson's further remarks about a "capricious, malicious God

hurling celestial thunderbolts upon the creation of His own hands and reducing it to a desolate shambles" have a curiously pre-war flavour about them. The disastrous world-wide erosion which has occurred in very recent years must almost inevitably mean that agriculture will soon be able to support only a fraction of the present world population. Man has recently added a million square miles to the world's deserts and millions more are on the way (G. V. Jacks and R. O. Whyte, *The Rape of the Earth*, 1939). Only an immediate world-wide campaign to save the land can save man from impending disaster. But now in almost every nation we see the energies of mankind misdirected by war—fighting, as it were, upon a sinking ship instead of manning the pumps. A coming "wholesale vitiation of man's essential means of continued existence" seems inevitable even apart from the effects of war. If "modern serious Christian scholarship" is blind, not merely to Bible prophecies but to the fact that God is already allowing large parts of the earth to become a "desolate shambles" in our day, it is surely clear that such "scholarship" is unworthy of respect. Even secular thinkers (e.g., H. G. Wells, *The Fate of Homo Sapiens*, 1939) can see that civilisation is all but doomed to a catastrophic decline. There is no space to digress on what the Divine plan in allowing judgment may be, but our failure to understand a plan is no reason for supposing that no such plan exists.

However, from his general tone, I suspect that Mr. Hudson is not very sure of his ground for, in order to refute me, he finds it necessary to accuse me of believing in God Who is both "capricious" and "takes pleasure in the death of him that dieth." Needless to say I do not subscribe to either of these propositions.

I agree with Mr. Leslie that in attempting to interpret the Apocalypse prudence commands that we should ask ourselves how the first readers would have understood the book. I have been at some pains to do so and I should never have proceeded with my paper had not the results been favourable.

Out of about a score of possible relevant symbols I could find only *one* which was not understood literally by early Christians, and on that I could find no information. Early Christian writings were, in fact, often more literal than the modern futurist: some writers (e.g., Lactantius) say that the words "those days shall be

shortened" mean that the days will literally contain fewer than 24 hours; others (Greek Apocalypse of Daniel, Sibylline literature) suppose that the woman of the Apocalypse will be a literal woman living in Rome, while many others speak of plagues of weird physical monsters (the "beast," etc.) living on the earth in the last day (W. Bousset, *The Antichrist Legend*, 1896). Literal views were held for centuries and were not finally disposed of until about the time of Joachim (12th century). But is the matter worth pursuing? The literal mindedness of early Christians is surely sufficiently notorious to students. One modern authority (A. Robertson, *Regnum Dei*, 1901, p. 134) frankly confesses that Greek theologians were forced to oppose literalism in order to establish their own position, for if things could be understood literally it was not necessary "to have a skilled class to interpret them"!

Opponents of literalism often quote Elliott to the effect that "the futurist scheme . . . was first . . . propounded about the year 1585 by the Jesuit Ribera" (E. B. Elliott, *Horae Apocalypae*, vol. 4, p. 597, 5th edition, 1862). This assertion is untrue. Ribera's work, which Elliott had never seen, is very rare, but according to Bousset it consists only of a valuable digest of the views of the early Christian writers.

The case of the two stars to which Mr. Leslie draws attention is practically the only apparent inconsistency to which literalism gives rise. It can, I think, be justified (R. Govett, *The Apocalypse Expounded by Scripture*, 1865, vol. 2, p. 373). Ambiguities and similar inconsistencies abound on any other detailed scheme of interpretation.

My thanks are due to Col. van Straubenzee for pointing out the relevance of Exodus xxxiv.

One more point and I have done. As this goes to print I have just come across a remarkable passage by the well-known biochemist Professor J. B. S. Haldane (*Daedalus or Science and the Future*, 1924, p. 61). Haldane suggests that one day an organism, bred in the laboratory and of "intense purple" colour, which he calls *Porphyrococcus*, may escape into the sea making it purple. Here is a sentence from his "prophecy": "For two months the tropical Atlantic set to a jelly, with disastrous results to the weather of Europe."



It is interesting to note that the red unicellular organism *Goniaulax catenellia*, which is exceedingly poisonous, sometimes occurs in the sea especially round the coasts of Japan. At the present time it has spread widely over the West coast of the American continent giving the surf a red colour and has caused death both to birds, animals and men (*Science News Letter*, June 6th, 1942).

War conditions having rendered it impracticable to hold an Ordinary Meeting on February 9th, 1942, the Paper for that date was circulated to subscribers and is here published, together with the written discussion elicited.

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## WHAT THE ANIMAL FOSSILS TELL US.

By DOUGLAS DEWAR, Esq., B.A., F.Z.S.

**G**REAT is the variety displayed by the animal world. About a million different species now exist, all of which, according to the theory of organic evolution, are descendants of one or more kinds of microscopic organisms devoid of eyes, ears, mouth, nose, limbs, bones, shells, digestive tube, liver, heart, lungs, gills, kidneys, blood or blood vessels.

*Prima facie*, this theory is improbable, because, first it involves the origin of all the above organs from undifferentiated protoplasm, followed by prodigious transformations; secondly, despite the great diversity of the animal world, every species is a member of one or other of a few sharply-marked-off groups, each of which is constructed on a different plan.

However, we are not entitled to reject the theory on purely *a priori* grounds. We have to consider the evidence adduced by its supporters. We have to abide by the testimony of the fossils, which provide the only means of deciding whether the theory is true or false. Fossils are the remains of animals and plants embedded in the crust of the earth, or products of these, or marks left by them in the rocks. Billions of these fossils exist, and hundreds of thousands of them have been dug up by man, representing thousands of different species, many of which still exist, but most of which are extinct.

In a short paper it is impossible to survey even briefly the fossils known to us, but it is possible to show how the known fossils furnish a crucial test of the tenability or otherwise of the theory of organic evolution.

There exist to-day, and this is true of the past, a number of animals of peculiar form, sharply marked off from all others. If

as the theory of evolution postulates, each of these be the modified descendant of an ancestor of a generalised type, then each must have a line of ancestors intermediate in form between it and the last of its generalised ancestors. Thus, among mammals, whales, sirenia (sea-cows), seals, bats and kangaroos differ much in form from the ordinary four-legged land mammals from which, *ex hypothesi*, they are descended. *Mutatis mutandis*, this applies to such peculiar types as turtles, pterodactyls (extinct winged reptiles) and ichthyosauruses (extinct marine reptiles) among reptiles; frogs and toads among amphibia; and butterflies, dragonflies, spiders and scorpions among invertebrates. Fossils have been found of all the above peculiar animals, hundreds of them in the case of whales, seals and turtles, scores of them in the case of all the others; but not a single fossil has been found of any species of animal intermediate in form between any of them and its supposed generalised ancestor. Each of these peculiar animals appears in the rocks unheralded, exhibiting all the characters that mark it off sharply from all other kinds of animal.

Although everyone is familiar with the appearance of most of the animals named above, only a zoologist can appreciate fully their differences from supposed generalised ancestors. Accordingly, for the benefit of those who are not zoologists, let me mention some of the differences in the case of whales. These have neither hind legs nor a pelvis, and their fore-limbs are jointless paddles or flippers. At its base the fish-like tail is as thick as the body, and it tapers off to end in a great fin; the tail, by moving up and down, propels the body through the water. Like fishes, whales have no neck and, as they breathe by lungs, they have to come to the surface whenever they take in fresh air, and in order that this may be necessary only at fairly long intervals, the whole respiratory system differs in several respects from that of a land animal. The whale lacks a covering of hair or fur, and, to enable it to keep its temperature above that of the surrounding water, the body is protected by a thick layer of blubber. Further, in order that the young may be born and suckled under water, both they and the mother are provided with special adaptations. I contend that it is impossible for any kind of land animal to have become changed into a whale by a series of slight modifications that took place in successive generations, and I have repeatedly challenged transformists to describe feasible ancestors in the middle stages of the supposed trans-

formation. But, assuming that such changes did take place, it would mean that the line of ancestors linking the first whale to its last quadrupedal land ancestor would include at least thirty types of animal,\* each of which differed sufficiently from its immediate predecessor and successor for it to be deemed a different genus. Nor is this all. The whale order—the Cetacea—exhibits much diversity, and is split up into three sub-orders: the Archæoceti (now extinct), the Odontoceti, and the Mystacoceti. The Archæoceti, while fully adapted to life in the sea, differed in many ways from living whales. Unlike the latter, they had two sets of teeth (milk and permanent), differentiated into incisors, canines, pre-molars and molars. The teeth of the Odontoceti are quite different from those of the Archæoceti; there is only one set of them—the permanent set, and these are all of one type; and instead of having 36 teeth, like the Archæoceti, some dolphins have over 200, while the Narwahl has only one tooth, which projects forwards and may be from 6 to 18 feet long. If, then, the Odontoceti be derived from the Archæoceti, both the original sets of teeth must have been lost, and then a new set of undifferentiated teeth must have been grown, and this new set, unless developed separately in each genus, must have undergone, after development, changes leading to all the types of the teeth in the Odontoceti; in any case, at least five different genera of intermediaries linking the two sub-orders must have existed in the past. The Mystacoceti, or whalebone whales, have no teeth, and so are incapable of masticating their food. Although some of them are the biggest mammals in existence (the Right Whale may be as much as 70 feet long), they feed on small animals such as shrimps, crabs, molluscs and

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\* Anyone who visits a museum and compares the skeleton of any land mammal with that of a whale will appreciate that the conversion of the skeleton of a land mammal gradually into that of a whale would involve at least 30 intermediate genera. Almost every bone of the body would have to be modified in form; the bones of the face and jaw to be greatly lengthened, and the nose bones to become very small; the nasal canals to become almost vertical; all the bones of the ear to be much modified; the neck vertebræ to become very short. The change of the fore-limb from a walking leg to a paddle involves the shortening and thickening of all the long bones, and the joints at the elbow and wrist ceasing to exist. Extra joints have to be formed in some of the digits, the ribs have to become movable on the backbone and the breast bone. As to the hind part of the skeleton, the vertebræ have to become flattened, to grow expanded transverse processes, and to lose the interlocking processes of their arches so as to become freely movable. All the bones of the pelvis and hind legs have to disappear, and to be replaced by two small arc-shaped bones, which serve to stiffen the genital orifice.

medusæ. The huge mouth is just a trap to catch these small animals. The lower jaw may be as much as 16 feet long, 7 wide and 12 deep, affording, as has been well said, sufficient space for a jolly-boat and her crew to float in! Instead of teeth, these whales have baleen plates, which hang like curtains from the roof of the mouth. There are about 600 of these plates, arranged in two longitudinal rows; each plate is thick and solid at the insertion in the jaw, and is split at the extremity into a number of hair-like fringes. Some of these plates are 11 feet broad at the base, and are more than 10 feet long. As the whale rushes along under water with open mouth, it engulfs much water and the animals floating in it. When its mouth is full the jaws close, and thus drive out the water in the mouth, and, during the passage of this, the animals in it become entangled in the baleen plates and then swallowed.

These whales are supposed to be derived from toothed whales. If this happened gradually, at least six ancestral genera must have existed in which the teeth were in as many intermediate stages between the toothed and the baleen-plated whales.

The Sirenia, like the whales, are fully adapted to life in the sea, but the two types differ in so many respects that no one thinks they are derived from the same land ancestor. Thus, *ex hypothesi*, there must have existed in the past as many Sirenian as Cetacean intermediaries. If derived from land ancestors, seals must have had as ancestors at least eight intermediate genera, bats at least 20, and kangaroos three such.

The fact that not a fossil of any intermediate ancestor of any of the above mammals has been found, or of any intermediate ancestor of any of the other peculiar types cited above, is fatal to the theory of organic evolution unless a satisfactory explanation can be given in accordance with the theory, because, as Darwin says, "by my theory innumerable transition forms must have existed." He then asks, "Why do we not find them embedded in countless numbers in the crust of the earth?" and replies: "I believe that the answer mainly lies in the record being incomparably less perfect than is usually supposed" (*Origin of Species*, 6th edn., p. 34). This is the only explanation transformists are able to give to-day. In support of this contention they assert, first, that it is only in exceptional circumstances that a dead animal becomes fossilised, and secondly, it often happens that, after a fossil has been laid down, the sediment in which it is embedded is eroded away, so that the fossils in the

sediment are destroyed or washed out to sea. These assertions are true, but they do not adequately explain the lack of intermediate or transitional fossils. It is commonly said that only one in a million dead animals becomes fossilised. This is a guess; the percentage is too high for animals that lack hard parts and too low for those that have shells. But let us assume that one in a million of the animals that have shells or internal skeletons becomes fossilised, and compare this figure with the immense numbers of animal populations. Consider the house fly, which is cosmopolitan; its total population must run into many thousands of millions. But the house-fly population is small compared with that of most small marine animals. According to the authors of *The Science of Life*, where the waters of the Elbe are slowed down on entering the estuary, over ten million minute crustaceans are to be found in every cubic yard of water, and in the same river below Hamburg about 27,000 bristle worms may inhabit one square foot, and in other parts of the Elbe about 7,000 of the tiny bivalve mollusc *Sphaerium* occur per square foot. In England and Wales 300,221 cwt. of cockles and 37,760 cwt. of mussels were landed in 1925. Both these species have a wide distribution. The edible mussel (*Mytilus edulis*) occurs on both sides of the Atlantic as far south as Morocco; it also occurs in the Mediterranean. Its habitat is near the low-tide mark, and some mussel beds cover several acres and contain millions of individuals. The annual catch of shrimps in England amounts to some 850,000 gallons, that of the U.S.A. to 70,000,000 lbs., that of Japan to 40,000,000 lbs. These three catches represent some 60,000 million individuals. Here are the weights, in thousands of tons, of various fish brought to the United Kingdom in 1929: mackerel, 14; hake, 27; whiting, 31; plaice, 35; haddock, 154; cod, 182; herring, 422. These are taken from only a small part of the range of each fish. In addition to the 422,000 tons of herring taken to the United Kingdom, about 311,000 tons were taken to Norway, Holland, Germany, Denmark and France. At an average weight of  $\frac{1}{2}$ -lb. per fish, these catches of herrings represent over 5,000 million individuals. Generally speaking, the larger the size of an animal, the smaller its population; but the populations of most big animals are immense. According to Mr. J. Colman (*Journal of Animal Ecology* (1937)), in the Newfoundland seal hunt from 150,000 to 200,000 are caught annually. During the season 1928-29, 13,514 whales were

caught by three British and eleven Norwegian whaling companies.

As to land animals, by observations on certain of their roosts, I estimate the population of the common crow of India (*Corvus splendens*) to be about 75 million. Coming to mammals, the populations of some species of bat are enormous. F. Ratcliffe states (*Flying Fox and Drifting Sands*) that some of the roosts of the large fruit-eating bats (*Pteropus*) in Australia hold hundreds of thousands of these animals, adding, "not so long ago a few must have exceeded the million mark." Here are the figures of the number of skins sold at the fur auctions in London during the year 1927 in thousands: beaver, 52; musquash, 491; fox, 640; skunk, 1,660; Australian opossum, 1,668; mole, 1,961; squirrel, 3,203; fur seal, 22; American opossum, 2,431; Persian lamb, 970; marmot, 558; nutria, 21; white hare, 1,085; mink, 121; Russian ermine, 214; stone marten, 39. In addition to the London auctions, there are other large ones at New York and Leipzig, and smaller ones at Montreal Winnipeg, Paris, Seattle and Edmonton.

The population of some species is far greater than that of others. The size of the population of a species depends upon its range and its density. Take, for example, the 15 species which constitute the teal genus (*Nettion*). The common teal (*N. crecca*) extends over the whole of Europe, Asia and North Africa, while at the other extreme is *N. albigulare*, which is confined to the Andaman Islands; the population of the former is many millions (2,720 were shot on one lake in Kashmir in one season), while that of the Andaman teal is only a few thousands. Speaking generally, few species have a population of less than 500,000, and few genera one of less than three million. The populations of some species are renewed every year; nearly all are renewed in less than every twenty years. If the average population of a given species is 500,000 and is renewed every 20 years,  $2\frac{1}{2}$  million individuals live in 100 years, 25 million in 1,000 and 150 million in 6,000 years. On the time scale adopted by many zoologists, most species exist for fully one million years, and this would make the total population of this species 25 thousand million. If only one in a million of these is fossilised, in all 25,000 fossils of the species should be laid down in the course of its existence. Thus, *a priori*, every species having a shell, skeleton or hard parts should leave in the crust of the earth many fossils, and a genus which comprises a number

of species should leave very many. This conclusion is confirmed by the immense number of fossils known to exist, especially of smaller animals. Some rocks are composed almost entirely of the remains of marine animals ; thus, one cubic inch of limestone contains more than a million fossils.

We must, however, bear in mind that some of the fossils laid down eventually get destroyed. This happens when the sediment in which such fossils are buried suffers erosion by the action of wind and rain. In such case the eroded detritus is carried away, usually by water, and deposited elsewhere to contribute to the formation of a new rock in which fresh fossils are laid down. The fossils originally buried in the eroded part of a rock are either re-deposited elsewhere or destroyed as the result of exposure to wind and rain. But the number of fossils destroyed in this way, though great, represents only a fraction of the total number of fossils laid down. It may be that all the fossils laid down of some species (and even of some genera) of which the range never becomes extensive may be destroyed, but it is doubtful whether this has ever happened in the case of a family or larger group.

But we must distinguish between the completeness of the record of the fossils and that of our knowledge of it. Our knowledge of the record is at present far from complete. Apart from rocks at the bottom of the ocean and under ice in the Polar regions, many countries have been very little explored geologically. This being so, we have to ascertain, if we can, whether or not our knowledge is sufficient to render the non-discovery of the transitional fossils cited above a fatal objection to the evolution theory—in other words, sufficient to render it almost certain that the necessary transitional forms never existed. I think it is possible to do this by applying certain tests.

One test is to ascertain the percentage of existing species and genera of which fossils have been found. If fossils of all the species or genera of any class of animals have been found, obviously the fossil record and our knowledge of it is complete in the case of that class ; if, on the other hand, the percentage is very small, then either the record, or our knowledge of it is, or both are, very incomplete.

About twelve years ago the late G. A. Levett-Yeats and myself ascertained this in the case of living genera of mammals. In order to reduce our task to reasonable dimensions, we selected as our unit the genus as the term was understood thirty years



previously, before systematists developed the mania of species-splitting. Thus we had to deal with 664 genera, which have now been split up into several thousand. A short account of the results of our enquiry is to be found in Vol. LXIV of the *Journal of the Transactions of the Victoria Institute*. Since the publication of that paper fossils have been found for the first time of 16 living genera of mammals, showing how our knowledge of the fossil record is increasing, and rendering it necessary to alter the figures in it. ‡

Here are the up-to-date totals :—

| MAMMALS.               |                              |  |
|------------------------|------------------------------|--|
| TABLE I.               |                              |  |
| Name of Order.         | No. of genera<br>now living. | Percentage of which<br>fossils have been<br>found. |
| Primates ... ..        | 40                           | 42·50  |
| Insectivora ... ..     | 36                           | 50·00  |
| Edentata ... ..        | 13                           | 60·00  |
| Rodentia ... ..        | 157                          | 63·06  |
| Carnivora (Fissipedia) | 55                           | 66·66  |
| Do. (Pinnipedia)       | 9                            | 77·78  |
| Hyracoidea ... ..      | 1                            | 100·00   |
| Proboscidea ... ..     | 1                            | 100·00   |
| Perissodactyla ... ..  | 3                            | 100·00   |
| Artiodactyla ... ..    | 61                           | 79·03  |
| Cetacea... ..          | 29                           | 73·17  |
| Sirenia ... ..         | 3†                           | 66·66  |
| Chiroptera ... ..      | 215                          | 19·07  |
| Monotremata ... ..     | 3                            | 100·00   |
| Marsupialia ... ..     | 39                           | 41·03  |

† Including Rhytina.

‡ In order to bring up to date the list of living genera of mammals of which fossils have been recorded, on page 143 of Vol. LXIV of the *Journal of Transactions of the Victoria Institute*, the following additions should be made :—

\* Denotes not known earlier than the Pleistocene.

*Primates*—\*Cercocebus.

*Insectivora*—\*Notiosorex, Soriculus, Parascalops.

*Rodentia*—\*Petromys, Phenacomys, \*Heterocephalus (Cryptomys), \*Mystromys, \*Heteromys, \*Microdipodops (also Apodemus, inadvertently omitted, should be added, and Dactylomys struck out, as this is a synonym for Cannabatomys).

*Ungulata, Artiodactyla*—\*Hydropotes, \*Budorcas.

*Carnivora, Fissipedia*—\*Crossarchus (also Otocyon and \*Thalarctos, inadvertently omitted).

*Cetacea*—\*Rachianectes.

*Chiroptera*—Hipposiderus, Miniapteris and \*Megaderma.

TABLE II.

| Types of Mammal. | No. of genera<br>now living. | Percentage of which<br>fossils have been<br>found. |
|------------------|------------------------------|--|
| Volant ... ..    | 215                          | 19·07  |
| Marine ... ..    | 41                           | 75·61  |
| Land ... ..      | 408                          | 60·54  |
|                  | —                            | —  |
| Total ... ..     | 664                          | 48·06  |
|                  | —                            | —  |

TABLE III.

| Continent.           | No. of genera of<br>land mammals<br>now living. | Percentage of which<br>fossils have been<br>found. |
|----------------------|---|--|
| Europe ... ..        | 48  | 100·00   |
| Asia ... ..          | 134   | 72·06  |
| Africa ... ..        | 145   | 53·79  |
| North America ... .. | 71  | 94·44  |
| South America ... .. | 86  | 72·09  |
| Australia ... ..     | 48  | 45·83  |

Two features of the above figures are the low percentage of living genera of bats of which fossils have been found, and the considerable variation in the percentages of continents. The first shows that flying animals are less liable than other kinds to meet with accidents, such as being drowned in floods, which result in fossilisation, indicating that the fossil record may be incomplete in the case of such creatures. The second illustrates the different extent to which the various continents have been explored by fossil-hunters, showing that our knowledge of the record of mammals in Europe and North America is extensive, and rather poor in the case of Africa and Australia.

As more work is done outside Europe the percentages for the other continents are likely to grow until they reach 100.

One cause of the low bat percentage is : most bats are confined to tropical and sub-tropical areas, *i.e.*, those that have been least explored geologically. Only five genera occur in the British Isles, and fossils of all these have been found, as have those of all living European genera. It may well be that eventually fossils will be found of all the 215 living genera of bats. Probably the only animals of which the fossil record is incomplete are those that lack shells, teeth, skeletons, or other hard parts. This is indicated by the figures I have compiled, showing the extent to which fossils have been found of genera of molluscs now living in the United Kingdom and in its coastal seas :—

TABLE IV.

| Class of Mollusc.                  | No. of genera<br>now living. | Percentage of fossils<br>recorded. |
|------------------------------------|------------------------------|------------------------------------|
| I. Lamellibranchiata<br>(bivalves) | 67                           | 100·00                             |
| II. Gastropoda—                    |                              |                                    |
| Polyplacophora ...                 | 1                            | 100·00                             |
| Prosobranchiata ...                | 79                           | 96·20                              |
| Opisthobranchiata ...              | 57                           | 19·30                              |
| Pulmonata ...                      | 25                           | 76·00                              |
| Scaphopoda ...                     | 2                            | 100·000                            |
| III. Cephalopoda ...               | 11                           | 27·30                              |
|                                    | —                            | —                                  |
| Total ...                          | 242                          | 73·97                              |
|                                    | —                            | —                                  |

The low percentage in the case of the Cephalopoda is due to the fact that the only hard part of these is the readily-decomposable “cuttle bone.” In the case of the Opisthobranchs. only 16 of the 57 genera possess shells. Of these, fossils of 11 have been found ; in three of the remaining five the shell is minute.

As to the six genera of Pulmonata, of which I have no fossil record; two are about one-tenth of an inch long, one is about one-fourth of an inch, one has no shell, the minute shell of one is as thin as paper, while one seems to be confined to Co. Kerry, Ireland.

Consider the import of the evidence afforded by the statistics of the mammalian fossils. As fossils of 73·17 per cent. of living genera of Cetacea have been found, if whales be derived from land mammals, fossils ought to have been found of about 21 of the 30 genera of what we may style pro-Cetacea, *i.e.*, intermediaries between the first Cetacean and the last of its land ancestors, also some fossils of collaterals of these transitional forms. In addition, fossils should have come to light of some six genera of Cetacea interlinking the three sub-orders of this group.

Moreover, fossils ought to have been found of over a score of genera linking the Sirenia with a land ancestor, five or six genera linking seals with their land ancestors, and at least 20 connecting the bats and three connecting the kangaroos with ancestors that walked on all-fours.

As fossils of turtles are abundant in the rocks from the time of their first appearance in the Triassic period, a large number of fossils ought to have been found of genera transitional between them and their supposed shieldless ancestors; and this is true to a rather less extent of the Pterodactyls, the Ichthyosaurs and the other peculiar types cited above. The fact that not a single fossil has been found of any of these hypothetical intermediaries renders it almost certain that such intermediaries have never existed.

Another method of testing the degree of completeness of the fossil record and of our knowledge of it is to take a continent, and compare the number of genera of any class of animal now living on it with the number shown by the known fossils to have existed on it at various points of time in the past. Some years ago I made such an enquiry in respect of the genera of mammals now living, and those known to have lived, in Europe and North America. The results of this enquiry were published on page 131 of Vol. LXIV of the *Transactions of the Victoria Institute*. Owing to discoveries since made, these figures need to be brought up to date. I have not been able to do this completely, owing to war conditions; but, thanks largely to recent papers by Dr. G. C. Simpson and Mr. G. L. Jepsen, I have been able to augment the numbers of the early Tertiary mammalian fossils of North

America, also to add to those of the latest periods of both continents. Here are the figures thus amended :—

TABLE V.

Number of genera of non-volant land mammals known to have lived at various stages of the Tertiary and in the Quaternary of Europe and North America.

| Stage.               | Europe. | North America. |
|----------------------|---------|----------------|
| Lower Palæocene ...  | 14      | 32             |
| Middle Palæocene ... |         |                |
| Upper Palæocene ...  |         |                |
| Lower Eocene ...     | 24      | 73             |
| Middle Eocene ...    | 38      | 69             |
| Upper Eocene ...     | 68      | 37             |
| Lower Oligocene ...  | 80      | 58             |
| Middle Oligocene ... | 41      | 44             |
| Upper Oligocene ...  | 43      | 57             |
| Lower Miocene ...    | 52      | 51             |
| Middle Miocene ...   | 59      | 35             |
| Upper Miocene ...    | 82      | 52             |
| Lower Pliocene ...   | 88      | 42             |
| Middle Pliocene ...  | 48      | 18             |
| Upper Pliocene ...   | 47      | 30             |
| Pleistocene ...      | 68      | 108            |
| Now Living ...       | 48      | 72             |

Thus, the known fossils tell us that at most stages the number of genera of mammals was larger in Europe than it is to-day, and in most periods not much smaller in North America. That the genera now living are fewer than in the Pleistocene seems to indicate that the recent Ice Age caused the extinction of many mammals. The low figures for some stages may mean that in these comparatively few deposits holding mammal fossils were laid down, or that some deposits have not yet been examined, or that something led to the extinction of numbers of genera of mammals. It has been objected that, since many zoologists estimate the duration of the Tertiary period at from 50 to 60 million years, each of the stages in the above list represents three or four million years, and it is ridiculous to compare such a space of time with a single instant. Even if this estimate be accepted, the objection has little substance, because more than

80 per cent. of the genera listed are shown by their fossils to have lived in more than one of the stages of the table ; so that if each of these stages were sub-divided into a million, every sub-division would contain more than four-fifths of the number given in the table. The above figures demonstrate that in the case of the mammals of Europe and North America, the fossil record of the Tertiary cannot be described as "exceedingly fragmentary." In some epochs it seems to be nearly complete as regards genera and higher categories. Thus G. C. Simpson, who is a transformist, writes (*The Fort Union of the Crazy Mountain Field and its Mammalian Faunas* (1937), p. 69) : "Knowledge of the general composition of the Middle and Upper Palæocene mammalian faunas of North America as a whole may now be considered very good. It is probable that we have representatives of almost all the orders and families and a large majority of the genera that occurred on this continent during that time. The combined area represented by collections is now very considerable, of the order of 1,000 square miles of actual collecting territory, representing many times that in the ranges of sampled faunas. The environmental variety represented is apparently great, for the sediments yielding mammals of these ages are of very different sorts, many genera are represented by several well-defined species in each, and inferred habits of the various known mammals include almost every possible terrestrial habitus. The collecting areas certainly were part of a unified North American land mass in the Palæocene, extending more than 1,200 miles north and south, and were probably central in that land mass, ideally situated for a representative sample of the whole North American fauna."

The testimony of the fossils of the Middle and Upper Palæocene periods is of vital importance in connection with the theory of evolution, because in the period that followed immediately—the Eocene—several orders of mammals make their first appearance in the rocks—the carnivora, odd-toed ungulates, even-toed ungulates, bats, proboscideans, and eight other orders now extinct ; also the rodents, of which the earliest known fossils occur quite at the close of the Palæocene. If these orders evolved from other orders, fossils of these latter or their immediate descendants ought to be abundant in Palæocene rocks ; but no such fossils have been found. Evolutionists have to admit that the Eocene orders of mammals did not evolve in North America or in Europe. It is, or used to be, thought that the evolution

took place in Asia, and the new orders spread from that continent to Europe and North America. Recent discoveries in Mongolia, however, are unfavourable to this theory, because, to quote G. L. Jepsen (*Proceedings of the American Philosophical Society*, (1940), p. 293), "as an evolutionary incubator, however, Asia has been disappointing, because few, if any, of its known fossils clearly represent forms ancestral to those of other regions."

In order that Table V may furnish all the information available as to the number of genera existing in each of the stages into which the Tertiary Epoch has been divided, I have arrived at the total in each stage by including (1) all genera of which fossils have been found in rocks laid down in the stage, and (2) genera of which fossils have not been recorded from those rocks, but which have been recorded both from the stage that immediately preceded and that which immediately followed this stage; for example, if fossils of a particular genus have been recorded from rocks of the Upper and Lower Miocene periods, but not from those of the Middle period, I have included the genus in the Middle Miocene list. On this account I have been charged by evolutionists with wrongly including in my list for various periods fossils which have not been found in them. This is on a par with rebuking me because I assert that Jones was alive in 1939, although I did not actually see him in that year, and base my assertion on the fact that I saw him in 1938 and 1940!

The reason why transformists have attacked Table V is that it demonstrates that the fossil record is not very fragmentary in the case of the mammals that existed in the Tertiary and Quaternary periods. For example, we know that to-day 48 genera of mammals are living in Europe, and the fossils show that 59 genera were living on this continent in the Middle Miocene. If the latter figure represents only a small fraction of the number that actually existed, say 10 per cent., that would mean that in the Middle Miocene 590 genera lived, as opposed to the 48 of to-day. I doubt if anyone believes this to be the case. Do evolutionists realise that if the fossil record be very fragmentary, then some facts revealed by the known fossils are fatal to the theory of organic evolution? These facts are first that, instead of making their first appearance in the rocks in the form of a single species or genus, as the theory requires, large animal groups usually appear in the rocks unheralded, and in the form of several genera. Thus the earliest-known fossils of the Cetacea and the Sirenia date from the Middle Eocene; but instead of

only one genus, or at the most two genera of each, as the evolution theory requires, having been found in the Eocene, fossils of six genera of Cetacea and five of Sirenia have been found. This is bad for the evolution theory; how much worse if these be only a small percentage of the genera then existing!

For my part, I am satisfied that in the case of animals having hard parts, the fossil record is not very fragmentary, and that transitional forms from generalised to highly specialised types never existed, and that is why fossils of such have not come to light.

The question has been put to me: If no fossils have been found transitional between such peculiar types as the Cetacea and their supposed generalised land ancestors, how is it that zoological text-books cite instances of fossils intermediate between the various classes of vertebrates, such as the Ictidosauria linking reptiles and mammals, *Archæopteryx* linking reptiles and birds, *Sauripterus* and *Ichthyostegis* linking fishes with amphibia? The answer is: these alleged intermediaries are nothing of the kind; so far as our knowledge of it goes, every fossil cited as intermediate between two classes belongs indubitably to one or other of the two classes it is said to link. The most that can be said of each is that it is the member of its class most like members of another class. To prove this in the case of all the alleged intermediaries would involve writing a small book. All I can do here (and that by exceeding the approved length of papers for this Institute) is to deal with one alleged intermediate briefly, and in as simple language as possible. It must be a case of *ex uno disce omnes*.

Let us consider the Ictidosauria which are said to be intermediate between the class Reptilia and the class Mammalia. In fact, they are true reptiles.

Mammals are sharply marked off from reptiles by a number of characters. Most of these are (1) physiological, *e.g.*, the main product of excretion is urea in mammals, uric acid in reptiles; the blood of mammals is maintained at a constant temperature, that of reptiles is not; or (2) appertain to the soft parts of the body, *e.g.*, mammals have a single aorta, reptiles have two aortæ; mammals have mammary glands, reptiles have not.

As characters of these kinds are not fossilised, in determining whether a fossil is that of a mammal or a reptile we have to rely on the skeleton or hard parts.



The most important skeletal differences between mammals and reptiles are :—

(1) In reptiles the drum of the ear is connected with the tympanum by a single rod-like bone, known as the columella ; in mammals the connection is by a series of three bones, called the stapes, malleus and incus, because in shape they resemble respectively a stirrup, a hammer and an anvil.

(2) In every reptile the articulation of the lower jaw with the skull is not direct, but through the intervention of a bone called the quadrate ; in every mammal the articulation is direct—there is no quadrate bone.

(3) In every reptile each half of the lower jaw is composed of six bones ; of these the largest is called the dentary, because it bears the teeth ; the others are the splenial, coronoid, angular, supra-angular and articular ; the last is so called because it is the bone that articulates with the quadrate. In every mammal each half of the lower jaw is composed of only one bone.

(4) In all reptiles the ankle joint is between the two rows of ankle bones ; in all mammals it is at the root of the toes.

(5) and (6) There are differences between the breast- and hip-girdles of reptiles and those of mammals.

When, then, we find a fossil of which we are in doubt as to whether it is that of a reptile or a mammal, we have to observe all the above characters in it ; if these are all reptilian, it is clearly a reptile, and clearly a mammal if these are all mammalian. Should, however, the fossil have some characters intermediate between those of a mammal and a reptile, such as two bones in the middle ear, or two, three, four or five bones in the ramus of the lower jaw, then we must regard it as intermediate, and may fairly put it in a class of vertebrates intermediate between the reptilia and the mammalia.

Let us apply these tests to the known fossils of the Ictidosauria. Unfortunately, we know nothing of the legs of these animals, and very little of the pectoral and hip girdles ; but we do know the skull and lower jaw, and, fortunately for diagnosis, half the main skeletal differences between the reptiles and mammals are exhibited in these. In the Ictidosauria all these three features are entirely reptilian. Why, then, do Dr. R. Broom and his followers deem the Ictidosauria to be intermediate between the reptiles and mammals ? Because, although admitted by all to be reptiles, they exhibit in the skeleton some mammal-like characters. In this connection we must remember that the

reptiles now living are but a small remnant of a great class of animals which were far more diversified than mammals are ; some attained a length of 100 feet ; some were taller than a giraffe. Mammals seem to have been absent in most localities in which fossils of these reptiles have been found ; they took the place of mammals, and had many of their habits. To facilitate the seizing and devouring of large quarry, the teeth of some, like those of most mammals, were differentiated into incisors, canines and molars, and, to give them the necessary agility, the legs, instead of being asplay in the standing posture as in most reptiles, were vertical, as in mammals, so that the body of the animal when standing was raised well above the ground. These mammal-like reptiles exhibit so much diversity that they are divided up into several orders and sub-orders. It is among these that evolutionists seek for ancestors of mammals. They are collectively known as the Theromorpha or Anomodontia, or Therapsida. Dr. Broom writes of them (*The Mammal-like Reptiles of South Africa and the Origin of Mammals* (1932), p. 330) : " In considering the various orders and sub-orders of the mammal-like reptiles it will be observed that we have a most varied assemblage of animals, from little forms as small as a mouse to others larger than a rhinoceros. The differences in structure are greater than those found among mammals, and if we only knew mammals by their bones we might readily have classified them as forming two orders and a number of sub-orders of the Therapsida."

This passage shows, first, how little information the fossils give about the soft parts of animals, and, secondly, that there is plenty of fossil material from which to select the reptile from which mammals are supposed to be derived. Despite this, no one dares to name any of these mammal-like fossils as the ancestor of the mammals.

The best the transformist can do is to name the group from which he thinks the mammals are derived. The order most in favour is that having the teeth most like those of mammals—the Theriodontia. Of the families that compose this order, Dr. Broom and his followers consider the Ictidosauria the most mammal-like, and they assert that one of these must have given rise to the mammals. Broom's reasons for this belief are briefly : the quadrate bone is small, and in the lower jaw the dentary is very large and occupies three-quarters of the jaw, the other bones of the jaw being small and lying in a groove of

the dentary. This is what he has to say about the supposed conversion of an Ictidosaurian into a mammal (*Op. cit.*, p. 315): "The changes that converted them or one of them into a mammal may have been a change of diet. The snapping jaw had to be converted into a masticatory jaw, and as the quadrate became more or less fixed to the squamosal (*i.e.*, the bone in the skull on which the quadrate articulates), it kept with it the articular and other little bones of the jaw, and the dentary became comparatively free and formed a new hinge with the squamosal. The small bones, no longer moving with the jaw, became modified as parts of the auditory apparatus. . . . The changes by which the articular became the malleus, and the angular became the tympanic (the bone encircling the ear to which the ear drum is attached in mammals), in my opinion originated after the small bones had left the jaw, and can be fairly easily imagined."

In less technical language, some reptile is supposed to have scrapped the original hinge of its lower jaw and replaced it by a new one attached to another bone. Then five of the bones of the lower jaw are supposed to have broken away from the biggest bone. The jaw bone to which the hinge was originally attached is supposed, after being set free, to have forced its way into the middle part of the ear, dragging with it three of the lower jaw bones, which, with the quadrate and the reptilian middle-ear bone, formed themselves into a completely new outfit. The rest of the lower jaw bones, having no work to do, vanished! While all this was in progress a complicated structure—the Organ of Corti, peculiar to mammals and their essential organ of hearing—developed in the inner ear. This organ comprises, *inter alia*, some 3,000 arches placed side by side so as to form a tunnel. Dr. Broom does not suggest how this organ arose, nor does he say how the incipient mammals contrived to eat while the jaw was being re-hinged, or to hear while the middle and inner ears were being reconstructed.

The above changes appertain only to the skeleton of the head, and are insignificant in comparison with those that must take place in blood system, digestive tube, breathing apparatus and body covering before the reptile can become a mammal.

Verily, as Mr. Field remarks, "the evidential standards of modern evolutionist science represent probably the lowest point in intellectual degeneration reached by civilised man in the past two thousand years."

## WRITTEN COMMUNICATION.

Dr. ARTHUR P. KELLEY, M.A., Ph.D. wrote: I think Mr. Dewar's contention is justified that there can be no scarcity of fossilised animals which existed in great numbers, such as the skunk, but it could be argued that the critical species proving evolution, the missing links, might have existed in such few numbers that none chanced to be fossilised. Then, how can we be sure that a given species, even though represented by a great many individuals, is sure to be preserved in the rocks in numbers?

## AUTHOR'S REPLY.

Some zoologists take the line suggested by Dr. Kelley. Thus Cuénot contends (*L'Adaptation*, p. 371) that the lack of fossils linking the various groups of animals leads us to conclude that the forms connecting the great groups have all been *very localised*, *composed of very few individuals* having unspecialised organs; since these had not an extensive range they found it difficult to exist, and when they had given birth to the ancestors of the great groups these ancestral forms were rapidly eliminated.

The following considerations expose the weakness of this argument:

1. We are confronted by not a score or so of "missing links" but of thousands—whole chains of links. We know of more than 3,000 families of animals, living and extinct, having shells or skeletons, each of which the transformists believe to be derived from a different family; all the members of each of these families are thus supposed to be descended from a single ancestor, from a genus that gave birth to a family.

2. We know thousands of genera which have persisted through several geological periods—many existing genera lived in the Palæozoic period, and none of these have thrown off varieties which gave rise to new families.

3. The geological record shows that many short-lived genera have left abundant fossil remains. Consider the Equidæ, the horse family. This appears suddenly in the Eocene period in the form of four genera and about a score of species. Since then 20 new genera and about 250 new species have appeared, all of which, except the genus *Equus*, are extinct. These short-lived genera have yielded a

vast number of fossils, tens of thousands of which are exhibited in our museums. Although the fossils known to us of the genus *Eohippus* are confined to North America and the early part of the Eocene period, this genus has left in the rocks fossils of 13 species. We have found fossils of 45 species of the living genus *Equus*, the earliest of which occurs in the Pliocene period. It is true that horses are more readily fossilised than are most mammals, but we have found fossils of 30 species of *Elephas* (elephant) which does not appear until the end of the Pliocene period, while the monkey genus *Macacus*, although arboreal, has yielded fossils of more than a dozen species.

Thus, these supposed ancestors of families of which no fossils have been found must, one and all, have been endowed with two peculiarities: that of producing ancestors of new families, and that of possessing shells or skeletons composed of materials so transient as to have become decomposed very shortly after burial!

As I have taken the horse family as an example, let me say that the various pedigrees set forth in text-books purporting to derive *Equus* from *Eohippus* are examples of wishful thinking. None of the known thousands of fossils of three-toed horses seems to be ancestral to the one-toed *Equus*. Transformists have to try to find an ancestor for this animal. Mivart, Nicholson, Lydekker, Schmidt and Cuénot cite *Hipparion* as the ancestor: T. H. Huxley, Wallace, Marsh and Arambourg favour *Pliohippus*: H. G. Wells, J. Huxley and W. D. Matthew plump for *Plesiohippus*, while the more cautious J. A. S. Watson is of opinion that the one-toed horse of to-day is derived from some ancestor of which a fossil has yet to be discovered!

Dr. Kelley asks: How can we be sure that a given species, even though represented by a great many individuals, is sure to be found in the rocks in numbers? The answer is: the evidence is that the majority of animals having hard parts leave fossil remains; nevertheless we cannot be sure that any given species will leave such remains, but we are sure that of a hundred species, taken at random, a considerable proportion will do so. The absence of fossils of all these supposed ancestors makes it certain that such ancestors never existed.

War conditions having rendered it impracticable to hold an Ordinary Meeting on January 26th, 1942, the Paper for that date was circulated to subscribers and is here published, together with the written discussion elicited.

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*LET THERE BE LIGHT : A COMPARISON OF GENESIS  
i, 3-5, AND JOHN i, WITH ROOT-MEANINGS OF  
CERTAIN VERY ANCIENT WORDS.*

By A. COWPER FIELD, Esq.

**I**N the account of the Creation with which the Old Testament opens, we read (Gen. i, 3-5): "God said, Let there be Light: and there was Light. And God saw the Light, that it was good: and God divided the Light from the darkness. And God called the light day, and the darkness He called night. And there was evening and there was morning, one day" (thus our 1611 version, as revised 1885).

And St. John's Gospel commences, "In the beginning was the Word, and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made by Him, and without Him was not anything made that hath been made. In Him was life, and the life was the Light of men. And the Light shineth in the darkness; and the darkness apprehended it not" (the 1611 version, as revised 1881).

Clearly, these two passages are complementary to each other; in some way mutually explanatory. The purpose of this Paper is an attempt in some degree to elucidate the underlying connection between them, and for this purpose first making use of other references to "light" and "the Light" in Holy Scripture, and then adducing certain facts, ideas and implications gathered from the study of archæology, and from much delving into the scanty remains (all too scanty, one must regretfully admit) of the oldest records of human speech now available.

And we are further handicapped in our comparative study of these passages by the difficulties inherent in any attempt to translate words so pregnant with *underlying* conceptions and

mental associations of ideas from one language into another (since it is often not possible, in faithfully rendering the general sense of a passage, to avoid the use of words separately possessing a very different underlying suggestiveness or involving quite other mental associations); (2) by the fact that we are considering passages originally written in two such widely diverse tongues as the early Semitic of Genesis and New Testament Greek; and (3) by the equally evident fact that St. John's Gospel was dictated in Aramaic (or some dialect of Galilean, or Semitic, thought), and written down in the nearest equivalent Greek words, though frequently with a usage or sense not customary to an ordinary Greek person expressing normal Greek ideas in his own mother-tongue. Of this difference in usage the passage before us is a good example, and we have the frequent use of such words as *φῶς* (light), *σὰρξ* (flesh, meat), *Βάπτισιῶ* (dip, wash), and many others in senses for which no Greek would ever spontaneously have used them. In this passage, the word *λόγος* cannot possess its usual Greek meaning—a word or discourse of human speech, “God is Spirit,” not needing physical organs like created beings to give utterance to thought; so “the Word” here must surely indicate the Mind, Will, or Purpose of God, or the Means used to give effect thereto.<sup>1</sup> There is an ancient tradition, handed down amongst certain devout Jews, reverent students of the Old Testament, and deeply versed in their “traditional readings” of the Pentateuch scriptures, to the effect that “the coming of Light into activity (Gen. i, 3) marks or indicates (though it does not say) the first coming into active relation with the earth and all therein of JHVH,” *i.e.*, of that “aspect,” relation or manifestation (or, as we Christians would say, “Person”) of God made known later as Jehovah. Many references in the Old Testament support this reading, and testify that the *operations* of creation were effected by the JHVH-aspect (or “Person”) of the Supreme Godhead (Elohim). Indeed, it is so stated at the close of the creation-narrative itself (Gen. ii, 4–7), and re-iterated in verses 9, 19, iii, 1, etc., etc.<sup>2</sup> See also such

<sup>1</sup> *Λόγος* covers many meanings besides mind, word or speech, such as a saying or “slogan,” the sentence of a Court, the teaching or doctrine of a “school,” the oration of a speaker, etc. As has been well said, *λόγος*, as used of God, means His Mind, uttered or expressed to man as His Word, or in words of human speech (*cf.* Prov. iii, 19; iv, 18; viii, 22–31).

<sup>2</sup> Throughout these two chapters, wherever JHVH Elohim (LORD God) occurs, JHVH is the “dominant noun,” and Elohim is added in a complementary, almost adjectival, sense. Later it is usually omitted, though often implied.

references as Gen. vi, 6-7 ; Job xii, 9-19 ; Psalm viii, xxxiii, 6-9, etc.

That this ancient understanding of a veiled meaning in the "Light" here mentioned is in full accord with the opening five verses of St. John's Gospel will, I think, be immediately apparent to all Bible students familiar with the constant use of simple, everyday words to convey ideas and conceptions of profound truths and teaching which they—or any human words, for that matter—most certainly do not actually or adequately express. Indeed, most of us are so familiar with the *inner* meaning of many a passage of Scripture that we scarcely notice how very different this often is from what the words actually say.

And the Apostle then proceeds (verse 6) : " There came a man, sent from God, whose name was John. The same came for witness, that he might bear witness of the Light. There was the true Light, which lighteth every man, coming into the world. He was in the world, and the world was made by Him," thus further confirming the ancient significance understood of the "Light" of creation (Gen. i, 3). And, further, in verses 14-16 we read : " And the Word became flesh, and dwelt amongst us (and we beheld His glory, glory as of the only begotten from the Father), full of grace and truth. John beareth witness of Him, and cryeth, saying, This was He of Whom I said, He that cometh after me is become before me : for He was before me. For of His fulness we all received, and grace for grace." " Fulness " and " Grace " ; a " Presence abundant in blessing," the very character or nature of JHVH, revealed in the Old Testament, and as more fully made known by Our Lord during His ministry on earth. " But as many as received Him, to them gave He the right to become children of God, even to them that believe on His Name." " His Name," *i.e.*, the very nature of His Being, JHVH, the Divine Presence abundant in Blessing ! And that St. John had full warrant for all that he here says of the Light of the world (in *every* real sense) we can learn by studying Our Lord's own statements : in John iii, 16-21, He speaks of Himself as " the Light come into the world " ; in viii, 12, He says " I am the Light of the world " ; in xii, 35, He answers the questioning of the crowd by saying " Yet a little while is the Light among you " ; and in verse 46, " I am come, Light into the world, that whosoever believeth on Me may not abide in the darkness," etc.



It is unfortunate that our translators have not sometimes been very happy in their dealing with the article in Greek, especially when the passage clearly indicates Semitic speech or dictation, in which language the article is often used very differently.

So far we have considered the accord of the "Light" of Gen. i and the "Light" of John i in the absolute or *real* sense, *i.e.*, the creative Light of St. John (i, 9-10) as the Cause of the light of Gen. i, 3-5: let us now examine how far a study of the fragmentary recorded remains of *very* ancient speech, roots, and word-forming elements will assist us to understand Gen. i, 3, as a record of external phenomena, *i.e.*, things or happenings resulting from the Will, Mind, or Purpose of God, expressed through and effected by the activity of JHVH, whom we term the Christ, the "Word" of John i. It is, of course, quite evident that the words "light," "darkness," "day," "night," "evening," "morning," cannot possibly, in *this* passage, the first "day" or stage of creative action, signify what they have subsequently meant in all human experience as resulting from the presence or absence of solar illumination; since we read that the sun did not "give light upon the earth" until the *fourth* "day" or period of creative action, long ages later. What, then, are these words, whose later meaning is so familiar, intended to convey, as used in this passage? Before endeavouring to answer this question, we must digress somewhat to consider the speech of Israel at the time of the Exodus, *i.e.*, the vocabulary still preserved for us in the consonant-groups in which the Pentateuch has come down, since we cannot safely rely on the vowel-pointings, which were not added until long after the *original* Hebrew had ceased to be spoken in everyday intercourse, and were not finally revised until about the ninth or tenth century A.D., and then by learned Jews who, residing in different parts of Europe, and speaking widely-differing languages in their daily conversation, tended still further to confuse the exact sounds properly intended to be given to these vowel-points. And when we have tabulated the words used in each book of the Pentateuch separately, and in Joshua, and noted the close general uniformity in use and meaning of almost every word and phrase throughout Exodus, Leviticus, Numbers, Deuteronomy and Joshua (except for the slight change of style in Joshua and in the latter part of Deuteronomy attributable to him), we shall discern something very different in the book of Genesis, and especially in the earlier chapters. The language used by Jacob and his little band when

they went into Egypt was, almost certainly, a Semitic speech, its vocabulary consisting mainly of words closely akin to Assyrian, though probably also containing a good many words borrowed from the numerous colonies of Philistines (? Kretans), Hittites, Egyptians, Horites, and perhaps Elamites, among whose various settlements in Palestine they had travelled about ever since Abram's first arrival in the land, and with many of whom they had frequent converse, as we learn from Genesis. Of this earlier speech we have now no considerable passage on which we can confidently rely as belonging to this period.

The language of the Pentateuch consists partly of Semitic words probably in use in Palestine *before* the Sojourn, of many words borrowed from the Egyptian during the many centuries of that Sojourn; some, probably adopted early, showing considerable modification in sound and often some change in meaning; others, borrowed later—perhaps even shortly before the Exodus—showing little change in either; and a good many words, apparently of Semitic origin, in use in Egypt before Jacob's arrival there, and perhaps re-borrowed by the Israelites (during the Sojourn), with their sound and meanings as modified through long use by the Egyptians. A good many words in the Pentateuch vocabulary seem closely related both in sound and sense to Assyrian words on the one hand, and to Egyptian words on the other; but it is to be noted that many of these words are also used in the symbolic sense also possessed by the related Egyptian words, such symbolic meaning not having been observed in the use of the cognate Assyrian words, so far as I have been able to ascertain.

Every reader of the Bible is, of course, aware that the Israelites used many words in two senses—as, indeed, we do in English to-day: a familiar commonplace meaning, and also a symbolic or allegorical one. Nearly all the wealth of symbolism which we find in the Pentateuch is either derived from Egyptian use or is strongly tinged with Egyptian conceptions and/or implications acquired during the Sojourn.\* For the Egyptians, despite their enormous vocabulary, had long before developed a great range of such symbolic meanings in words commonly used for an everyday sense. The rather frequent failure by many

\* Of this, the works of Budge, Erman, Naville, Hall, Sayce and other writers on Egyptian temples, apparatus, worship, religious symbolism, etc., who have given us many translations of very ancient Egyptian hymns and religious writings, afford voluminous evidence, too copious to call for any elaboration in a short Paper.

Egyptologists to observe this when translating early Egyptian hymns and religious poems has often led to some really comic results.

In these early chapters of Genesis, however, we are dealing with a series of narratives, probably for the most part as set down by the various original recorders themselves concerned therein: "these are the records (our version says 'generations') of . . .," and edited long subsequently by Moses, who wove them into a consecutive series, evidently substituting, here and there, words which had become familiar during the Sojourn for others no longer readily understood. When closely analysed, these family records appear to show a slight progressive development, but of the same language.

In the creation narrative,\* especially, we seem to get back to a very primitive stage of Semitic speech, one strong indication being the frequent use of primary monosyllabic words in their elementary meanings, and another the very short abrupt sentences, for the most part containing only nouns and verbs, with scarcely any adjectives, adverbs, or other auxiliary words. The disyllables also have here usually their primitive meanings. Thus, of the words with which we are immediately concerned—light, darkness, day, night, evening, morning, represented by the consonants AWR, ChShK, YWM, LYL, ChRB, BKR, two seem to retain their primitive significance—AWR, light, luminosity, enlightenment; and YWM, occasion, action, time, period, age, when, day, the last being the meaning usually indicated in the subsequent books; LYL, here written, as usually elsewhere, LYLH, seems obviously to be originally a repetitive form of La or Lo (not, no, nothing), meaning absence of action, of anything, of activity, and therefore of light, hence signifying "night" (inaction).

The disyllables ChoSheK, GeReB, BoKar (I insert the most *probable* vowels to enable pronunciation) may be almost as early, since they indicate very primitive ideas. ChoSheK (darkness) seems akin to ChaShaH (to be silent) and to ChaTZah (to divide); darkness silently divides one day from another. GeReB (ChRB) is here rendered evening, and this is the meaning undoubtedly intended most often by this group of three consonants; but,

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\* The Semitic mentality appears not to conceive of anything material as existing prior to the "creation of the heavens and the earth," and the "making" of the "stars" at some stage not indicated; and when the stars were "created," i.e., first given some material substance, is nowhere even hinted at in the Bible.

when we realise that there are at least eight other words all, according to the dictionaries, expressed by these same three letters, possessing such widely different meanings as "surety," "mix," "sweet," "weave," "darken," "raven," "swarm," "willow," "Horeb," etc., and that the early meaning of Yohm (written YWM) indicated an action, effort, occasion, or "period of activity" rather than its more usual *later* meaning of "day," it seems probable that GeReB in this account means "weaving, planning, or initiating" something; a sense from which the later meanings of "woof" and "swarm" or "multiply" seem easily derived. BoKer is here rendered "morning," undoubtedly the usual meaning of this consonant-group from a very early date. Two other words, written in the same consonants, mean respectively "cattle" and "to search." But there was a very primitive verb "BoH," which we find used as early as Gen. vi, 3, to denote the end of a long period (of evil-doing), and again in xxviii, 11, of the sun's setting at the close of the day. And there is another primitive monosyllable "koh" or "kah," meaning "thus" or "so." Written conjoined so as to form the trilateral group favoured by the early scribes of the Pentateuch, this would give us "bo-kah," thus came to pass or thus concluded.\*

It is obvious that an evening and morning could *never* constitute "a day" to any normal human mind, not even if we include both and also the interval between them. From evening to morning might naturally express a *night*, but never a "day," whether thought of as a period of work or activity (the early sense of YWM), a period of daylight (YWM in its later sense), or as what we term a day of 24 hours. What, then, was this phrase "evening and morning day one" originally intended to express?

After considerable delving into the fragmentary records and indications of primitive "roots," monosyllable word-elements, and early meanings, I suggest the following as the most probable,

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\* Considerable light is thrown on the original meanings of these primary monosyllabic words and word-elements (probably long persisting with little change from the monosyllabic age of human speech) by a comparative analysis of numerous cognate words in the Chinese, Korean and Tibetan tongues. Unfortunately, however, the many dialectical variations in Chinese pronunciation render this "light" of little use as a reliable illuminant; rather is it a series of flickers or gleams, of varying degree. But the philological student, familiar with those tongues, finds in them a good deal that is still in accord with much in this Paper. See Edkins' "Evolution of Chinese Language" and "China's Place in Philology," and Karlgren's "Analytic Dictionary of Chinese," etc.

or perhaps the least improbable:—"there was planning (or initiation) and there was carrying-into-effect (or completion) stage-of-activity (or action) one." If the BKR of the present text has come to replace an original BKH it is not difficult to see how this may have come about.

We know that the letters of the present alphabet, adopted after the return from Babylon, differ greatly in form from those previously used, and this—and the fact of some of these new letters being very similar and easily mis-read—led to a few errors in the course of early re-copyings. These frequent re-copyings were rendered necessary by two facts: (1) the Books were written on prepared skins or "parchments" not always free from rough or soft patches and blemishes, and with a reed-pen dipped in a vegetable ink not always very permanent; and (2) the constant unrolling and re-rolling of these "rolls" of skin was liable to rub away some of the letters. It may well be that a scribe, reading YWM in the meaning most familiar to him as "day," and GeReB also in a frequent sense "evening," and reading the letters BKH as BKR—possibly the down-stroke of the  $\aleph$  had become rubbed or faded—and BKH occurs nowhere else in the Pentateuch (unless the verb thus spelt, "to mourn or weep" is derived from it (*see* Job xxxi, 38; xxviii, 11)), re-copied this consonant-group as representing the familiar BKR, evening, and thus presented us with the impossible statement that "evening," "morning," and "day" were distinguishable—and this is repeated twice—*before* (as we are subsequently told) the sun (or any other luminary) was "appointed" to occasion these phenomena! Nor can the period "evening-morning" *ever* have meant a "day" in normal human experience, as has been frequently pointed out.

Reverting now to the primitive meanings of AWR (light) and ChShK (darkness, silence), AWR is probably from the primitive monosyllable OR, source or beginning of anything: the primary root seems to have indicated activity of various kinds, rather than objectivity or "things."\* Thus AWR is sometimes used in the Pentateuch of the "dawn." The Assyrian URRu, light, illuminant, is probably close in sound and meaning to the word actually used by Abram and his descendants until they went into Egypt. There they would soon learn the Egyptian form, AUR, often used in a symbolic meaning, though I believe that

\* Cf. Latin or-igo, or-bis, or-do, or - 10, etc. Greek 'ὄρ-ετῶ, 'ὄρ-υυω, 'ὄρ-ω, etc.

such meanings as light, enlightenment (hence, the Light, or Light-giver) had long been implicit in the use of the word among Semitic tribes (*see* Job xxxiii, 30; iii, 20, etc.). And AUR does not only mean light in an objective or passive sense, but also as *giving* light, as in Gen. i, 15, etc., *i.e.*, an action or *activity*. Indeed, it seems to have been the only word then available to indicate any activity associated with light. As we now know, light is an "activity," "energy made visible," an emanation, radiation or power causing or closely associated with many phenomena quite beyond the narrow range of light-rays discernible by our eyes. Thus we speak of infra-red, or ultra-violet rays, of heat-rays, of the radiant action of magnetism, of electricity, of the change of "energy" into "matter," of the formation of ions, of protons, nucleons, atoms, etc. For *none* of these were distinctive words or accurate terms then known. Hence, however completely the original narrator may have understood, even in every detail, what was revealed to him of the *processes* of creational activity, he could only cover *all* these "activities" under the one all-embracing word then available to indicate such working—AUR (ohr), Light.\*

Much the same must be said of ChShK (darkness). The narrator is seeking to distinguish between the region where "creation" is taking place, activity of many kinds and forms, and where it is not, *i.e.*, the complete absence of activity. So he uses the most suitable word available to denote both (1) the absence of *any* activity (darkness or inaction, *see* Job iii, 4-5; xviii, 18, etc.) and "nothingness" (as in Job x, 21-22; xii, 22, etc.). He had no better word available. Many centuries later Our Lord uses much the same phrase, in Aramaic, to express the same Semitic idea, the absence of all effective activity, "cast forth into outer darkness," "cut off (Genesis says 'divided') from the light."† And if AUR and ChShK denote the two opposite

\* Even so much later as the commencement of "Hebrew," in the Pentateuch, we can find no word used to denote any process or activity analogous to, but distinguishable from, what is commonly termed "light." Nor have we any such word, apart from technical terms, in commonly-accepted use in English even to-day. See, for the wide comprehensiveness of these primitive "roots," the works of Bopp, Castren, Logan, Klaproth, Pinches, Max Müller, Edkins, Curtius, F. Muller, Boller, and many others.

† To the Semitic mentality, it would appear that "darkness" is conceived of as continuous, "the perpetual nothingness of outer space" as we might term it, the "outer darkness" of Matthew viii, 19; whilst "light" (or activity) is "separated" (marked off) from it. And the periods of (or for) activity "days" are similarly contrasted with "night," analogous to darkness, but "ruled" or moderated by the "lesser light," the moon.

conceptions of activity and its absence, we may expect that YWM and LYL (day and night) will indicate more defined stages or periods of creational activity, *i.e.*, actions (and their absence); YWM contrasted with intervals LYL.\*

And this would appear to be much the meaning which YWM-originally bore, a time or period of activity; in other words, "a job of work" or act (much as we now say "it's all in the day's work" or "it's part of my job" without measuring "day" or "job" by any precise period of time). And Our Lord thus uses "day" as primarily meaning time or opportunity for action or work (John ix, 4; vi, 5, etc.; Math. xx, 6, etc.).†

There are many other philological details which might be adduced as more or less relevant to our subject, but enough has been said to show that there is considerable ground for regarding the "light" of Gen. i, 3, as implying far more activity than merely the one *visible* result or form of such activity (perhaps even as also indicating "the Light" Who is the Source and Cause of *all* such activity), and "darkness" as denoting the absence of anything—"nothingness," absolute negation: whilst "day" denotes a period of creational activity or "action," and "night" its opposite—the state or region of "inaction." We should note that a "day" and a "night" are never associated as together forming a continuous period of time, what we term a day of 24 hours, and this is highly significant. Day always means daytime and daylight only.

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\* It has been suggested that present-day scientific opinion would not regard "darkness" as "nothingness." I nowhere suggest that it would, but that the early Semitic mind appears to have regarded them as closely analogous, if not indistinguishable. Or they *may* have used one general word to express two distinct ideas, as we often do in English to-day. We must not demand of this very ancient creation-narrative the precise terminology of a present-day scientific text-book; these, even now, contain three classes of statements: observed facts, proved deductions, and much (usually more or less speculative) theory; often without these being, respectively, made very readily distinguishable to the non-technical reader.

† OR (AWR) and YWM (YOM) may well be early differentiations from the same primary root, since R and M are often interchangeable in early speech, the primary general idea being activity or opportunity for action (of various kinds). *Cf.* our current phrase, "I must have daylight to do that," where we think of the proposed work as needing daylight, and of the daylight as enabling, giving opportunity, for it to be done. There are many derivatives from OR, actions or activities of many kinds (I have given only a few), whilst YWM is also employed in many senses, before becoming almost restricted to the meaning "day" in the sense of "daytime" or daylight, permitting work to be done, as opposed to night, when it cannot (John ix, 4).

To conclude this very incomplete Paper, I think we may safely sum up by saying that these opening verses of St. John's Gospel reveal the Divine Mind or Activity in the creation, of which the opening verses of Genesis record the manifestation in material results—the Spiritual as the Cause of the physical.

Surely Our Lord re-iterates and summarises *all* that is implied in the age-old Semitic conception of Light as also meaning activity—or work—when He says: "Let your light so shine before men that they may see your good works, and glorify your Father which is in heaven." I can add nothing to that! "Let there be Light."

#### WRITTEN COMMUNICATIONS.

Sir CHARLES MARSTON wrote: An instructive Essay. The only contribution I feel capable of making concerns the language used by Jacob and his sons, and the language and script of the Pentateuch.

The writer has omitted all reference to the Hyksos occupation of Egypt in the days of Jacob and to the evidence that these Hyksos were Arabs or Hebrews, as stated by Josephus.

A further important consideration is the evidence that the Habiru, who appear as mercenary soldiers in Babylonia and Assyria before the days of Abraham, were the Hebrews. This I understand is being pretty generally recognised. Their language would be primitive Hebrew such as was used in the alphabetical scripts found a few years ago at Ras Shamra in Syria—these date to just after the death of Moses.

Lastly—the Pentateuch would be written before the Captivity in the Phœnician Hebrew script which was found at Lachish. This may have been the script used by Moses. The Sinai Hebrew script, still earlier, appears to have been in existence before his time. Both these scripts were alphabetical ones. The Sinai Hebrew has not been entirely deciphered up to the present. It might have a very important bearing on the author's contentions.

Rev. Principal H. S. CURR wrote: I have enjoyed Mr. Cowper Field's paper with its reverent and meticulous investigation of the precise meaning which ought to be attached to words which may be accurately described as Biblical key-words. His interpretations are new to me, and all the more interesting and instructive on that



account. In making some comments on the conclusions reached in the paper, I have no desire to criticise Mr. Field's contentions, but rather to state some opinions which seem to me to be relevant to his subject, and well worthy of mention.

Thus some reference may appropriately be made to Genesis i, 3. (And God said, Let there be light : and there was light) as an outstanding example of sublime diction. It has been so regarded by rhetoricians for many centuries, not only in Hebrew, but in the English rendering as well. The poetry of the words will be more profoundly appreciated when it is remembered that in the Orient day begins as suddenly as night falls. The latter is like the fall of a vast pall or veil on the earth. The former is like the ignition of a gas jet, or the turning of an electric switch in the rapidity with which darkness flees away. These figures are admittedly exaggerated but they may be none the worse on that score as a means of elucidating what is meant. Thus the verse becomes a description of the first break of day, the rising of the curtain on universal history. To the devout mind God bids the light arise each morning, since the coming of day and night are recurring miracles which should never lose their power to stir our souls to wonder, love, and praise.

Science now recognises that light may be independent of the sun in the form of luminiferous ether, thus disposing of an old objection to the vision of creation in Genesis i, as it has been called, in view of the fact that sun, moon, and stars are not mentioned until the fourth day. As for these days, they must be regarded in the first instance as denoting periods of twenty-four hours since, to the Oriental, day begins in the evening and not, as with us, in the morning. It is a well-known fact that the Jewish Sabbath commences early on Friday evening, and terminates on the Saturday evening.

As for the meaning of these days, that septuary which forms the most wonderful week ever known with the possible exception of Passion Week, we must not rule out as utterly preposterous the theory that seven literal days are meant despite the prodigious difficulties with which such a hypothesis is hindered and handicapped. With God all things are possible. There is, of course, ample justification for taking these days as periods of creative activity. The elastic use of the word in the Bible gives ample warrant for such an

explanation. Thus the seven days are described as one day in Genesis ii, 4. (These are the generations of the heavens and of the earth when they were created, in the day that the Lord God made the heavens and the earth.) Gladstone's theory was that the days represent chapters in the story of creation, that period of time being chosen by the inspired writer under the guidance of the Holy Spirit as the simplest and easiest division of time, being far superior to a year for such a didactic purpose.

The Rabbinic theory, that in Genesis i, 3, we have the first reference in the Bible to the works of Jehovah, is interesting, although not very clear and obvious save in a mystical approach to the Old Testament. While it rejoices the heart of the true believer, it should be held in subordination to that grammatico-historical exegesis of Holy Writ on which the Reformers laid such stress. When students begin to depart from the sense of the words, dictated by their ordinary and common use, the door is opened to all manner of extravagances. Such a method, when employed by the evangelical scholar, yields nothing but good, but the same procedure, followed by other types of students, will result in perversions of what the Bible teaches.

Mr. Cowper Field has rendered useful service by calling attention to the close parallel between the opening verses in the Prologue to the Fourth Gospel, and the wonderful beginning of the Bible. To my thinking the two are complementary, the earlier deals with creation, and the latter with redemption. The light of Genesis is natural, that of John is spiritual, and the wonder and glory of the latter is that it furnishes such an impressive reminder that the ultimate source both of natural and spiritual light, the seen and unseen illumination, is the Eternal Word of God. Thus whenever a soul is saved, He speaks saying, Let there be light : and there is light. The same soul owes its existence to the same cause which enables it to be born again into the marvellous light and liberty of the gospel

Mr. W. H. MOLESWORTH wrote : Much in this paper is new to us, particularly that part relating to ancient Semitic thought and words, and here the author has exceptional knowledge.

The first verses of St. John's Gospel are founded on the opening verses of Genesis and have for centuries been called "The Genesis

of the New Testament," yet a connection has never before, so far as I am aware, been given.

Those who have studied and tried to understand verses 3-5 of this wonderful first chapter of the Bible, found both warning and guidance.

*Firstly.* Darkness, and physical light of which our sun is the source, are fully alluded to in verses 14-18, yet darkness and light are prominent in verses 3-5.

Why this gap between verses 5 and 14 ?

The author rightly explains that the early Semitic vocabulary was very small, and consequently a single word was then used to convey many different ideas and meanings, for which later there were distinctive terms ; the student finds abundant proof of this.

*Secondly.* The first few verses of John i relate back to the creation and here the language is figurative, whereas verses following relate to Our Lord's Ministry of Redemption and are in the literal.

Writers appear agreed that verses 4 and 5 of John i must be regarded as spiritual, and indeed there is every reason for believing St. John so intended. This tells us to look for spiritual revelation in Genesis i, 3-5 ; it further explains the reason of the gap between verses 5 and 14, for the Light (in verses 3-5) is not solar radiation, but the Infinite Power which flows from The Son of God and of which He (with His Father) is the Source.

*Thirdly.* Light, which is power or energy, is described as YOM in verse 5 ; how is YOM to be translated here ? We do not describe electricity as " month," how comes it that in our Bible YOM is translated " day," for Day is a time measure ?

Science holds that there is no such thing as time and that time and time measures have no meaning whatever apart from the brain of man.

It is therefore astonishing to find YOM translated " day " before man existed and therefore before time measures had any meaning ; also as the author points out before the sun had been appointed to make distinguishable either day, night, evening or morning. We learn from this paper *Yom* had other meanings than " day " in these early times, namely act, activity and so on.

Such words as action, activity, energy, etc., certainly supply a relationship between Light and YOM, but St. John points to the

spiritual significance of Divine Power (Light), using the word Life, which is akin to activity.

“ And Elohim called the Divine Power, Life.”

*Fourthly.* Another word, bearing on our subject, is worth mention :—

מִלְאָכְתוֹ (mlackto) Genesis ii, 2. Tregelles says the root of this noun is “ to send,” and the dictionary gives—mission, ministry and work. Our Bible translates it “ work,” and Driver, who objects to “ work ” suggests “ business.” “ Ministry ” is a very appropriate translation, particularly if Genesis i, 3-5, proclaims the commencement of Christ’s Ministry of Creation and Genesis ii, 1-3, proclaims the completion of this ministry.

From these considerations certain inferences may be drawn. Since St. John represents “ Divine Power ” by the word Light, it is logical to conclude that spiritual “ darkness ” is power of an opposite character, *i.e.*, an evil and malevolent power. Also, since St. John gives these spiritual meanings to Light and Darkness (words obviously taken from Genesis i) they are the true meanings of Light and Darkness in Genesis i, 3-5.

If these assumptions are correct we learn why God divided or separated Light and Darkness (verse 4), namely, that Satan was hostile to God’s plans of creation from their very inception ; hence separation to prevent the Rulers of Darkness from marring or frustrating His creative work.

Mr. Field substitutes “ action ” for day and “ inaction ” for night ; it may well be that this inaction was due to separation, and that Darkness, always a hostile force, was rendered potential or inactive during Creation, *i.e.*, whilst Divine Power was in action.

This paper is a thoughtful attempt to restore knowledge of revealed truth, which must have been commonplace 2,000 years ago. It is well to remember that despite the fact that Genesis i was probably in writing or engraved upon stone over 5,000 years ago, and has since passed through transcription, translation, changes in thought and language, it is still, with the exception of a few words, clear and unmistakable to readers of all nations, learned or unlearned.

MR. LESLIE I. MOSER wrote : I write to thank Mr. A. Cowper Field very much indeed for his learned and illuminating paper on Light.

I have always felt and said that we need further light on much of Scripture. We do not perceive the "underlying conceptions" the language is intended to convey. Not only the language, but I think it applies also to much of the narrative.

#### AUTHOR'S REPLY.

With Rev. Principal H. S. CURR's very encouraging observations I would like to associate myself, and to thank him for them, especially for his last paragraph. As St. John says, "In Him was Life, and the life was the Light of men." Now life evinces energy and action, and so does light—which accords with the implication that the "light" of Genesis i, 3, indicates the energising activity of Him Who is the Light of the world and the Life of all.

I have also to thank Mr. L. I. Moser for his kindly comment. I fully agree that the "underlying conception," *i.e.*, what the words symbolise or suggest, rather than what they actually *say*, is often the true purpose of a passage, *e.g.*, when Our Lord said, "I am the Light of the world," He did *not* mean that He was the solar orb, although He was its Maker (see Psalm xxxiii, 6, etc.). It is a most interesting and instructive study to take certain Egyptian words and, having noted what these had sometimes symbolised to the religious Egyptian, then to trace the same words (Hebraicised, of course) where these are used symbolically in the Pentateuch, and note the deeper, more spiritual significance therein (developed from the Egyptian usage). For example, Egyptian *tcheser* or *tcheseru*, rock, also often means "foundation"; but the religious Egyptian sometimes understood it to symbolise or indicate "basis." In the Hebraicised form, *tzoor*, rock or foundation, often symbolises the basis or Source of all, the Great First Cause, *i.e.*, God himself (Deut. xxxii, 4, 15, 18, Psalm xxviii, 1, xlii, 9, Isaiah li, 1. Matt. vii, 25, xvi, 18, etc., culminating in St. Paul's final exposition, "that Rock was Christ"; 1 Cor. x, 4). There are many other examples.

With most of the suggestions expressed by Mr. W. H. Molesworth in his contribution to the discussion I have long been well acquainted; indeed, most of them can clearly be shown to be in full accord with many passages in both the Old and New Testaments. But the problem of *when*, *i.e.*, at what stage, Satan's opposition or hostility to God's purposes commenced is a matter which lies outside

the scope of my paper, and as to which I do not feel that the Scriptures afford us any clear guidance or enable one to form any definite opinion. I cannot discern any hint or suggestion of spiritual evil or Satanic opposition to God's purposes in creation in either of the passages with which I sought to deal in the paper. I must accordingly be excused from venturing to speculate on the problem.

Sir Charles Marston comments on my omission to refer to the Hyksos' occupation of Lower Egypt, and to the evidence that they were Arabs or Hebrews. I purposely did not introduce any reference to the Hyksos "invasion," as I could not discover sufficient really reliable evidence to satisfy me (1) the approximate date of this invasion, (2) how far it was really an extensive occupation of Egypt, and whether of the whole country or only of Lower Egypt, (3) or whether it was merely a transient domination by a powerful military clique (something like our Norman Conquest); nor yet (4) the extent of its effective influence on the Egyptian people, on their speech, their religious ideas and symbolism, their culture, social life and so forth. As to all this, very much still seems only vague and uncertain; and, as the limits of the paper did not permit the lengthy digression necessary to discuss these questions at all adequately, I felt a brief reference would be of little value. Nor do I consider that a detailed consideration of the possible influence of the Hyksos period is really very germane to the analysis of the very primitive words met with in the early chapters of Genesis in a form and sense indicating their use at least some eight to ten centuries before the Hyksos migration into Egypt.

As regards the exact forms of the letters used in the texts to which Sir C. Marston refers, the Ras Shamra, Lachish, or "Sinai Hebrew" scripts—I regret I have had no opportunity to study and compare facsimiles of these; I much wish I had. If their respective dates can be established with reasonable accuracy, or even approximately, this might prove of much value (1) as to a comparison of the spelling and meanings of certain words used by Semitic tribes who remained in Palestine with those of the same words as we find them used in the Pentateuch, and (2) as to the symbolism and mental association of ideas—especially of religious ideas—which these non-Israelite records may indicate. But I fear this might not, necessarily, be of much assistance in our effort to establish the *original* meanings of certain

monosyllabic words and of a few words compounded of two monosyllables which we find in the creation-narrative.

For it is my opinion (though I have not been able to find any real evidence to justify the use of a stronger term) that, in the first four chapters of Genesis (and, perhaps, in a few passages in Chapter 5/10), we can still trace the remains of original narratives, expressed in very primitive language, in which some of the original words were replaced occasionally as they became obsolete or no longer readily understood by later ones then in current use. It is impossible now to say how often or how many such replacements may have occurred (the latest appears to be due to Moses, when several Hebraicised Egyptian words, adopted during the Sojourn, were thus substituted for earlier ones presumably no longer in use); or when these narratives were first put into some written form of record, after—it may be—having been, earlier, carefully learned by heart and thus passed down from generation to generation, as is still the practice among unlettered races to this day. It is easy to call such transmission by word of mouth “mere folklore” or “tradition”; many of our present-day best attested historical documents, long since recorded in written form, were originally transmitted—sometimes for considerable periods—in much the same way. Archæological discovery and the careful examination of other contemporary records and evidence where such exist, together with a painstaking philological analysis of the records themselves, will usually afford a good deal of guidance; and often corroboration in a striking degree, sometimes even of minute points: and it is remarkable to how great an extent most of the Pentateuch has now been corroborated in this way. It must be evident to anyone who considers the matter that the original account of creation must be the result of revelation, for the very verbiage of the narrative in Genesis shows that it must have been in existence, closely in its present form, long before Israel went into Egypt. Yet not until quite a recent period could anyone have been possessed of sufficient knowledge of the studies we now include under Astronomy, Palæontology, Physiography, Botany, Zoology and Physics as to be able to devise an account of creation so substantially accurate as to so many facts, and even in such detail, as we find in Genesis—and this is putting it at the very lowest!

## 845TH ORDINARY GENERAL MEETING.

HELD IN LIVINGSTONE HALL, LIVINGSTONE HOUSE,  
BROADWAY, S.W.1, ON MONDAY, MARCH 9TH, 1942,

AT 4.30 P.M.

SIR FREDERIC KENYON, K.C.B., D.LITT., LL.D., IN THE  
CHAIR.

The Minutes of the previous meeting were read, confirmed and signed.

The CHAIRMAN then called on Herbert Owen, Esq., to read his paper entitled "The Enigma of Darius the Mede."

Owing to the lateness of the hour, the Meeting was not thrown open to discussion, but those present who wished to take part in the discussion were asked to send in their remarks in writing.

Written communications were received from Sir Frederic Kenyon, Mr. E. B. W. Chappelow, Rev. Principal H. S. Curr, Mr. C. C. Ogilvy van Lennep and Major H. B. Clarke.

The following elections have been made:—Lt.-Col. A. N. Skinner, M.V.O., a Fellow; E. W. J. Battersby, Esq., a Member; B. M. Wheatley, Esq., an Associate; Rev. L. L. Morris, B.Sc., Th.L., a Member; A. Hanton, Esq., M.B., Ch.B., a Fellow; B. C. C. Holmes, Esq., a Member; N. B. Nellis, Esq., B.S., a Member; R. H. P. Clark, Esq., M.D., M.R.C.P., a Member; Prof. E. McCrady, Jr., B.A., M.S., Ph.D., a Member; J. S. Phillips, Esq., B.A., an Associate; Rev. M. J. Fuller, A.B., an Associate; G. W. Thomas, Esq., B.A., an Associate; F. H. Barber, Esq., an Associate; Conway A. Ross, Esq., a Fellow; Rev. Ralph G. Turnbull, M.A., B.D., F.R.G.S., a Fellow; Constructor-Lieut. W. G. Spanner, Esq., R.C.N.C., a Fellow; James McGavin, Esq., a Fellow; Henry Martin Cundy, Esq., M.A., Ph.D., a Life Member; Ewart A. Mobberley, Esq., B.Sc., A.M.Inst.C.E., a Member; Captain H. W. Uffelin, B.A., M.Th., a Fellow; Rev. E. W. Hadwen, B.D., a Fellow; W. A. Hill, Esq., F.S.I., L.R.I.B.A., a Member; G. K. Lowther, Esq., an Associate.

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### *THE ENIGMA OF DARIUS THE MEDE : A WAY TO ITS FINAL SOLUTION.*

By HERBERT OWEN, ESQ.

**T**HE time-honoured enigma of the identity of the "Darius the Mede" of the Book of Daniel has more than once been discussed by contributors of papers to the Victoria Institute, as well as by many commentators upon and critics



of the Book of Daniel, both in ancient and modern times. There has, however, been a lack of conclusiveness about all the various solutions which have, up to the present, been proposed. The ensuing paper is a re-statement of the problem, and embodies suggestions as to the manner in which it may be hoped that a finality of results may be secured.

The importance of the subject scarcely needs emphasis. Inasmuch as the great "Seventy Weeks" prophecy of Daniel ix as to the First Coming of Christ is dated by the first year of this king, it may be said that the problem is, apart from purely spiritual convictions, one of the main criteria by which the truth of the Christian religion is to be proved and established. The prophet Micah (v, 2) foretold that it was out of Bethlehem Ephratah that the ruler of Israel "whose goings forth *have been* from of old, from everlasting," should come forth. Various events and phases of our Lord's life and ministry were foreshadowed by other prophets and Biblical writers in strikingly verifiable terms. But it is in the Book of Daniel alone that we find a categorical statement that after a certain period of time "Messiah the Prince" would appear, and it is no doubt this passage in Daniel ix, 25, which gave rise to the belief referred to by Suetonius (*Vespasian*, IV) and Tacitus (*History*, V, 13, 3) as having long "prevailed through all the East, that it was fated for the empire of the world, *at that time*, to devolve upon some who should go forth from Judæa," etc. The striking correspondence between the statement in *Daniel* and the actual period in "weeks of years" which elapsed between the going forth of a "commandment to restore and to build Jerusalem" in the reign of Artaxerxes I,\* and the crucifixion of Christ in A.D. 29 or 30, shows that these anticipations were in all probability based upon that book. This subject cannot, of course, be gone into fully at this time and place; suffice it to say that modern adjustments of chronology, facilitated by the discovery of numerous cuneiform tablets which make it possible to ascertain accurately the lengths of the reigns of the Persian kings, combined with the mention of eclipses by classical authors in connection with historical events whose dates are otherwise satisfactorily established, have confirmed to a remarkable degree the synchronisation of the predicted and the historical periods.

The Seventy Weeks prophecy is, then, dated by the reign of this mysterious king, "Darius the Mede." Chapter ix of the

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\* Cf. *Ezra* vii.

Book of Daniel opens with these words : " In the first year of Darius, the son of Ahasuerus, of the seed of the Medes, which was made king over the realm of the Chaldeans. In the first year of his reign I Daniel understood," etc. It is a point particularly to be borne in mind that we read of no other year of his reign. According to the Jewish method of dating events, the " 1st year " of a king ran from the date of his actual accession until the next New Year's Day,\* which was in March or April by our reckoning. When did " Darius " accede ? Chapter v, verses 30 and 31, tells us that " In that night was Belshazzar the king of the Chaldeans slain. And Darius the Median took the kingdom, *being* about threescore and two years old." Chapter vi immediately goes on to tell of what happened immediately upon the change of rulers. That is to say, that Darius set over the kingdom a hundred and twenty princes, satraps or governors, and over these three presidents, of whom Daniel was first. Then comes the " den of lions " incident, led to by jealousy of Daniel among the other rulers caused by this preference. After this we are merely told (v. 28) : " So this Daniel prospered in the reign of Darius, and in the reign of Cyrus the Persian." " Darius," then, was a ruler who reigned between the rulership of Belshazzar and that of Cyrus the Persian, or possibly the reigns of " Darius " and Cyrus might have been concurrent. The only other mention of " Darius " is in the first verse of chapter xi, where the angel, or " man " (as he is designated in chapter ix, 21), Gabriel, says : " Also I in the first year of Darius the Mede, even I, stood to confirm and strengthen him." It is to be noted, however, that in the Greek version of *Daniel* which has, since about the second century A.D., been included in the Greek translation of the Bible known as the Septuagint (LXX), the version of Theodotion, the name of Cyrus appears in this place (chapter xi) instead of that of " Darius." In the older Greek version, however, which was considered too different from the Hebrew-Aramaic version to be satisfactory for general reading, having been much enlarged and corrupted by additions and alternative readings in copying from MS. to MS., we also find " Cyrus," not " Darius."

We have little space to discuss the meaning of this appearance in some versions in chapter xi, 1, of " Cyrus " in place of

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\* See the Talmud Tractate entitled *Rosh Hashanah*—" the Head," or beginning, " of the Year."

“Darius.” We may suggest, however, that a certain amount of similarity of the names as written in certain scripts may have originated the change, after which the fact that the date might be the same whichever of the names were used could have prevented its alteration or possibly confirmed it. For if, as seems certain, the period during which “Darius” reigned was afterwards regarded as part of the reign of Cyrus (for the reign of Cyrus was later reckoned as beginning with the Fall of Babylon), the first year of “Darius the Mede” and the first year of Cyrus would mean the same thing.

There is also a feature in the Old Septuagint Version of Daniel ix, 1, which perhaps ought to be mentioned. Instead of simply “In the first year of Darius” as in the Hebrew and in Theodotion’s Greek version, we have here the additional word *ἐπι*, which gives the sense: “In the first year, *in the time of* Darius,” which might mean: “In the first year (that is to say, of Cyrus, understood), while Darius was in power.” Or, as it was translated into Syriac from the Old Greek Septuagint Version,\* “In the first year in the days of Darius.” This would, of course, go to show that “Darius” did rule in the early part of the first year usually attributed to Cyrus. If some such intention of explaining the mention of Darius was not in the mind of the translator, then why should this extra word have been added? We shall see the importance of this when we are endeavouring to make the actual identification.

A still more important variation, however, in the Old Septuagint Version is the appearance in it of the name “Artaxerxes” in place of “Darius,” in chapter v, 31. The Greek here gives the reading: “And Artaxerxes of the Medes received the kingdom, and Darius, full of days and glorious in old age.” These words correspond with the “And Darius the Median took the kingdom, *being* about threescore and two years old,” of the Hebrew-Aramaic and Theodotion’s “Septuagint” version.

Now what can be the meaning of this extraordinary difference? A careless reader, unimpressed by the remembrance that, as Christians believe, the Holy Spirit has always watched over the integrity of the Scriptures, might at once adopt the conclusion

\* See Bugati’s edition of *Daniel* according to the Septuagint version, as translated into Syriac, usually called the Syro-Hexaplar version: *Daniel secundum editionem LXX Interpretum ex tetraplis desumptum. Ex codice Syro-Estrangelo Bibliothecæ Ambrosianæ Syriacæ edidit, etc.* Mediolani, 1788.

that the translator, being puzzled by the name "Darius" appearing in the Hebrew-Aramaic original, arbitrarily inserted "Artaxerxes" as a more probable (in his opinion) name. For those, however, who are prepared to consider the matter seriously, there are many considerations which militate against so hasty an assumption. For instance, "Artaxerxes" is an even less probable name for a ruler between Belshazzar and Cyrus than is "Darius." The first Artaxerxes of Persia did not reign until Xerxes had succeeded for twenty-one years the thirty-sixth year of Darius I, who, of course, followed Cambyses, the son of Cyrus. If it be supposed that the name was suggested by the mention in the later chapter (ix) of Ahasuerus as the father of "Darius," it may be said that while "Xerxes" is the same name as "Ahasuerus," the proposal of Artaxerxes I, son of Xerxes, as successor of Belshazzar does not meet the difficulty at all; in fact, it increases it, he being a much later king. The most that might be hazarded is, that the appearance of the name as written in the MS. being translated gave some colour to the reading "Artaxerxes" suggested by the name "Ahasuerus," or Xerxes, following it in another place.

This supposition that the name is a misreading is, indeed, supported by the fact that the remainder of the verse also differs. "Full of days and glorious in old age" appears where we read "*being* about threescore and two years old" in the Hebrew-Aramaic Version and Theodotion. As to this, Dr. Charles, in his *Commentary on the Book of Daniel* (p. 148), marks the words "*being* about threescore and two years old" as "corrupt." He says: "As far back as the eleventh century of our era these words have been a serious difficulty to Jewish scholars (Rashi, etc.), since they imply that the father of Darius must have been a contemporary of Nebuchadnezzar when he plundered the temple. Besides, the mention of the exact age of Darius is without a parallel in the rest of the book. Further, these words do not appear in the LXX, which in their stead reads" (as before stated). Other commentators, also, have pointed out that the age of "Darius" is mentioned without any apparent reason, which is somewhat remarkable in so succinct a narrative where no other words appear to be wasted.

The state of the earliest MSS. in respect to this verse may, then, be briefly put as follows: There is a corruption in the Old Septuagint Version of *Daniel* in that the name "Artaxerxes" appears instead of "Darius." After the words "And Artaxerxes

“Old Hebrew” Lettering.  
(About 590 B.C.)

אגברו

בנבוי

אשתמגו

ארתחשש

ארתחשש

ארתחשש

ארתחשש

“Aramaean” Lettering.  
(Elephantine Papyri, 459 B.C.)

UGBARU.

אגברו

CAMBYSES.

בנבוי

CYAXARES.

(“UMAKUISHTAR.”)

אשתמגו

ASTYAGES.

(“ISTUMEGU.”)

אשתמגו

ARTAXERXES.

(“ARTAKHSHASASH.”)

ארתחשש

(or “ARTAKHSHASTA.”)

ארתחשש

DARIUS THE MEDIAN.

דריוש מדיא

אגברו

בנבוי

אשתמגו

אשתמגו

(Elephantine Papyri.)

ארתחשש

(Ezra vii, 1, etc.)

ארתחשש

(Daniel v, 31.)

ארתחשש

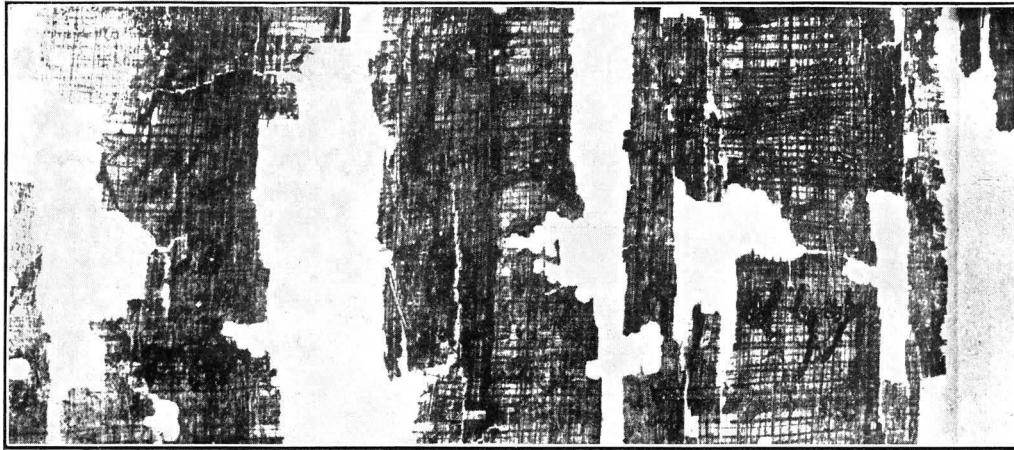


PLATE I.

(PART OF PAPYRUS NO. P.62 DISCOVERED AT ELEPHANTINE (ASSOUAN), EGYPT. FROM SACHAU'S PLATE 55, LINE 12 AND ADJACENT. THE PAPYRUS IS A FRAGMENT OF AN ARAMAIC VERSION OF DARIUS I.'S INSCRIPTION ON THE ROCK AT BEHISTUN, PERSIA. ON THE RIGHT-HAND SIDE OF THE ABOVE, NOT QUITE HALF-WAY DOWN, IS BELIEVED TO BE THE NAME "GUBARUA SON OF MARDUNIYA," WHO HELPED DARIUS I. TO THE THRONE OF PERSIA.)

of the Medes received the kingdom," we read "and Darius full of days and glorious in old age" instead of the clause giving the age.

The fact that the name "Darius" also appears in the Old Septuagint, preceded by the conjunction "and," does not necessarily mean that there were two rulers who "received the kingdom" at this time; but this device of using the conjunction is commonly met with in the MSS. to indicate an "alternative reading" or "doublet." Before the invention of printing, brevity was much more necessary in the reproduction of literary matter. Instead of a footnote, or marginal note, this method was frequently used and generally understood by the readers of ancient and more modern times. A number of examples are given in the Introduction to Dr. S. R. Driver's *Notes on the Hebrew of the Books of Samuel*.<sup>\*</sup> These double renderings ("doublets"), he says, in the Greek "are frequently connected by *καί*" ("and"). To apply this teaching to our own particular case, the doubly-rendered passage itself begins with "And," so it may be that the two alternative readings are merely placed one after the other. Thus "And Darius full of days" may be the doublet of "And Artaxerxes of the Medes," while "glorious in old age" may be a further alternative reading for "full of days." Dr. Driver gives one instance where a second translation is inserted, without marginal or other comment, "correcting the strange mistranslation of LXX" in the text out of its proper place. Thus we need not be surprised if "And Darius full of days" is inserted in the Old Greek translation, not immediately after "And Artaxerxes of the Medes," which it apparently represents, but after the words "received the kingdom," thus completing the full sense of the passage before the alternative reading of the first part is appended. Dr. Driver further remarks that these "doublets" are peculiarly characteristic of Lucian's recension of the Septuagint. "When Lucian found in his MSS. two divergent renderings of a passage, he systematically *combined* them, producing thereby what would be called in the terminology of New Testament criticism, 'conflate' readings." This, then, is what may have happened in this particular section of Greek translation.

To illustrate the difficulties translators and copyists had to contend with in the reproduction of ancient MSS., we may here

<sup>\*</sup> § 4, 1, The Septuagint. a, (a), "Examples of Double Renderings." (Eighteen instances are given.)

consult Plate I, which is a photograph of part of one of the Aramaic papyri discovered at Elephantine, on the extreme southern boundary of Egypt. Flimsy papyrus was, of course, the ordinary writing material in the pre-Christian centuries. It will be realised from the photograph how easily MSS. became discoloured, partly obliterated, or even perforated or broken, thus giving rise to the necessity of guessing at the original wording of certain passages, and the giving of alternative readings. According to Nestlé,\* it was not until after its introduction by King Eumenes II at Pergamum in the second century B.C. that parchment came into any considerable use as a writing material.

One further variation in the Old Greek Version should be mentioned before we pass on to the next part of our subject. In Daniel vi, 28, where the ordinary versions have: "So this Daniel prospered in the reign of Darius, and in the reign of Cyrus the Persian," the Old Septuagint has: "And king Darius was added to his race, and Daniel was set over the kingdom of Darius, and Cyrus the Persian received his kingdom."

Here, again, it is a matter for lively speculation as to how this wording was arrived at in the Old Septuagint. Here we must, for the sake of brevity, satisfy ourselves with the remark that here Daniel, already appointed as the "third" in the kingdom (v, 29, and vi, 3), is actually made to take over the kingdom at Darius' death, Cyrus also being said to receive his kingdom. Possibly it may merely indicate the hopeless condition of various MSS. that were copied from time to time, attempts at rational renderings leading to this reading; but the fact that such a rendering was possible goes to show that the "kingdom" which Darius had was regarded by these early translators as a temporary or subsidiary one, being capable, in fact, of being handed over to a high official such as Daniel, as a preliminary, perhaps, to being taken over formally by Cyrus himself. This being the case, it is easier for us to imagine an individual like "Ugbaru, the Governor of Gutium," mentioned in the Nabonidus Chronicle tablet† as

\* See his *Introduction to the Textual Criticism of the Greek New Testament*, p. 36, and Note a. Its manufacture was owing to the prohibition by Ptolemy Epiphanes, King of Egypt, of the export of papyrus to Asia Minor. The word "parchment" is derived from the name of the city, Pergamum (Pergamos), where its use was first encouraged.

† See Vol. XLVI of this *Journal* (1914), pp. 186ff., "The Latest Discoveries in Babylonia," by Dr. T. G. Pinches. The most up-to-date translation of the tablet is that by Mr. Sidney Smith, M.A., in his *Babylonian Historical Texts* (1924).



entering Babylon with the troops of Cyrus seventeen days before the entry of Cyrus himself, being temporarily regarded and named as a king by a Hebrew prophet in high office, such as Daniel is described as being in the book of Daniel.

The late Dr. T. G. Pinches, who first translated the Nabonidus Chronicle tablet, always regarded this "Ugbaru" and the "Gubaru" of line 20 of column III as one and the same person, identifying him, as the transliteration into Hebrew of the latter name certainly permits, with the Gobryas mentioned in the historical romance of Xenophon known as the *Cyropædia*, as well as with the "Darius the Mede" of *Daniel*.\* As to whether the "Ugbaru" and the "Gubaru" of the Nabonidus Chronicle actually are one and the same person has had doubt thrown upon it more recently by Mr. Sidney Smith, M.A., of the British Museum, who, in agreement with some other Assyriologists, reads line 22 of the Chronicle "Ugbaru died." This line had been taken by Dr. Pinches to mean that "Ugbaru," or Gobryas, "made an attack on some portion (? the citadel)" of Babylon which still stood out, as a result of which "the son of the king died."

"The son of the king" (line 23) had been originally read by Dr. Pinches as "the king," the sign preceding the word "king" being doubtful. Mr. Sidney Smith† says that the traces upon the tablet favour the translation: "the wife of the king died;" "the son of the king," which had been accepted by Dr. Pinches after it had been thus interpreted by Hagen, a German Assyriologist, being impossible. "The son of the king" was, of course, Belshazzar, and if the reading "wife" in line 23 is to be accepted as correct there is, of course, no reason why Belshazzar should not have been killed on the night when "Ugbaru, the Governor of Gutium, and the troops of Cyrus" first "entered Babylon without a battle" (line 15), that is to say, about twenty-five days earlier than the death of "Ugbaru," on the night of Marcheswan 11. The words previously translated, or rather "restored," as to the attack on Babylon, Mr. Smith reads as: "In the month of," *i.e.*, as the first part of a date of

\* See Dr. Pinches' paper in Vol. XLIX (1917) of this *Journal*, "From World Dominion to Subjection: the Story of the Fall of Nineveh and Babylon." p. 122.

† See Vol. XLVI of this *Journal* (1914), pp. 186ff., "The Latest Discoveries in Babylonia," by Dr. T. G. Pinches. The most up-to-date translation of the tablet is that by Mr. Sidney Smith, M.A., in his *Babylonian Historical Texts* (1924).

the king's wife's death. Also, there was no reason why Belshazzar's death should necessarily be mentioned in this extremely brief Chronicle, more especially as he is not described in that document as the king. On the other hand, the very fact that he is not there so regarded, but is described as the Chaldean king in the book of Daniel, helps us to understand why, in the latter book, an individual is referred to as "king Darius" who, like Belshazzar, may never have been looked upon generally as the official king. In the Nabonidus Chronicle, of course, although Nabonidus, the father of Belshazzar, is stated to have been secluded for several years in a palace built by him in the oasis of Tema, many miles out in the Arabian desert, he is constantly referred to as the king, as is the consistent custom in dating the many hundreds of cuneiform tablets of Nabonidus' reign. With the capture of Babylon on Cyrus' behalf the rulership of both Nabonidus and Belshazzar came to an end. For a high official, such as Daniel is represented as being in the book of Daniel, the question would immediately arise: "Who is now king?" and for one who had evidently regarded Belshazzar as such it would surely not seem unreasonable to date a rapid note of a remarkable psychological experience, a predictive prophecy revealed through the agency of a spirit or angel named Gabriel (Daniel ix, 21) during this critical interlude, by "the first year" of the ruler who was now, even if only for two or three weeks, actually exercising all the functions of a despotic eastern king. The term "military dictator" had not yet, of course, been invented. As to whether the exact wording of verse 1 of chapter ix of *Daniel* has come down to us uncorrupted as apart from the name "Darius" is too lengthy a subject to be entered upon here and now. We must satisfy ourselves with as near an approximation as possible to the probabilities, and say that if Daniel received the prophecy at this time, and did not date it by the reign of Cyrus, then he would do so by the name of the ruler who was undoubtedly exercising all the functions of government. The "Gubaru" of line 20, column III, of the Nabonidus Chronicle is there said to have "appointed governors in Babylon," which seems at the same time to identify him with the new ruler who, in Daniel vi, 1, is said to have "set over the kingdom an hundred and twenty princes," and to point to the possibility of his being the same person as the "Ugbaru" of lines 15 and 22.

Besides the identification of "Darius the Mede" with

“Ugbaru,” “Gubaru,” or Gobryas, so stoutly advocated by the late Dr. T. G. Pinches, strong cases have been made out in favour of Cyaxares, son of Astyages, a king of Media whom we meet with nowhere but in the pages of Xenophon’s *Cyropædia*, and of Cambyses, son of Cyrus. The first of these identifications will be familiar to readers of the *Journal of the Victoria Institute* through the able papers of the Rev. Andrew Craig Robinson, M.A.\* As apart from a decisive test such as I propose, the only strong objection to Cyaxares is that nowhere else, throughout the whole range of ancient literature and of archæological discovery, is such an individual alluded to. It was Istumegu, or “Astyages,” who was king of Media at the time of Cyrus’ rise to power in Medo-Persia according to the Nabonidus Chronicle, and also Herodotus, who says that Cyaxares was the name of Astyages’ father, who was the ally of Nabopolassar, the father of Nebuchadnezzar, in the destruction of Nineveh (612 B.C.). Another point which throws discredit upon the *Cyropædia* as being absolutely truthful to history is that Xenophon says that Gobryas gave his daughter in marriage to “Hystaspas,” whereas according to Herodotus,† the daughter of Gobryas was the wife of Darius the son of Hystaspes, and had borne him three sons before Darius came to the throne of Medo-Persia after the death of Cambyses, son of Cyrus. Perhaps the most striking variation from known history in the *Cyropædia*, however, is that Xenophon makes the father of Cyrus, Cambyses, to be alive at the taking of Babylon: in fact, Cyrus is said to obtain his father’s consent to his marriage with the daughter of Cyaxares after the settlement at Babylon: whereas in the Nabonidus Chronicle we read of Cambyses, son of Cyrus, already grown, taking a leading part in the New Year’s Day ceremonial next after that event.‡ In spite of the fact, therefore, that Xenophon truly represents the father of Cyrus as a king,§ a fact which is confirmed by the cuneiform inscriptions, whereas Herodotus and Ctesias describe him as a noble only, or even as of common rank, we must regard the *Cyropædia* as a real romance, and not to be trusted as exactly true in every particular.

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\* See *Journal of Transactions of the Victoria Institute*, Vol. XLVI (1914), p. 9f., and Vol. LIV (1922), p. 1f.

† VII, 2.

‡ Xenophon, *Cyropædia*, VIII, c. iv; v, 19 and 28. Nabonidus Chronicle (Smith), Col. III, lines 24–28.

§ Xenophon, as above, I. c. ii, 1; VIII, v, 22, etc

The identification with Cambyses, son of Cyrus, is advocated by the Rev. Chas. Boutflower, M.A., in his book, *In and Around the Book of Daniel*. It seems perfectly true from the cuneiform tablets that Cambyses was king of Babylon concurrently with his father, Cyrus, some tablets being dated in the first year, Cambyses king of Babylon, Cyrus king of Countries, for about nine months from the New Year's Day following Cyrus' conquest of Babylon. Cambyses, however, could not have been sixty-two years old at that time, as Darius the Mede is stated to have been in Daniel, v, 31. Mr. Boutflower shows that a very possible corruption in the MSS. would have been to read "62" for "12" in Hebrew notation. On the other hand, the Old Greek Version says that "Darius" was "full of days and glorious in old age," though it omits his exact age.

Dr. C. H. H. Wright, in his *Daniel and His Prophecies*, published in 1906, discusses the matter in some detail. He adjudges "considerable probability" to Dr. Pinches' conjecture that Gobryas was Darius. Professor H. H. Rowley, in his *Darius the Mede and the Four World Empires in the Book of Daniel*, published in 1935, gives a very complete account of the views of previous writers, but takes up the ultra-critical standpoint, and thinks that the most insuperable difficulty of the Gobryas theory consists in there being "no evidence that Gobryas bore the title of king." The distinguished archæologist Ernst Herzfeld seems to be of the opinion that "the satrap of a province" (which is what Gobryas, as Governor of Gutium, actually was in the Persian language) was, among the Medes and Persians, "a simple king," the supreme Median ruler having been entitled "great king, king of kings."\* This view would appear to render such an objection somewhat less forcible.

Professor R. P. Dougherty, of Yale, dealt exhaustively with the now extensive cuneiform and other material relating to Belshazzar in his comprehensive work, *Nabonidus and Belshazzar* (1929).

Dr. R. D. Wilson, of the Princeton Theological Seminary, in his *Studies in the Book of Daniel* (1917), gives many reasons why Gobryas, or "Ugbaru," appears to have been the original of "Darius the Mede."

Professor James A. Montgomery, in his volume on *Daniel* in the International Critical Commentary, sums up the work of

\* See *The Archæological History of Iran*, by Ernst E. Herzfeld, D.Phil. (1935), pp. 24 and 76.

these last writers by saying that they exhibit "the reaction toward recognition of a far greater amount of historical tradition in the book than the older criticism had allowed—a position maintained in this commentary."

Which, now, of these three individuals—"Ugbaru" (or "Gobryas"), Cambyses, or Cyaxares—can be the original of "Darius the Mede," or "Median"? In seeking the answer to our question we should not leave entirely out of account the "Astyages" of the Apocryphal book, *Bel and the Dragon*. Verse 1: "And king Astyages was gathered to his fathers, and Cyrus the Persian received his kingdom." Here we seem to have confirmation of the mis-reading or "corruption" theory. For Astyages was the name of a Median king, in Xenophon's *Cyropædia* father of the mysterious Cyaxares, and in Herodotus\* the son of the Cyaxares who, with Nabopolassar, father of Nebuchadnezzar, destroyed Nineveh in 612 B.C.† *Bel and the Dragon* says that Cyrus the Persian received his kingdom from him. Obviously, then, according to this Apocryphal book, this "Astyages" is the same person as "Darius the Mede" and the "Artaxerxes" of the Old Septuagint Version.

It will be noticed that both "Astyages" and "Artaxerxes" begin with the letter "A." In Hebrew or Aramaic they would also begin with "A," or "Aleph." Now, curiously enough, "Ugbaru," if written in Hebrew or Aramaic letters, would begin with the "Aleph," or "A." The tyro will say, "But 'Ugbaru' begins, not with 'A,' but with 'U.'" This is true, so far as English, or Latin, letters are concerned; but in Hebrew-Aramaic short "U" could only be written by the use of the "Aleph," or "closed," or "silent" aspirate (א). After the "Massoretic" period, say by about A.D. 600, the "short U" sound would be more fully expressed by the insertion of three dots in a small oblique line under the Aleph, thus, א̣, U. If "long U" could be inserted here, then another letter, Vav, ו, which answers for either "long U" or "long O" would be used; but here there is no question of this, as the syllable to be reproduced is "Ug-," and this, occurring at the *beginning* of a word written in Babylonian, Hebrew or Aramaic, would undoubtedly be pronounced with the "short U."

\* I, 46, 73, 107.

† See C. J. Gadd, M.A., *The Newly-Discovered Babylonian Chronicle* (British Museum Publication, 1923); and *The Fall of Nineveh*, reprinted from *Proceedings of the British Academy*, Vol. XI, 1923.

"Ugbaru," then, would be written אֲבָרָּוּ with "short U" at the beginning, and "long U" at the end, Hebrew being read from *right to left*, not from left to right.

"Cambyses" does not appear in the Bible, but in the Elephantine Papyri\* it is written כַּנְבוּזִי which is, of course, "Canbuzi," not "Cambuzi" as we should expect.

"Cyaxares" is a Greek form. The name is represented in the Persian cuneiform section of the Behistun Inscription† by "Uvakhshatra," which is rendered "Umakuishtar" in the Babylonian section. This would most probably be rendered in Hebrew or Aramaic letters וּמְכוּאֶשְׁתָּר.

"Astyages" would probably be written אֶשְׁתַּגֶּז or אֶשְׁתַּמְגוּ, "Istumegu," as it is spelt in Babylonian cuneiform in the "Nabonidus Chronicle" tablet.

"Artaxerxes" would, we presume, usually be written as we find it in the Book of Ezra (vii, 1): אֶרְתַּחֲשֶׁשְׁתָּא, "Artakhshasta," or אֶרְתַּחֲשֶׁשׁ, "Artakhshasash," as we find it in the Elephantine Papyri.‡

"Darius the Median," which represents the "Artaxerxes" of the Old Greek, is, on the other hand, written in the Hebrew Bible with the lettering דַּרְיוֹשׁ מֵדִיָּא.

Now it is absolutely impossible, in a very short time, or with inadequate space, to enter in detail into all the possibilities in regard to the writing of these names in the various types of lettering which existed from the time when we believe the prophet Daniel lived and the time when the completed Book of Daniel was first translated into Greek. It is, however, possible to glance over the most likely course of events, and to indicate the lines upon which some kind of result may be arrived at.

If we refer to the ninth chapter of Daniel, we see that this purports to be an account, related in the first person, of how the Seventy Weeks prediction was received. This prophecy, as we said at the outset, is actually dated in the First Year of Darius the son of Ahasuerus, of the seed of the Medes. We may therefore assume that the account was written down originally at that time, and can consequently date it at October (since it was after the 16th of Tisri, according to the Nabonidus Chronicle

\* See Sachau, *Aramäische Papyrus* (1911), pp. 15, 29 and 219. Plates I, 13; IV, 3, 5; LIX, 1, 6.

† See King and Thompson, *The Behistun Inscription of Darius I.*

‡ See A. H. Sayce and A. E. Cowley, *Aramaic Papyri Discovered at Assuan* (1906).

tablet), 539 B.C.\* Here, then, we have a point of actual origin for the mention of Darius, or whatever name was first written there. The corruption to Artaxerxes in the Old Septuagint, however, occurs in chapter v, 31, where the account, written in the third person, of the death of Belshazzar and the taking over of the kingdom by "Darius the Median" first appears in the order of the book.

Now whether both chapters were originally written by Daniel himself or not, the natural course of events would be for the "literary remains" of the prophet to be gathered together soon after his death, and for what seemed the most important of them to be retained at each time of copying. We can then suppose that someone like Ezra the scribe, who by Jewish tradition re-wrote, or re-edited, the Scriptures about the middle of the fifth century B.C., or say about eighty years after the fall of Babylon, would put the book containing the work of the prophet into order for copying together with the whole collection of Hebrew Scriptures, which then began to take the appearance of the modern Hebrew Bible. One or two books, such as Malachi and Ezra and Nehemiah, would have to be added later. But if *Daniel* actually did represent the life and writings of a Hebrew prophet of the Captivity period, it must have been in existence by that time. We have no time at present to discuss the detailed remarks of the critics, or as to how part of *Daniel* came to be written in Aramaic and part in Hebrew. We have before us the undeniable facts of our Lord's advent at the time indicated by the Seventy Weeks prophecy, and that both chapters ix and v of *Daniel*, one of which dated the prophecy by, and the other actually first introduces, the name Darius, were undoubtedly in existence before His time. Also that the corruption to "Artaxerxes" occurs in the oldest Greek translation of chapter v, and must be accounted for in some adequate fashion.

The writer has devoted much time to researches into the possibilities, and likelihoods, of this question for the last fifteen years or more. In the course of this time he has made a careful comparison of the names involved, written in all the various styles of handwriting which prevailed from the period of Daniel's early life down to the time of our Lord, by which time the Book of Daniel had long been recognised as one of the Jewish Scriptures. In Plate II a comparison is provided of these names as written

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\* Now definitely fixed, by astronomy and the tablets, as the year of the fall of Babylon to Cyrus.

in the characters of the Lachish Letters, the script used by the Jews just before the Captivity, and in the later "Aramæan" letters which the Jews adopted during the Captivity and afterwards developed into the Square Hebrew Alphabet. Those who examine this Plate carefully may be able to form some slight idea of the possibilities of mis-reading and corruption by later scribes, who can be supposed to have had no knowledge of the name "Ugbaru." When it is considered that there would be little evidence of the predictions in *Daniel* beginning to be fulfilled until the conquest of Persia by Alexander in 333-332 B.C.—two hundred years after the fall of Babylon to Persia—when public interest in the book might be expected to be aroused, it will be realised that there would be considerable scope for the perishing and decay of early MSS. and the partial obliteration of original documents, however carefully preserved.

But we cannot assume that the original of Daniel v-vi, or ix, was written exactly in either of these two scripts. There was as much difference between the handwriting of different scribes in those days as there is to-day in the handwriting of various individuals. Besides this, it is conceivable that the first note of the vision may have been written in cuneiform, in which we are told that Daniel was trained. Again, the material of the original may have been a clay tablet, an "ostrakon," or potsherd, or even a wooden tablet, as it is doubtful as to how far papyrus would be accessible in Babylon in those days. The writing materials much influenced the character of the handwriting. All this has had to be carefully examined and weighed. These researches have been placed into the form of a book, which it is hoped will be published shortly. Perhaps it may be permissible for me to add now that I have formed the opinion that the original corruption occurred soon after the conquest of Persia by Alexander of Macedon, when it would first appear that some of the predictions of the Book of Daniel were coming true\* and it would therefore be likely that copies of the then ancient MSS. would tend to be multiplied. "Artaxerxes" was first mis-read, with "Darius, 62 and a Median" as an alternative reading. These corruptions could only occur in copying from an early script, one perhaps intermediate between the two illustrated in Plate II. The other readings of the Old Septuagint—"full of days," and "glorious in old age"—could only have happened with a later script.

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\* Cf. Daniel vii, 6; viii, 20-22; xi, 2-4.



The general condition of the Old Septuagint Version, loaded as it is with additions to and slight divergences from the text of the Hebrew-Aramaic Version, helps us to understand how these corruptions have occurred and that they are indeed progressive, as well as to realise that even in the Hebrew-Aramaic the exact wording of the original may not always stand. It is a striking possibility that the very plurality of corruptions may point, by their comparison, in their original scripts, to the true wording of a lost scripture.

With approval of the Chairman two additional slides (not here reproduced) were then shown and explained, viz., a slide showing the author's identification of the name "Ugbaru" in the Aramaean lettering for the Old Greek Septuagint Version of Daniel v, 31 (vi, 1 in the Greek), with the general course of the corruption which resulted in the present reading of that Version, and another illustrating the late Professor Pinches' comparisons between "Ugbaru" in Aramaean lettering and "Dareios" in the Old Greek lettering, with some further comparisons between "Ugbaru" and "Gubaru" with "Darius" in cuneiform, 5th century B.C. Aramaic, and 2nd century B.C. "Maccabæan coin" characters.

These further explanations having exhausted the time, the meeting was closed with request for the comments of those present to be sent in writing and the following responded :—

#### WRITTEN DISCUSSIONS.

Sir FREDERIC KENYON (Chairman) wrote : The real gist of this paper lay, I think, in the two supplementary slides and the lecturer's explanation of them. I should like to congratulate him on his exceedingly ingenious palæographical argument, showing how the name Ugbaru could give rise to the various corruptions which eventually led to the names Artaxerxes and (through the medium of Greek written boustrophedon) Darius, and to the phrases "full of days and glorious in old age." At the same time I could not but feel that this does not go far towards solving the real problem of "Darius the Mede," which is to account for the interpolation of a ruler between Belshazzar and Cyrus with sufficient power and duration of rule to appoint new satraps over the whole empire and to disgrace and put

to death some at least of them after the failure of their plot against Daniel.

To refer to a few points of detail : I do not think the reference in the second paragraph of the paper to the " Seventy Weeks " prophecy is really relevant to the lecturer's argument, and it contains some inaccuracies. The Seventy Weeks are not dated from the first year of Darius the Mede, but from the prophecy of Jeremiah, which in that year was explained to Daniel as meaning seventy weeks of years (*i.e.*, 490 years) instead of seventy years. Further, the words " Messiah the Prince " are an interpretation of the Authorised Version ; the original has only " the (or " an ") anointed one, the (or " a ") prince." The prophecies referred to by Suetonius and Tacitus do not speak of a single ruler or person as coming forth from Judaea, but of persons or people, in the plural ; and it should be observed that the time of which they speak is not that of the Nativity or of the Crucifixion, but of the period about A.D. 60-70. Altogether the calculation of the seventy weeks is too uncertain and too variously interpreted by scholars to be of any service ; and it is outside the main purpose of the paper.

In the last sentence of the next paragraph, is not the word " however " misused ? The original Greek version has the same reading, Cyrus, as Theodotion, so that one would expect " also " or " moreover." It might be added, however, that the versions of Aquila and Symmachus give the reading " Darius." It looks as if the Hebrew text from which the Septuagint translation was made in the 2nd century B.C. had " Cyrus," but that by the 2nd century A.D., when the version of Aquila was made, the reading " Darius " had crept in.

Mr. W. E. LESLIE wrote : At the opening of the paper the author links the problem of the identity of Darius with the evidential value of the great prophecy of Daniel ix. How is the genuineness of a prediction determined ? It must be clear, and it must be recorded before the event could humanly be foreseen. One possible punctuation of the Daniel ix, passage gives a clear prediction. No one doubts that it was recorded before the Crucifixion could be foreseen by man. If the reference to Darius could be proved to be a blunder, and if the prophecy was therefore written after the time of Daniel,

that would not alter the fact that it was recorded long before the event.

While therefore the identification of Darius has interest for the archaeologist, it should be made quite plain that it does not affect the evidential value of the great prophecy.

From others who were not present at the meeting communications were received as follow :—

Mr. E. B. W. CHAPPELOW wrote : Mr. Owen's comprehensive and scholarly paper leaves little room for further comment, but the following points may possibly be of interest.

The problem seems to me to depend upon the degree of historicity with which the Book of Daniel may be credited.

Mr. Owen does not appear to hold the view, adopted by many, that it dates from the Seleucid period (not later than 164 B.C.) and that it was written to stimulate Jewish national resistance to the Hellenizing policy and active persecution of Antiochus Epiphanes, but if this is so, its strict historicity in the modern sense may well be doubted.



In such case it is questionable whether the author would have had access to native Babylonian sources except perhaps through the Greek of Berossus, who, nevertheless, as Dr. Pinches points out in *The Old Testament in the Light, etc.*, was not always strictly impartial. That cuneiform was studied by the Greeks we know from existing tablets containing transcriptions of Sumerian and Semitic Babylonian words into Greek characters, and we know too that cuneiform, although naturally with a continually dwindling currency, was in use until the beginning of the Christian Era (see Pinches : *Greek Transcriptions of Babylonian Tablets*, and Sayce : *The Greeks in Babylonia*, Proceedings of the Society of Biblical Archæology, March 12th, 1912.)

But would the intense opposition of the Jewish nationalist to things Hellenic have inclined him to use Greek texts ?

If the author were a Mesopotamian Jew he might have used the native cuneiform sources ; but again, if the purpose of the book was to stimulate Jewish resistance to Antiochus, we should rather have expected him to be in Palestine at the very heart of the struggle. Hence the possibility of confusion in historical detail cannot be dismissed.

Personally, I think that no historical personage fits Darius the Mede so well as Gobryas, and that Dr. Pinches's case still holds good. As Mr. Owen has pointed out, Dr. Pinches in the paper, which he quotes (*From World-Dominion to Subjection*), draws attention to the coincidence between the statement that Darius the Mede was pleased to set over the kingdom 120 satraps and that in the *Babylonian Chronicle*, as translated by himself, that "Gubaru, his (Cyrus's) governor, appointed governors in Babylon."

In PSBA, Jan., 1916, Dr. Pinches published a contract or rather "sworn obligation," in which Gobryas is again mentioned as governor of Babylon (*Gubarru pihât Babil<sup>ki</sup>*) as late as the fourth year of Cambyses, son and successor of Cyrus.

The name is here written with  (gu) and not  (ug). As Cambyses is here designated "King of Babylon, king of countries," the text refers to his sole reign and not to any joint reign with Cyrus; it refers to Erech and not Babylon, and as the word used for governor is *pihātu*, which means the function or territory of a viceroy as against *šaknu*, the usual term for a mere city prefect or governor, it would seem that Gobryas was viceroy of Babylonia, and not merely governor of Babylon the city, for a period of at least fourteen years. When he entered Babylon at the head of the troops of Cyrus he could accurately be described as having "received the kingdom" (on behalf of Cyrus), and, exercising the functions of viceroyalty for so many years, he might well in the popular mind have been regarded as a *de facto* king just as perhaps Belshazzar was. The probability that he was a Mede is sufficiently strong, as Gutium, of which he had been governor, was in Western Media, and it would have been natural for Cyrus to entrust the government of a province so important as the new province of Babylonia to a Persian or a Mede rather than to a Babylonian, an experiment which the kings of Assyria had tried and failed in.

If we accept the Book of Daniel as being of the Seleucid period and that, therefore, through the long period of time which had elapsed since the events narrated therein, its historicity must not be pressed too far, the suggestion put forward by Prof. H. H. Rowley (article on Daniel in the *Story of the Bible*, Vol. 1, 1938/9) that its author confused the capture of Babylon in 539 for Cyrus with that

in 520 by Darius the Great, who in this case would be Darius the Mede, is worthy of serious consideration.

Prof. Rowley makes another interesting suggestion, *i.e.*, that the prototype of the hero of the stories in the book was the Daniel referred to by Ezekiel as renowned for wisdom and righteousness, and that the latter belonged to the remote past and is identifiable with the Danel of the Ras Shamra tablets (14th century B.C.), adding that perhaps the author of the Book of Daniel used very ancient floating stories of the wisdom of Daniel and combined them with material from traditional stories about Nebuchadrezzar and his successors.

The only book I have been able to consult on the Ras Shamra tablets is Schaeffer's Schweich Lectures for 1936. Schaeffer does not refer to the legend of Danel in the body of his text, but in note 198 on p. 96 he states that "In the Danel legend, the hero of the Ras Shamra poem, a Phœnician king who dispenses justice and protects the widow and the orphan (Ch. Virolleaud, *La Légende de Danel*, p. 93) may be compared with the famous Daniel the Judge whom Ezekiel xxviii, 3, sets before us in contrast to the vainglorious king of Tyre."

The Rev. Principal H. S. CURR wrote: Mr. Owen's paper has interested me very much. The identification of Darius the Mede is, as he says, one of the standing problems in the exegesis of Daniel, and it is impossible to have too much discussion regarding it, since only by such minute investigations can a satisfactory solution be reached. The quest is all the more worth while, since modern critical scholarship fastens on these references to Darius in Daniel as glaring examples of inaccuracy which go far to discredit the historical trustworthiness of the book and to lend support to the theory that it is a collection of edifying tales, and stirring predictions prepared during the persecutions of the Jews in the reign of Antiochus Epiphanes about the middle of the second century B.C. with the aim of sustaining the faith and constancy of the pious in a time of trial. On that hypothesis the references to Darius are of no consequence, since the stories are only parables.

To the student who believes with Mr. Owen that "the Holy Spirit has always watched over the integrity of the Scriptures," the question assumes a very different complexion. It becomes

associated with the historical truth of the Bible. The paper clearly indicates the three lines along which it has been attempted to identify Darius with contemporary figures whose existence is certified by secular writers. None of these seem to command a preponderating degree of confidence and consent.

May we not repose more confidence in the author? The book abounds in archaeological detail, such as the list of musical instruments in 3 : 5, 7, 10. As far as I am aware these have been tested and found to be accurate. It seems, then, feasible to suppose that such a gross mistake as giving a wrong or misleading designation to an important figure like Darius is most unlikely, especially in view of the fact that he is mentioned fairly often, and that his name is connected with that famous incident in which Daniel was Divinely delivered from the lions. It may seem rather extravagant to suggest that Daniel is quite as worthy of credence as the other sources of information on these remote days usually cited. It is true that it is hard to reconcile the evidence, but that is not unusual in dealing with historical narratives. The harmonising of the Four Gospels is far from easy. Again the reference to Cyrenius or Quirinus as Governor of Syria in Luke ii, 2, presents difficulties as grave as those connected with the mention of Darius the Mede in Daniel. To my thinking, the Bible is always entitled to be treated as a first-class authority on historical matters. In short, our aim should be to reconcile secular history with Holy Scripture and not the reverse.

Mr. C. C. O. VAN LENNEP wrote: Surely the enigma of Darius the Mede could be more simply solved if the logical inferences from the facts as given in the Bible, and the Apocrypha, were followed to their fairly obvious conclusions, What are those facts? 1. Darius was a *Mede*; 2. He was the *son of Ahasuerus*; 3. He was 62 years old when Babylon fell, that is, when he was made *king* over the realm of the *Chaldeans*, or, as Daniel v, 31, has it, when he took the kingdom. 4. When Astyages died he was succeeded by Cyrus. The logical consequences of these facts are, amongst others, that Darius was a contemporary of the latter years of Nebuchadnezzar: that his father Ahasuerus must have been a full contemporary of that king of Babylon. The best known Mede who was Nebuchadnezzar's

contemporary was the man whom history and the Apocrypha call Astyages, Nebuchadnezzar's brother-in-law. Astyages was king of the Medes. Thus the general position of Darius the Mede ("of the seed of the Medes") makes it seem fairly obvious that he was the son of Astyages. But if so, Astyages was "Ahasuerus." If Astyages was Ahasuerus, then, according to "Bel and the Dragon," Ahasuerus-Astyages was succeeded by Cyrus. Kings are succeeded by a son unless history explains otherwise; so Cyrus also was probably a son of Astyages-Ahasuerus. This would explain many enigmas; also it would involve that Darius the Mede was the brother, or half-brother, of Cyrus. Darius was no doubt the elder; he seems to have taken the kingdom of the Chaldeans either before, or jointly with Cyrus, probably the latter. I have gone into this matter very fully in my "Measured Times of the Bible," but shortly stated the foregoing facts and their inferences seem fairly conclusive as to who actually was Darius the Mede.

Major H. B. CLARKE wrote: There are one or two points which I think the lecturer has not taken account of.

First, it is perfectly clear Scripturally that the Medo-Persian Kingdom was double in its origin and that the Persian side came later, *vide* Daniel vii, verse 5, and viii verse 3.

Second. Also that there was a separate reign of Darius the Mede (chapter 11 v. 1) which is noticed by the lecturer, but he has omitted the fact that this could not be contemporaneous with that of Cyrus, for in that year no decree on behalf of Israel had gone out, *vide* ch. 9 v. 2 and also Ezra 1 v. 1. That the reign of this Median king was a real one is shown in chapter 6. It is also to be noticed that during this reign, and indeed through the whole book of Daniel, it is "the law of the Medes and the Persians," whereas in Esther i, v. 19, this order is reversed.

I suggest, therefore, that a distinct Median kingdom is indicated and as an explanation would suggest that Darius is the same as Cyaxares who was 49 at his accession to the throne of Media and reigned 15 years. His reign would, therefore, be short—only two years in all—and I believe some copies of Ptolemy's Canon give Cyrus 9 year's reign, whereas others only give 7. The difference is thus accounted for.

## THE AUTHOR'S REPLY.

To refer first to the Chairman's remarks, I should like to say that the apparent "inaccuracies" in my second paragraph are due to the exigencies of space.

The Seventy Years prophecy of Jeremiah, for the fulfilment of which Daniel asks in his prayer, Jeremiah xxv, 11 and 12, and xxix, 10, was received by Jeremiah in the first year of Jehoiakim (605-4 B.C.), and relates to the period during which the Jews "and the nations round about" (xxv, 9) should "serve the king of Babylon" until the punishment of that king and God's permission to return to Jerusalem (xxix, 10). To the fall of Babylon in 539 B.C., almost immediately after which Daniel must have made his prayer, it was about seventy years from the early part (see Daniel i, 1, and II Kings xxiv, 1, 2) of the reign of Jehoiakim (accessed 608 B.C.) when the Jews first began to fall under the power of the Babylonians. In the "first year of Darius the Median," then, the seventy years of Babylonian oppression of the Jews were almost over. From the destruction of the Temple in 587 B.C. it was just forty-nine years, or "seven weeks" of years. By analogy, apparently, a similar period of "seven weeks" figures as the first part of the new period of Seventy "Weeks" (Daniel ix, 25). The point of departure of the whole period is clearly stated—"from the going forth of a commandment (there is no restriction of the meaning of this word in the Hebrew, to the Divine word or commandment) to restore and to build Jerusalem." Such a commandment—*dabhar*—"word, matter or thing"—undoubtedly went forth, according to Ezra vii, 7, in, or just before, the seventh year of Artaxerxes I, 458 B.C. Artaxerxes' decree included a command to appoint magistrates and judges: whereas the previous decrees of Cyrus and Darius I (Ezra i and vi) relate to the rebuilding of the Temple rather than to the restoration of the city and polity of Jerusalem. The Authorised Version, following the Older LXX and Vulgate, places the "seven weeks" and "sixty-two weeks" consecutively, whereas the English Revised Version follows the Jewish punctuation, which did not exist until about A.D. 200-600 and which makes an "Anointed" appear at the end of the first *seven* weeks of the new period. 7 plus 62, *i.e.*, 69 weeks of years, or 483 years, from 458 B.C. ended in A.D. 25-26. "In the midst" of the next, or "70th week," in A.D. 29 or 30,



Christ was crucified, "an Anointed One" was "cut off," through which supreme sacrifice the old ideas of sacrifice and oblation were abolished. The remaining particulars of Daniel ix, 26 and 27, could continue after the close of the 70th week without violence to the wording of the prophecy.

(2). The fact that "the Messiah the Prince" is without the definite articles "the" in the Hebrew surely does not preclude the possibility of "Messiah Prince" ("Anointed leader or captain") of Daniel ix, 25, being the origin of the Jewish expectation of the Messiah in our Lord's time.

(3). What Tacitus says is, "there was in most [of the Jews] a firm persuasion that in the ancient records of their priests was contained a prediction of how at this very time . . . rulers coming from Judaea were to acquire universal empire." Surely this, combined with Suetonius' statement that this "firm persuasion" "*had long prevailed* through all the East," justifies the inference that, through their long associations with the Jews (see Josephus), the Romans of the first century A.D. had acquired vague notions of the promises of the Hebrew prophets that the kingdom of God would one day extend throughout the world which, combined with what they heard of the actual expectation of the Messiah, and perhaps about the Christians, led these writers to speak in this way of world rulers coming out of Judaea? *Daniel* was apparently the only basis for any calculation of likely *dates*.

(4). The word "however" was inserted in the last sentence of paragraph 3, to suggest briefly that it is remarkable that Theodotion and the Old Septuagint should agree in Daniel xi, 1, whereas, as is about to be shown, they disagree in important respects in the other two "Darius" datings (v. 31 (in the Hebrew vi, 1), and ix., 1).

In regard to Sir Frederic's main point, I should like to say that, quite apart from the palæographical argument, which appears to me decisive, I have endeavoured to judge of the matter with a proper use of controlled imagination. Here was Ugbaru, the "Assyrian"-Perso-Mede Governor of the old Assyrian territory of Gutium, invested like a kind of "military dictator" for this short and highly dangerous period of the change of governments—seventeen days—with power the very object of which was to establish the authority of the fresh rulers. Gobryas—if we may trust Xenophon's picture

to this extent—had an intimate knowledge of the *personnel* of the New Babylonian kingdom. His new appointments—the “reorganisation”—would naturally be started upon quickly. Passion would run high among those who were disappointed and had hoped for higher preferment. There is no necessity for the whole operation of the appointments to have been carried out in detail within the seventeen days. We are merely told: “It pleased Darius” to make them. The “historical” events of this chapter vi are really only the appointments, actual and intended (verse 3), the jealous plot and cunning scheme sprung by the most influential of the “satraps” upon an inexperienced autocrat: for the rest, Eastern ruthlessness and swiftness of execution—which has parallels even among Westerners in our own days. After the deliverance, we only read that the king issued the decree favouring the God of Daniel, and the statement “this Daniel prospered in the reign of Darius, and in the reign of Cyrus the Persian.” That is all.

With regard to Mr. Leslie’s point, according to the Bible the genuineness of a predictive prophecy is proved by its fulfilment. Punctual fulfilment shows a more than human prescience and thus demonstrates the existence of God. (See Isaiah xlviii, 3 and 5, *et passim*.) A satisfactory identification of Darius the Mede will surely enhance the value of Daniel ix as a genuine prediction of Christ, and not a fictitious one relating to Antiochus IV only.

With most of the interesting phases touched upon by Mr. Chappelow and Principal Curr I am dealing, I hope adequately, in my book. The acceptance of the theory of the absolute origin of *Daniel* in Maccabæan times always strikes me as a confession of failure to solve the main historical problems of that book. Belshazzar, whose existence was denied for many years, is now a commonplace personality of Babylonian history. *Daniel* dubs him “the king.” Archæology has brought much knowledge to light that has not yet been assessed at its true values. The canonical Biblical books still aid much in the interpretation of cuneiform texts, and their historical integrity still proves of higher worth than many non-Biblical sources.

“Ugbaru” and “Gubaru” of the Nabonidus Chronicle tablet, and the “Gobryas” of Xenophon seem to mean the same person. The Gobryas of Herodotus cannot be the same if Mr. Sidney Smith,

M.A., and a few other Assyriologists are right in reading line 22 of Column III of the tablet as "Ugbaru died." If, however, that reading may be considered an open question, we may profitably note that Darius I describes Gobryas in the Behistun Inscription as "a Persian." On the tomb of Darius, Gobryas is described as "a Pateischorian." Pateischoria, however, was not in the distinctively Persian territories of the times (Parsua, Parsumash, and Parsa), but rather in the Median.\* Xenophon calls his Gobryas "an Assyrian"—his term for "Babylonian," but could there not be an Assyrian "of the seed of the Medes"? The mixing of their seed was one cause of the fall of the Assyrians proper. To the Jew the earliest Persians were all of the race of Madai of Genesis x, 2, that is to say, "Medes." Herodotus frequently, when speaking of the Persian army, refers to them as "the Medes." As "Assyrian" Governor of Gutium Gobryas might well have adopted the more Semitic form "Ugbaru" for his name.

In regard to Mr. Van Lennep's remarks on Astyages, there seems to be no authority but Xenophon's romance for any son of his. Herodotus says that Cyrus was son of Mandane, daughter of Astyages, and of Cambyses, whose fatherhood is attested to by the cuneiform sources also. Ctesias' account seems hopelessly confused.

I agree with Major Clarke that the Persian kingdom came into conspicuous prominence later than the Median. On all the facts, however, I do not think that "Darius," whoever he was, could have been absolute ruler of Chaldæa for longer than the seventeen days, even if he was Governor of Babylonia until much later. It seems obvious that Cyrus would issue his decree of tolerance and peace immediately upon his entry, otherwise he would lose every advantage of it. And the Nabonidus Chronicle tablet tells us that Cyrus entered Babylon on the 3rd Marcheswan—seventeen days after Ugbaru's entry on the 16th Tisri (Smith). "Ugbaru" was thus in position as an absolute despot in Babylon for exactly that period, and to me it appears, on mature consideration, that that short time was just sufficient for the brief and rapidly-happening events of Daniel vi. Perhaps I might end with the suggestion that the puzzling clause interpreted by some Assyriologists as "Ugbaru died" may mean: "Ugbaru ended, or relinquished, his power."

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\* See *The History of Early Iran*, by G. G. Cameron, 1935, pp. 171-173.

that is, to Cyrus, on the 11th Marcheswan. This would give another possible eight days for Ugbaru's rule.

SUBSEQUENTLY RECEIVED.

Dr. J. BARCROFT ANDERSON wrote : This paper of Mr. Owen's is of exceptional interest, because he has given us reproductions of what he describes as "later Avamæan letters which the Jews adopted during the Captivity." If these letters are compared with the facsimile letters (ד' ט"ב Deut. xxvii, 8) which Joshua used in making his duplicate (מִשְׁנֵה Joshua viii, 32) of that book of which Moses was amanuensis (Ezra vii, 6), and whose permanent place was beside the Ark (Deut. xxvii, 8), it will be seen that these two scripts are substantially the same, while Joshua's script and that of Ginsburg's Massoretic edition of the Hebrew Bible are exactly the same. I need hardly add that Joshua's script can now be studied by anyone, on page 680 of Volume II of Ginsburg's Massorah, together with an account of how it comes to be there. During the Captivity, the autograph of Moses seems to have been in the custody of Ezra, its lawful official custodian, who, as stated by King Artaxerxes in his letter (Ezra vii, 14), was bringing it back to Jerusalem. The only other times it is recorded as having been away from the side of the Ark, were in the days of Jehoshaphat (2 Chron. xvii, 9), and when on loan in Alexandria to be translated into Greek. I note that in the Elephantine Papyri exhibits, attached to this paper of Mr. Owen's, are two instances where, what appears to be the Greek form of the letter X, is substituted for the corresponding letter of the script of Joshua.

846TH ORDINARY GENERAL MEETING.

HELD IN COMMITTEE ROOM, 19, LIVINGSTONE HOUSE,  
BROADWAY, S.W.1, ON MONDAY, MARCH 23RD, 1942,  
AT 6 P.M.

PROF. S. NEVIN, M.D., B.Sc., IN THE CHAIR.

The Minutes of the previous meeting were read, confirmed and signed.

The CHAIRMAN then called on Dr. Walter Pagel to read his paper entitled "The Debt of Science and Medicine to a Devout Belief in God."

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*THE DEBT OF SCIENCE AND MEDICINE TO A  
DEVOUT BELIEF IN GOD.*

*ILLUSTRATED BY THE WORK OF J. B. VAN HELMONT.*

By WALTER PAGEL, Esq., M.D.

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I.—VAN HELMONT'S POSITION IN THE HISTORY OF  
SCIENCE AND MEDICINE.

VAN HELMONT (1579-1644) is a figure well known from textbooks of the History of Medicine, Chemistry and Biology which make due reference to his momentous discoveries, notably that of "Gas," to his quantitative experi-

ments, to his use of the balance, to his description of a thermometer.\* van Helmont taught the indestructibility of matter. He demonstrated acid to be responsible for the digestion in the stomach and alkali for that in the duodenum. He demonstrated the vital importance of bile, hitherto regarded as a noxious humour. A keen student of vital phenomena, van Helmont expressed his results in chemical terms and became the founder of biochemistry. He proposed a reform of time measuring by using the pendulum and devoted much experimental work to the investigation of kindred problems. He is the founder of modern pathology in that he based it on a study of the external agents and the anatomical changes of the organs, in diseases. Original anatomical, physiological and pathological research led him to a rejection of the "Folly of Catarrh," then the universal explanation of disease which was derived from a flow of mucus from the brain straight through the base of the skull to all parts of the body, notably to the lungs and joints, causing pneumonia, consumption, rheumatism. As a rule it is mentioned that van Helmont's treatises make dull reading as they are mixed up with theosophical speculation, the account of dreams and visions. The usual method is to extricate from these the scientific detail which is valid to-day or should be regarded as stepping-stones of scientific discovery. The rest is "excused" with the spirit of the age when it was customary to mingle matters scientific and philosophical, and when the scientist had to offer his new knowledge in a religious cloak in order to be read and believed. At best the famous catchword of the "two souls in the same body" or similar superficialities are applied to van Helmont, which should justify a summary dismissal of the "dark" chapters of his work.

While van Helmont's original discoveries and true scientific yearning are generally recognised among historians of science and medicine, van Helmont's position in the history of philosophy is still less adequate. Here not even an attempt is made to understand his scientific and medical achievements—yet one disapproves of them. What can be expected from a man who deprecated "ratio," *i.e.*, formal logic and mathematical patterns

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\* From the voluminous literature on van Helmont I mention only: Partington, J. R., *Joan Baptist van Helmont* (*Ann. Sci.*, 1936, i, 359), as an account of his achievements in chemistry; and for his medical, biological and philosophical aspects: Pagel, W., *J. B. van Helmont* (Berlin; Springer, 1930); Pagel, W., *Helmont, Leibnitz, Stahl. Arch. Gesch. d. Medic.*, 1931, xxiv, pp.19-59.

in science? It has been said that van Helmont in no way belongs to the magnificent series of scientists and philosophers which the seventeenth century has produced, to Harvey and Glisson, to Willis and Boyle, to Bacon and Descartes. This has been based on the fact that van Helmont believed in alchemy ("hermeticism"), rather than on examination of his actual scientific knowledge and achievements.\* To any student of van Helmont's work, his belief in the transmutation of metals and the therapeutical action of chemicals including metals such as gold, *i.e.*, his "hermeticism," is obvious. But is this sufficient evidence for deprecation, and is "alchemy" really the only or the predominant philosophy of van Helmont? Both these questions must be answered in the negative. Van Helmont was and is praised as an acute observer and most successful experimentalist, he is the admitted and admired predecessor of chemists such as Boyle, Stahl, and perhaps even of Lavoisier. In any case "hermeticism" has not prevented him from making his momentous discoveries. Belief in the transmutation of metals, in mighty "ferments" and "seeds," in spontaneous generation, in "spirits" and apparitions, in "palingenesis" was widespread in van Helmont's age. These subjects were seriously treated by the Royal Society, by scientists as well as amateurs and impostors, and this could not interfere with the foundation of science at this very period. Moreover, "hermeticism" is neither van Helmont's philosophy nor his religion. He had deep philosophical insight, of which I shall give evidence presently. Nor was "alchemy" the source of van Helmont's devout belief in God. There is no reason to doubt that his belief was genuine. It has been inferred that he professed it and used biblical language in order to propound his "hermetical" wisdom with impunity. But why, then, did he use biblical language and enlarge on theological arguments in almost *all* his treatises including the multitude of those which had nothing to do with "alchemy," for example, the purely medical works? One may assume the converse and hold that religion was the source of his "hermeticism"; van Helmont's universe consists of the "seeds" which are created by the living God and which owing to their divine origin make transmutation of matter possible. It is the Godfearing who will learn the hidden divine

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\* Nève de Mévergnies P., *Jean Baptiste van Helmont, Philosophe par le Feu*. Paris: Droz, 1935.

forces in nature. Not "alchemy," not "hermeticism," not goldmaking and the preparation of life-prolonging elixirs, but the search for "specificity," *i.e.*, the essential characters of objects in nature as the expression of divine grace and creation is the link connecting the various and apparently so disparate aspects of his work. It is true that this is based on his religious belief and in many respects empirical but, no doubt, "empiricism," *i.e.*, deprecation of theories in favour of observation and experiment such as practised by van Helmont, was much more akin to modern science than the formal logic disputes on natural objects and phenomena held at the universities of the sixteenth and early seventeenth century. It is bewildering that these scholastic exercises are regarded as "scientific" simply because they were propounded by the legitimate "schools" and that they are contrasted with van Helmont's "empiricism" and "hermeticism."\*

In conclusion, "hermeticism" is but one of the many trends of thought which were transmitted and offered by van Helmont's work. His genuine belief in a living and creating God, however, is the link connecting the different aspects of his work which may be described as the search for the specific, *i.e.*, essential characters of objects in nature.

No attempt has yet been made to understand van Helmont's work as a whole and thereby to explain what strikes the present day observer as contradictions in his life and work, notably the union of religious and scientific thinking and the actual inspiration which the latter received from his devout belief in God.

I shall therefore follow a method directly opposed to the tendency to extricate scientific detail from the general philosophical and theological frame in which it is offered. It will then emerge that what has been regarded as purely scientific entity meant to its discoverer a cosmological or general biological notion which only a *religious* mind could conceive, and thus will be established the active rôle which religious motives played in the birth of modern scientific ideas in the seventeenth century.

## II.—VAN HELMONT'S CRITICAL PLATFORM.

It is Aristotelian philosophy and its petrification in the scholastic and jesuitic lore of the university which van Helmont

\* de Mévergnies, *loc. cit.*



fiercely attacks. First of all the *method*: The sheer reasoning, "ratio," which pretended to make man omniscient by means of the art of discussion and combination, the formal-logic and mathematical interpretation of trivial facts such as that water is humid or light illuminates, instead of impartial search for *new* facts and observation of phenomena.

Generally ruling principles, formal logic figures and mathematical patterns, however, are in Van Helmont's opinion, alien to nature which deals with things as they really are, *i.e.*, with truth. Truth is a real thing, reason an "ens rationis," a mere product of mental activity and therefore a "non-ens." "Reasoning and truth," van Helmont says,\* "are different at their very roots." Reason is by no means the highest function of the intellect, it is developed to a high degree of perfection in freaks of nature, in the mentally deficient and in animals, notably in foxes which outwit their enemies skilfully.† In the end reasoning and formal logic which is a dunghill ("defæcatissima") and a "worthless talker," are but arguing which serves to impress one's personal opinion upon an audience by special adaptation and composition of words.‡ Syllogisms are negations, science is positive and, against the mathematical patterns, it is not man who measures nature, but only nature itself.§

The "sermocinalia," formal logic and mathematical patterns, are particularly useless in the investigation of life. This, van Helmont says, beats the human intellect. It is a sort of "light" descending from the "father of light" and thereby outside the "mundus intellegibilis," a term wrongly used by the schoolmen for God.|| Life resides in strata of the soul deeper than those of the intellect whose blotting out affects but little motion and life itself, and which is so easily overwhelmed by the life forces and affections such as syncope and epilepsy, which are not derived from the brain.

At van Helmont's time refutation of formal logic was widespread and felt to be a necessity for the building up of a scientific world; in van Helmont's case, however, it is actuated by *religious motives*. The domination of formal logic is, in his opinion, but an expression of the hybris of human intellect which feels itself

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\* *Venatio Scient.*, 27.

† *Ibid.*, 34.

‡ *Logica inutilis*, 23.

§ *Caus. et init. natur.*, 41.

|| *Confirmatur morborum sedes in anima sensit.*, 6.

capable of mastering God's creation. It is the heathen Aristotelian doctrine, refuted by St. Paul long ago, but stubbornly adhered to by the schoolmen.\*

But van Helmont does not stop at the methods, the *substance* of pagan philosophy, so shamelessly adopted by the Christian schools, is still more the target of his attacks.

He shows that the four elements, the four qualities and the four humours of the Greeks, still the main pillar of seventeenth-century natural philosophy, either do not exist or do not constitute matter, or that where they are, their function has been misunderstood. Bile, believed to be a noxious, chiefly pathological product, van Helmont proved to be of vital importance in digestion.† Van Helmont's rejection of heat, the most potent factor in ancient biology, is the keynote of his critical as well as constructive work. Heat, he says, is a companion of life, but not its essential requisite, since life is just as real in fishes and frogs as in the lion, in "cold" poppies just as in "hot" pepper.‡ There is no innate heat in the heart or essential for the maintenance of the pulse. Heat may favour the hatching of an egg, but it can never display any *creative* force, as thought by the schoolmen. This strikes van Helmont as an atheistic concept.§ God alone creates forms and substances. These differ from each other in principle as well as in their products. In other words they are *specific* in themselves and thereby completely different from heat which is a *general* medium and in no way specific.

Ancient thinking was materialistic and therefore atheistic. It recognised as the causes of natural processes only *quantitative* and *locative* changes in an ever identical and immutable matter. Hence the importance of the "too much" and the "too little," of polarity and "contraria," of attraction and repulsion, the combat of the qualities, hence the decay of medicine in which therapy was directed against the fictitious humours, elements and qualities and led to indiscriminate bloodletting and purgation with resulting decimation of mankind. All this was bound up with a revival of the ancient belief in the profound influence of the stars and the drawing up of diagnostic and prognostic

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\* *Venat. scient.*, 37; *Logica inutil.*, 20.

† *Scholar. Humorist. Pass. Deceptio*, Ch. II., 8 and 24.

‡ *Blas Human.*, 15, *Vita* ed., Amster., 1652, p. 585 *Physica Arist. et Galeni ignara*, 7.

§ *Formar. Ortus*, 12.

tables. To van Helmont the stars are but time signals which "necessitate"; but how, he asks, can variety in nature and specificity be ever explained by uniform motion and its laws? Motion, by which Aristotle defined nature, must take place in something which exists and is the subject of investigation.\* The stars, not possessing any "ratio causarum," can do nothing, nor can a Christian with impunity attribute to them duties other than to act as time signals.† The same opposition against materialism and atheism actuates van Helmont in his combat against the doctrine of the analogy of macrocosm and microcosm which formed the basis of the natural philosophy of Paracelsus and some of his followers, particularly Fludd.‡ If everything, argues van Helmont, in our organism is governed by forces identical with those acting in the outer world, if the phenomena observed in living beings are but replicas of what occurs in the celestial bodies, then no place remains for specificity in nature. This is vouchsafed by divine creation, which occurs but once, bestowing on every being the features essential for its *individual* life.§ Life, to van Helmont, means a modification of matter which the creator compels to act in certain ways varying with the individual. He thereby reserved for things vital the private right and privilege of specificity as opposed to the general—"public"—institutions such as the forces of the stars, attraction and repulsion, sympathy and antipathy, heat and cold, etc., of which *all* beings in nature partake. This vitalistic (and modern scientific) point of view leads him to reject symbolism and *monistic* concepts. He equally deprecates *dualistic* theories which create a gap between body and soul, thought and extension. He himself builds up a vitalistic *Pluralism*.

### III.—VAN HELMONT'S ORIGINAL WORK.

Van Helmont's pluralism sees the world composed of innumerable "seeds" which are neither spirit nor matter, but have something of both. Products of immediate divine creation, they are characterised by their *life*, *i.e.*, their *specific* form function and development—not unlike Leibniz's ultimate units

\* *Phys. Arist. et Gal. ign.*, 2-3.

† *Form Ortus* 14; *Astra necess.*, *non-inclinant*, etc. *passim*; *De Tempore*, 33.

‡ See Pagel, W., *Religious Motives in Seventeenth Century Medical Biology*, *Bull. Inst. Hist. Med.*, 1935, iii, 97-312.

§ *Natura contrarior. nescia*, Ed. 1652, p. 126. Qualified recognition of sympathy in *De magnetica vulner. cur.*, 1 ff., and of generally valid forces in nature in his treatises on "Blas."

of being, the "Monades." They are the divine, *i.e.*, spiritual spark in every being, the entity which actually matters and forms the subject of his research. Yet van Helmont cannot agree with those who assume a gap between things corporeal and spiritual. In his opinion both form different aspects of the living being rather than a separable body and soul. It is thus that he represents the divine seed as a kind of "odour" which illuminates matter, conferring upon it a "disposition for transmutation." The "odour" is also called "ferment" or "image" of the thing which is to be formed or "notion of what has to be done."\* The odour cannot, however, act on crude matter (in van Helmont's opinion this is nothing but water), unless there is an "Odorabile" present which is the "gas" of the object.† By its presence matter loses its coarse corporality and, as it were, meets the odour-like ferment half way, thereby becoming suitable for its reception.‡ "Gas" therefore is the entity which organises matter and makes it fit to become further organised, and only matter which has acquired a "ferment" or "odour" or a "seminal property" is called "gas." Each organised body in nature contains its gas, a spirit, under normal conditions "concrete" or "coagulated like a solid body" and thereby kept dormant. The whole body may become volatile, however, when it has combined with an appropriate ferment. This is seen, for example, in fermenting grapes, left lying about with their skin damaged. If the skin is intact, however, and the ferment thus prevented from access, they simply dry up without liberation of their "gas."§ As far as material is concerned, all bodies are eventually water and may be converted into it. But this will not occur unless they have lost their specific seminal property, their gas. If they are forced to give up their fixed condition, *e.g.*, by heating, gas develops. In other words gas is the thing which has lost its concrete shape, but not specificity. It has therefore lost nothing and will never be consumed, as can be seen when charcoal is heated in a closed vessel. It may be heated until doomsday, yet will never substantially disappear, but it will be almost completely transformed into a "wild spirit."§ This is called "wild" because it cannot be held in an open vessel and solidified unless it loses specificity, *e.g.*, by

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\* *Imago ferm. impr. mass. sem.*, 12.

† *Magnum Oportet*, 36.

‡ *Ibid.*, 25.

§ *Compl. a. mist. elemental. figm.*, 14.

the action of cold in high altitudes or by an extremely long time interval when finally the thing is converted into water. *Gas is, therefore, unlike air and watery vapour, no volatile medium common to all things, but something specific.* It is the material carrier of specificity which van Helmont believed he had discovered and which should be present in every being in nature. The far-reaching significance of "gas" emerges from its rôle in living beings. Gas, containing "concrete semen," is capable of generation.\* The "life spirit" in our blood is gas.† The chief vital principle in the body as well as the vital principles in the organs, *i.e.*, the "archei" are "gas" of the nature of balsamic salts" which can easily evaporate through the pores, such as seen in syncope, fainting, palpitation. *Gas is the vector of life.*

It is thus that van Helmont feels the great progress which is due to his work—not so much because of the import of his discovery for chemistry, but for the empirical solution which he offered for the perennial problem of the action of "spirit" on matter. In van Helmont's concept the immanence of the dynamic principle in matter is emphasised—as opposed to its external and accidental action on it. Spiritualisation of matter is the means by which van Helmont achieved this result, which is tantamount to a vindication of the exigencies of matter and its changes in biology. van Helmont's merit lies in the empirical justification of the concept of immanence. Gas was reality and truth, the elements, humours and qualities of the ancients were fictitious. Gas was an empirical and material entity on which safely to base specificity in a vitalistic sense; not more than a mechanistic pseudo-explanation was to be derived from the ancient concepts of imaginary changes in the arrangement of the material atoms. Aristotle had deduced a specific vital force by philosophical *reasoning* and compared it with the creative idea of the artist; van Helmont has found something of this idea in his *test tube*. He demonstrated how matter was enabled to unite with the divine spark of life; the ancient theories did not require, nay, rejected, divine creation.

Gas has thus a meaning reaching much farther than that of a chemical entity. It embodies a notion of general cosmological and theological import. It is a genuine offspring of van Helmont's religious system of nature. It cannot be isolated from its historical and religious background and indexed like

\* *Compl. a. mist. elem. figm.*, 34.

† *Ibid.*, 40-41.

a test book entity. In van Helmont's system there is no separate soul which acts from outside on a body devoid of any right and activity, on mere matter which would continually decay, but for the preserving power of the "anima" of Stahl and the "psychovitalistic" followers of Descartes. These preserving, "balsamic" powers were attributed by van Helmont to the "vital gas," for example, to the volatile and salty spirit which accounts for the conversion of venous into arterial blood because it keeps the latter free from crude residues. It can be isolated from the blood and successfully used, *e.g.*, in epilepsy. *Qua* "gas" it is the carrier of *specific* life forces and impulses.\*

Van Helmont went out to search for the *divine spark in beings* and discovered a *chemical entity*: "gas." He found it chiefly, as we know to-day, in the form of carbon dioxide. His method has been that of chemical analysis, of "pyrotechnica," *i.e.*, by employing combustion. This meant to him at the same time spiritualisation of matter, an empirical approach to God and His designs in creating specific, *i.e.*, living entities. The discovery of gas must have met with keen interest not only in scientific circles, but generally and above all amongst the clergy. The question of "what kinde of bodies shall those be after they be raised" is one of the "Practicall Catechisme" and what, for example, H. Hammond describes as "spirituall bodies," thereby trying to render the doctrine of resurrection "reasonable"†—may well be brought in connection with the empirical notion of gas. This must have had a special appeal to those who under the auspices of the Royal Society investigated "palingensy," *i.e.*, the spiritual phenomena due to a material product which is thrown off like a film or membrane from the surface of bodies.

Space does not permit to give an account of van Helmont's actual influence on contemporary theology, medicine and philosophy, particularly on Leibniz's monadology. His *Ortus Medicinæ* (Amsterdam 1648) was early translated into English (by Chandler in 1664; some of the treatises by Charlton).

A few words must be said about van Helmont's reformation

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\* *Complex. a. mision. element. figment.*, 40-41; *Blas Human.*, 45 ff.

† *Pract. Catech.*, 5th edit., London, 1649, p. 302. It is noteworthy that the great Oxfordian anatomist of the central nervous system, Thomas Willie, quotes Hammond and Gassendi as his theological and philosophical authorities (*e.g.*, *De anima brutorum. Amsterod.*, 1674, at the end of the *epist. dedicat.*).

of medicine and his religious notion of biological time. *Medicine* at van Helmont's time largely followed the ancient theory which regarded man himself (*i.e.*, the mixture of his humours, his "temperament") as the chief cause of disease. Disease is nothing specific; it varies with the faulty humour or humoral mixture which, already in normal life, predominated in the patient. In other words, there were no such entities as "diseases," there were only incapacitated individuals and there was "disease," *i.e.*, a defect of the body impairing the harmony of form and function. van Helmont, however, said: "The supposition of the mixtures vanishes, the number of elements, qualities and temperaments has to go, and as liars are unmasked the futilities which the schoolmen have nourished stubbornly or ignorantly."\* If objects and phenomena in nature are entities by themselves which owe their existence to the divine creation of a *specific* seed, diseases, van Helmont concludes, must be also such entities and due to a *specific* cause of their own, their seed. It is obvious that this conclusion opens up the view of the *external* causes, the "seeds" and "contagia" of diseases in contrast with the *internal* (constitutional) cause of disease which had been emphasised by the ancients. To van Helmont the disease-entity is something outside man, an "alien ferment" which impresses its own schedule of life on the "archeus," *i.e.*, the vital principle in the patient. It is thus an "idea morbosa" acting on our internal imagination, since all transmutations and indeed all action in nature are due to the imagination of a "form," or as Leibniz would have expressed it, to the internal perceptions experienced by the "monades." The "alien ferment" thus "contaminates" the vital principle, it acts as a "contagium." Diseases vary according to and become identical with their external causes. Such are: the morbid impression conveyed with the bite of a mad dog, metallic and silica dust inhaled in the mines, drink, pharماكa, poisons, suggested ideas (all these causes are covered by the ætiological notion of "recepta") and, above all, "retenta," *i.e.*, products of the disturbance of "digestion," *i.e.*, the sum total of processes of assimilation and dissimilation in the digestive canal and in the organs and tissues. *Etiology* in the modern sense, *i.e.*, the search for the external causes of diseases, was thus the *first* fruit of the new orientation in pathology which was derived

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\* Terra, 10.

from van Helmont's general philosophical and religious view of nature.

The ability to dissolve is one of the noblest effects which nature achieves in mastering matter. The highest aspiration of the early chemist, notably van Helmont, was to invent a universal solvent, the "liquor alkahest." The main function of the vital principle, the "archeus" in the organs, is to dissolve material conveyed with the blood, to select specifically the material necessary for the organ, and to see that no crude residue is left. The archeus thus acts as a "custos" of the organ, working in its metabolic centre, its "kitchen," e.g., in the root of the tooth, the bed of the nail, the basal layers of the skin, the splenic part of the stomach. Disturbed in its function by the illusions emanating from an alien ferment, the archeus will lack in its dissolving power, it will fail in its watchman's duties. Residues will appear. These are the *anatomical changes*. They indicate the *organ affected* and its importance in the development of the particular disease in question. This view of organ specificity had been neglected by the ancients and contemporary school pathology. The *second* fruit of van Helmont's religious natural philosophy is, therefore, *location of diseases, organ-pathology and morbid anatomy*.

*Therapy* of the ancients was directed against the wrong humours and qualities, i.e., against man and his constitution. It aimed at restoring the material balance of the body by prescribing a special diet, by bloodletting or purgation. In van Helmont's view therapy is directed against the external pathogenic agent. After its removal the balance of the material constituents of the body will recur automatically. The "contagious" cause has to be "washed off" from the archeus so that it might recover the schedule of life which it has received when created by God as a seed with a specific scope. No diet, herbs, laxatives or venæsection will achieve this effect. Van Helmont bases his therapy on powerful chemical remedies, on the great "restaurativa et confortativa," as taught by Paracelsus, such as compounds of sulphur, antimony, mercury, metallic preparations. Not unlike Paracelsus, he by no means omitted purely empirical and "magic" remedies such as ram's testicle or animal blood, e.g., against pleurisy. "Magic" therapy, in van Helmont's medicine, however, is bound up with immunological concepts which are far in advance of his own time, such as the knowledge of the beneficial effects of blood of conva-



lescents.\* *Causal therapy* emerges thus as the *third* fruit of van Helmont's philosophy and religion.

I have endeavoured to show how it was the search for the traces of creation, *i.e.*, for the specific "seeds" of things, which actuated van Helmont's opposition to the ancients and led him to new ways in natural philosophy and all its branches, including chemistry and medicine. His ingenious anticipation of the modern concept of "*biological time*"† can be easily traced to the same motives. Aristotle had linked time with motion. There was nothing "specific" in time; it simply counts motion, Aristotle said. In van Helmont's opinion, however, time is no less a specific entity than anything else in nature. Its specificity derives from the presence of "duration" in the "seeds" of everything in the universe from the first beginning of creation. This duration determines the length and intensity of the life of the individuals, their specific life-rhythm. It is the speed of their inherent motions which governs the specific variety of individual beings, of their development, form and function, and indeed of all changes in nature.‡ In other words, time as the life rhythm varies with the individual and governs its motions. Hours, days, years are conventional units of measurement of the motions of the stars, but not real time. This is gauged by the biological processes. It is essentially *immanent* in the objects of nature, whereas Aristotle's time is an "*extera consideratio*," something invented by the measuring human mind, an "*ens rationis*." True time, as liberated from succession and motion, is *eternal*. It is an emanation from the creating God, and therefore older than all created things. In spite of its inherence in individual objects, time has, therefore, a universal character and determines the life-time in the individual independent of and unapprehended by the latter.§ It is therefore the entity which gives and distributes everything to all beings according to their destined participation in eternal duration. Time is the eternal in everything, its true "*quidditas*" which is responsible for its specificity differentiating it from other beings. The undue emphasis laid by the ancients on motion, especially that of the stars, has secured the dominating position of the doctrine

\* *De magnet. vulner. curatione*, 50.

† See Pagel, W., *J. B. van Helmont, "De Tempore" and the History of the Biological Concept of Time*. With notes on the Greek ideas referred to in *De Tempore* by Helen Weiss. (Osiris. In press.) This contains a translation of and a commentary on van Helmont's treatise "On Time."

‡ *De Tempore*, 18.

§ *Ibid.*, 46.

of the "critical days" and similar symbolism in medicine since early Pythagorean times. This is in van Helmont's opinion guilty of the conservative, "Hippocratic" attitude towards diseases which places all hope in "crises," *i.e.*, the healing power of nature, which by itself will effect the cure. Here again van Helmont finds the fault with the neglect of the *specific* rhythms and life-times of the different diseases in favour of *general* regularities such as the constellation of the stars, the critical days, etc., which were studied by ancient and seventeenth-century medicine.

It is thus that van Helmont links up time with the divine spark of life in the individual, with its time of life and the quality of its biological processes. In doing so he uses the same arguments as Bergson and biologists and sociologists who deny that time has the purely quantitative character of astronomical time.† Indeed, the speed of biological processes varies, for example, with the size of an animal or with its age. As Joseph Needham puts it: "Mouse time must bear the same or a similar relation to elephant time as mouse spatial magnitudes to elephant spatial magnitudes."‡ The calendar of primitive people differs in agricultural, hunting and pastoral groups (Sorokin and Merton§). Biological processes form a clock by themselves which gives more and truer information about time than the ordinary conventional time units. These indicate "empty," quantitatively equal periods which are unequal biologically and sociologically.

Nothing shows the whole character and scope of van Helmont's work as impressively as his treatise *De Tempore*. All that van Helmont designs, finds and teaches, he does for the sake of research on life, for biology in the widest sense. For to him life is a direct emanation from the creating God, and therefore not only the noblest but also the only subject which opens the way to scientific and at the same time to eternal truth. *Van Helmont's biological bent is due to his religious zeal, and his scientific achievement a fruit of his religious conviction.*

#### IV. SUMMARY.

The religious considerations which were in my opinion instru-

† Bergson, *Time and Free Will*. Transl. by F. L. Pogson. London, 1910, p. 107.

‡ Needham, J., "Chemical Heterogony and the Ground Plan of Animal Growth," *Biol. Review*, 1934, ix, 79. See also Lambert, R., and Teissier, S., *Ann. Physic. and Physiol. Chem.*, 1927, ii, 212.

§ "Social Time," *Am. J. Sociol.*, 1937, xlii, 615.

mental in the building up of Van Helmont's scientific world may be *summarised* as follows :

(1) Predominant use of "ratio"—reasoning—in research on nature, and particularly on life, is due to hybris of the human mind which believes itself capable of mastering God's creation. Reasoning and logic have nothing to do with reality ; they lead the mind in a circle, teaching nothing that is new. God in particular and His immediate offspring, Life, can be in no way tackled by the human intellect.

(2) Contrary to ancient and seventeenth-century belief, constant changes of material elements and humours cannot explain the specific properties of the individual, *i.e.*, "forms" and "substances." These have been attributed to the action of heat in particular. Heat, however, can only *support* creative evolution ; it cannot create by itself. God alone *creates* "forms" and "substances." These are different from each other in principle, they are "qua" created entities, *specific* in themselves, whereas heat, humours, elements are *general* media and in no way specific. van Helmont, actuated by religious motives, thus opposes ancient and seventeenth-century materialism and its offsprings, astrology, mysticism of numbers, symbolism (analogies of macrocosm and microcosm). Nature is not governed by one force (monism), nor by the antagonism of two forces (dualism), but is a system of innumerable created and therefore specific "seeds" or "monades" (pluralism). It is the object of science to search for these "seeds" in beings, whereby truth and an approach to God and the realization of His will in creation are obtained.

(3) Divine illumination, experienced in dreams and visions, on the one hand, and observation, particularly experimentalism, on the other, are the methods adequate for the search for the divine "seeds."

(4) The ultimate motive of research in nature is religious pragmatism, the endeavour to detect and open up the hidden resources in nature which God has created for the benefit of suffering humanity.

(5) van Helmont believes that divine emanation confers on every being its essential characters, *i.e.*, specificity. He succeeds in discovering, by scientific methods, the material carrier of specificity. This is the new entity which van Helmont called *Gas*. In contrast with watery vapour and air, which are *general* media, gas is *specific* for the individual being and for its species,

and therefore the suitable basis for the vital impulses *immanent* in living matter. In this sense body and soul are not separate entities one of which governs the other (as in the various "animistic" or "materialistic" theories), but form a living unit with physical and psychical aspects. This concept comes very near to modern biological insight.

(6) van Helmont's pluralism in many respects equals that of Leibniz, the personal friend of Franciscus Mercurius, van Helmont's son, a devout pupil of Cabbalah and theosophy.

(7) van Helmont's achievements in physiology and pathology can be traced to his religious and philosophical conviction: divine emanation confers specificity and governs and explains the phenomena of life. *Specific* principles are responsible for digestion in its different phases, not simply heat or a process similar to coction. van Helmont thus discovers the ferments, notably the action of acid in the stomach and of alkali in the duodenum. Each organ has its "archeus," which selects specifically the substances necessary for the particular organ from the blood and lymph which passes through all organs and tissues. The archei act specifically on matter to be digested, in a different way in the mouth, in the stomach, in the gut, in the liver, etc. Pious contempt and scepticism towards the complacent human intellect lead van Helmont to an advanced appreciation of the vegetative impulses and the subconscious faculties. He localises the central regulatory mechanism in the stomach, and the investigation of this organ becomes in his opinion the first task of the physiologist and pathologist. He thus collects invaluable data, *e.g.*, on the function of the pylorus and the motion of this "rector of digestion."

In pathology the search for specific causes of diseases (instead of the ancient purely quantitative faulty mixture of humours) leads van Helmont to modern views on the causes (ætiology), to location of diseases in certain organs (morbid anatomy), to classification of diseases as entities (ontology), and to causal therapy.

(8) An ingenious anticipation of the modern concept of biological time is found in his treatise *De Tempore*, which is based on a refutation of the Aristotelian—numerical and mathematical—concept of time, on theological and biological grounds.

*The author wishes to acknowledge his indebtedness to Dr. V. C. Robinson M.R.C.P., for revising the manuscript and offering valuable suggestions.*

[*The Author's reply, following, refers to a brief discussion not recorded. The chief points therein can be readily inferred from the references made thereto.*]

#### AUTHOR'S REPLY.

DR. PAGEL: I agree with Mr. Leslie that one might wonder if an anti-rational attitude could possibly have led to results in scientific discovery and progress in medicine. We must remember, however, that "ratio" at van Helmont's time meant hairsplitting formal-logic. "Ratio" in the sense of sound scientific thinking and reasoning was employed by van Helmont himself. Judged by present-day standards van Helmont certainly erred in many points and became a victim of his credulity. He shared, however, his errors, for example in the *Physiology of Respiration* and his belief in Spontaneous Generation, with the great contemporary scientists such as Harvey, Willis, Hales, Highmore, Bartholinus and others. It has been said that van Helmont's influence on his time and the development of science was negligible. This is certainly not so. He was often quoted by contemporaries and later up to Haller, van Swieten and Virchow, and not only by medical men and scientists, but also by philosophers such as Henry More and Leibniz, and by theologians such as Richard Baxter. His opinions and discoveries were accepted or refuted, but in general treated with due consideration, although not always with respect. van Helmont's position in the history of science is unique in that it demonstrates the *active* part which Neoplatonism (especially Plotinus' criticism of Aristotle) played in discovery, research and medical progress. Mutual inspiration rather than incidental personal union marks the relationship between religious conviction and scientific research in van Helmont's case.

I am very grateful for Professor Nevin's complimentary remarks. It is difficult to answer his question as to what lines van Helmont would have taken if he were alive to-day. His attitude was deeply bound up with the contemporary view of the world and the actual—political and economic—history of his time. Opposition to scholasticism was actuated by the hostility of the Flemish nobleman to the Jesuits who had come to Flanders in the train of the Spanish conqueror. I cannot see, however, why he should not have followed his bent to-day, when scientific endeavour is just as much based on the view of the world and the personal convictions of the scientist as it was 300 years ago.

## 847TH ORDINARY GENERAL MEETING.

HELD IN COMMITTEE ROOM, 19, LIVINGSTONE HOUSE,  
BROADWAY, S.W.1, ON MONDAY, APRIL 13TH, 1942.

THE REV. D. M. LLOYD-JONES, M.D., M.R.C.P., IN THE  
CHAIR.

The Minutes of the previous Meeting were read, confirmed and signed.

The CHAIRMAN then called on the Rev. J. Cochrane Conn, M.A., Ph.D., to read his paper, entitled "Psycho-Analysis" (being the Dr. A. T. Schofield Memorial Paper for 1942).

The meeting was later thrown open to discussion, in which the following took part. Mr. W. E. Leslie, Mr. F. C. Short, Rev. H. R. A. Philp, Mr. J. H. Goode, Dr. Lloyd-Jones, Mr. P. Ruoff, Group-Captain Wiseman.

Written communications were received from the Rev. Principal H. S. Curr and Mr. Douglas Dewar.

The following elections have been made:—J. R. W. Stott, Esq., an Associate; A. E. Coombe, Esq., an Associate.

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### *A REVIEW OF PSYCHO-ANALYSIS IN ITS BEARINGS ON RELIGION.*

By the REV. J. C. M. CONN, M.A., PH.D.

I DO not propose to give a detailed account of Psycho-analysis, for many are available. My object is rather to comment on some aspects of the contact between it and Religion.

The impact of Modern Psychology on Religion has been very great. This has been largely due to the work of Sigmund Freud (1856-1939), who has exercised a wider influence upon his generation than any other psychologist. Without Freud's work this whole field would still be uncultivated wilderness. His attempt to explore the unconscious realm of the human mind revolutionised psychological study, and gave to the world what is in truth a "New Psychology." His discoveries enabled him to penetrate the veil which protects us from the disturbing knowledge of our unconscious tendencies.

Psycho-analysis, which started as a therapeutic *method* of investigation for dealing with neuroses, came into existence in 1895, when Freud and Josef Breuer jointly published their "Studies in Hysteria." This is generally accepted as the first event in the history of Psycho-analysis.

Psycho-analysis seeks to understand the dynamic processes of the mind, the motivation, purposes and tendencies, that produce a particular mental attitude or reaction. By means of this *method* Freud studied repressed experiences (emotions), which he called "complexes", buried in the unconscious mind of neurotic patients. Freud demonstrated that psycho-analysis is not abstract and remote from ordinary life. The implications of the Freudian doctrines have not escaped the attention of students in many fields. Making its first big stride forward at the close of the First World War, it has to-day affected almost every branch of knowledge that deals with the life and works of man, including art, literature, social science, psychiatry, æsthetics, ethics and religion.

It was not long before there were three masters in the field—Freud, Jung and Adler. Each, confronted by the same facts, made the facts fit his own widely divergent concepts. Each held contrary views on the basic principles of human motivation. Freud regarded the basic impulse of life as that of sex, Jung as that of self-preservation or the will to live, and Adler as the will to power. Adler joined the Freudian circle in 1900, and seceded from it after ten years. He ascribes—in his *Individual Psychology*,—only a minor rôle to the sex factor. He contends that sexuality is a manifestation or a symbol—the desire for power. His theory is the simplest of the three.

There are many other serious divergencies, yet all three leaders of the principal Schools claim remarkable successes to their credit in the sphere of treatment. One has to marvel at the air of complete certainty with which the divergent views are expounded.

"The divergence of opinion," writes Prof. Flügel, "is fundamental, and is too great to permit of the use of a common name." We are told that it is a misunderstanding to define psycho-analysis as a hydra-headed monster, or to say that the psycho-analytical garrison is divided into a large number of discordant bands, for Freud reserved the terms "psycho-analysis" and "psycho-analytic" for his own School, which is by no means discordant. Since he is the originator of psycho-analysis he is, I suppose,

entitled to do this; and the "discordant bands" have no claim to the title. Psycho-analysts *in the strict sense* are those Freudians whose names appear in the List of Members and Associate-Members of the International Psycho-Analytical Association. This Association held its first meeting in 1908.

It has to be admitted that among psycho-analysts of the dominant section, represented by Freud and his disciples, the scope of agreement is surprising, if not impressive. For the most part Freud's followers have remained very faithful to him. Nearly all of them accept the doctrine of the "Oedipus Complex"\* from which Freud professes to derive religion. Practically all of them grant the existence, and agree about the meaning and significance of certain symbols.

In relation to the Christian religion the psycho-analysts are by no means unanimous. Some of them by their writings are causing Christians considerable perplexity and misgiving. Directly, or by implication, they challenge the Christian faith and conduct, and make their "New Psychology" a substitute for religion. Others take little interest in religion; treating it with indifference or contempt.

Some Freudians deny that psycho-analysis is out to *attack* religion. They admit that there is a definite strain of bitterness in Freud's *The Future of an Illusion*, which is generally regarded as fairly representative of the psycho-analytical attitude to religion. But they maintain that the characteristic psycho-analytical attitude towards religion is not one of attack, but one characterised solely by an attempt to formulate a Psychology of Religion. "Psycho-analysis is a method of investigation, an impartial instrument."† In one place Freud does say that religion is "a narcotic." It is also true that he classes it as an "illusion," but he takes pains to define what he means by "an illusion." "An illusion," he says, "is not the same as an error, it is indeed not necessarily an error." He also says: "We call a belief an illusion when wish-fulfilment is a prominent factor in its motivation, while disregarding its relations to reality."‡

\* The desire, usually unconscious, of the son to possess the mother, and to be hostile to the father, or destroy him; an excessive erotic attachment of the son to the mother and an aversion from the father as his rival for the mother. The concept is Jungian. It is used, if at all, by Freudians purely in a *descriptive* sense, in such a phase as "castration complex." The term "situation" is preferred.

† *The Future of an Illusion*, p. 64.

‡ *Ibid*, pp. 53 and 54.



Of course, the arguments used to show that religious beliefs are illusory could with equal cogency lead to the conclusion that psycho-analysis, and for that matter all science, is illusory. What Prof. F. H. Bradley says is true: "There is nothing more real than what comes in religion. The man who demands a reality more solid than that of the religious consciousness knows not what he seeks."\*

One aspect of psycho-analysis is destructive and subversive of much that is dear to Christians. Another is constructive, illuminating and valuable, shedding light on the basic facts and experiences of the religious life. At one time psycho-analysis seems to be opening up to the Christian minister possibilities hitherto undreamed of in pastoral work and in the understanding and training of the soul. At another it seems to drive the last nail into the coffin of Christianity.

The importance of the contribution which psycho-analysis has to make in the sphere of religion should not be underestimated. It reinforces some of the main principles for which the Christian has to contend. In various ways it justifies and confirms the Faith. It renders service in describing the way in which the mind works in relation to religion. It gives an account of religious dogma (belief), religious feeling, and religious rites (ways of behaving), and is thus of value in the exercise of the teaching office of the Church. It has to do with the mental origins of the religious mode of adjustment, as it is found in the average religious individual (though the actual *beginning* of religion in the soul is beyond its ken). It is also helpful in dealing with the origin of the individual differences in the religious adjustment; why, even under the same social influences, one person is strongly religious and another irreligious, and why one finds his spiritual home in one form of religion, while another finds it in another. It helps in the understanding of some religious difficulties: some of these are not really religious, but psychopathic; like religious doubt due to "anxiety," and loss of the sense of the value of prayer produced by "apathy." It throws some light on the mystery of the Atonement. The psycho-analytical concept of "ambivalence" (the co-existence of opposed feelings: e.g. when a boy's feeling towards his father is a mixture of love and hate), helps us to understand certain aspects of temptation

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\* Quoted by W. R. Inge, *The Fall of the Idols*, 1940, p. 299.

and of forgiveness. It points out, for instance, that to disown "guilt," and then to project it on others, or on the world, is not forgiveness. Nothing reduces mental tension like Christian forgiveness. Psycho-analysis helps us to analyse and understand the conditions of the conversion-process, but does not, and cannot explain all of the factors and forces involved. It can tell us nothing about the operation of the Spirit of God, which we know to be among the factors which produce the change: "By grace were ye saved, through faith, and that not of yourselves, it is the gift of God." Personality and character is changed by conversion to a greater extent than by psycho-analysis. The psycho-analytical mechanism of "identification" helps us to understand how union with Christ is achieved. The concepts of "repression" and "the unconscious," aid us in the understanding of what is meant by "putting off" the "old man," the "first man," the "natural man," and "putting on" the "new man," whom Christians hold is dominated by the Spirit.

Recent developments of psycho-analytical theory are profound and far-reaching. There is, for example, Freud's division of the fundamental human instincts into two groups—the "life instincts" (libido), and the "death instincts" or destructive instincts directed outwards against others. In "The Ego and the Id," the libido is broadly conceived by Freud as representing all the urges in human nature which bring human beings together, in contrast to the aggressive instincts which drive human beings apart. There is a close correspondence here with religious ideas about God and the devil as universal beings with conflicting aims.

Another recent feature of psycho-analytical theory is the conception of "restitution," for which Melanie Klein is responsible. This concept is based upon the observation of a deep-seated tendency in human nature to attempt to restore what the aggressive impulses threaten to destroy. The idea of "restitution" has a bearing on the doctrine of salvation. Let Freud speak of the "phantasy of salvation" ("Moses and Monotheism," p. 139), we know that religious salvation is greater than psychological adjustment, call it "restitution," or "integration": it is redemptive, affording positive and permanent relief.

The psycho-analysts do not deny that religion is a factor of primary importance in the building up of a sane and integrated personality. Many of them acknowledge the power of religious faith in dealing with sick souls. As regards the question of

religion and neurosis Freud\* says: "The true believer is in a high degree protected against the danger of certain neurotic afflictions: by accepting the universal neurosis, he is spared the task of forming a personal neurosis." Freud's general attitude appears to be fairly well summarised in the sentence: "Religion has performed great services for human culture. It has contributed much toward restraining the asocial instincts, but still not enough."† In "Moses and Monotheism" Freud attributes the beneficial results to a false and evil cause—to a neurosis. He holds that an obsessive character appertains to religious phenomena (p. 163). Is it, one may ask, a neurosis (religion) that has helped mankind to overcome his fears? Is it a neurosis that is the greatest factor in social progress, as Benjamin Kidd declared religion to be?

Whatever motives psycho-analysts may regard as operative in the psychology of religion, the following sentence quoted from an article entitled, "The Individual and Society," by Ernest Jones‡—a psycho-analyst in the strict sense—may be taken as representative of the general attitude of psycho-analysts: "In the history of the world religion has proved perhaps the most powerful help to human weakness, of man's constant endeavour to cope with his own nature."

On the final page of his *Terry Lectures*, Jung § writes in similar terms: "The thing that cures a neurosis must be as convincing as the neurosis; and since the latter is only too real, the helpful experience must be of equal reality. It must be a very real illusion, if you want to put it pessimistically. But *is* the difference between a real illusion, and a healing religious experience? Nobody can know what the ultimate things are. We must, therefore, take them as we experience them. And if such experience helps to make your life healthier, more beautiful, more complete and more satisfactory to yourself, and to those you love, you may safely say, "This was the Grace of God." In a review of Jung's more recent book, "The Integration of the Personality,"|| the reviewer concludes: "Jung, apparently basing his views on a rather superficial understanding of the

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\* *The Future of an Illusion*, p. 77.

† *Ibid.*, p. 65.

‡ *The Sociological Review*, July, 1935, p. 255. This article is recommended as an illuminating exposition of the wider implications of psycho-analytical theory in its bearing on all social phenomena, including religion.

§ *The Psychology of Religion*, 1938, p. 114.

|| *British Journal Psychology*, 1941, p. 272.

potentialities, as against the actualities, of the Christian religion (especially of Protestantism), seems to dismiss the possibility of any help from that quarter," in the ordinary man's dealing with the disruptive functioning of the unconscious in the personality. Jung could give no definite religious guidance to his patients, for his own religion was of the most nebulous kind.

Dr. Hadfield is less suspicious of the truth of religion than is Jung: "I am convinced that the Christian religion is one of the most valuable and potent influences we possess for producing that harmony and peace of mind and that confidence of soul, which is needed to bring health and power to a large proportion of patients. In some cases I have attempted to cure nervous patients with suggestions of quietness and confidence, but without success, until I have linked those suggestions on to that faith in the power of God which is the substance of the Christian's confidence and hope."\* If religion is the best and surest means of perfecting the good work begun by psycho-analysis (which is the view of Dr. Wm. Brown), it is likewise the best means, and sometimes the only means, of dealing with many of the psychological conditions precipitated by psycho-analysis.

It is the theory of "infantile sexuality" that is meant, when it is said that psycho-analysis has finally disposed of religion. According to Freud, psycho-analysis has "traced the origin of religion to the helplessness of childhood, and its content to the persistence of the wishes and needs of childhood into maturity." Freud now observes†: "The information about infantile sexuality was obtained from a study of men, and the theory deduced from it was concerned with male children. It was natural enough to expect a complete parallel between the two sexes: but this turned out not to hold. Further investigations and reflections revealed profound differences between the sexual development of men and women . . . ." We still await the evidence and the proof that the existence of the Oedipus Complex is quite general in infancy.

Freud denies the objective existence of God. The "idea of God" is simply an "image" which the mind of man has "projected" out of a sense of need—the need for protection—as a result of his tendency to personify his ideas. God is a "defence mechanism," a form of "infantilism," a "regression." But Christians do not invent a God simply because it is *pleasant* to

\* *The Spirit*, edited by Streeter, p. 113f.

† *Autobiographical Study*, 1935, p. 65.

believe in such a Being. They know that God's love can be angry. An indulgent God is not the Bible conception of Him. The New Testament declares that judgment is God's alternative to salvation.

If God is a "mere phantasy," then it has to be admitted that belief in Him is keeping multitudes out of the psycho-analysts' consulting-rooms.

Sin is a purely religious concept. So it is not to be expected that the doctrine of sin should form part of any psychological theory; but the "sense of sin" in the individual mind is regarded as falling within the province of psychological study. The psycho-analyst regards the sense of sin, or "guilt" as he would prefer to call it, as a special form of "anxiety," experienced by the ego in the presence of a conflict between the aggressive id-impulses and the ego-ideal (super-ego)\*—the anxiety experienced by the ego when the ego is condemned by the ego-ideal for entertaining aggressive id-impulses.

A certain class of "sins" is regarded by the psycho-analyst as psycho-pathological phenomena, for example the sexual perversions; but in one of his quite early writings, Freud ventured the statement that the neuroses were the *obverse* of the perversions; and the general psycho-analytical view of the neuroses is that they represent an attempt to deal with guilty impulses, in such a way as to ensure that the individual concerned shall atone for harbouring them by suffering: a view, incidentally, which involves attributing to the unconscious, highly moral as well as highly "immoral" elements. Freud states specifically in "The Ego and the Id," *à propos* of the super-ego, that if man is more immoral than he knows, he is also more moral than he knows.

Now, while psycho-analysis has helped us to see more clearly what the consciousness of sin involves, its view of sin itself cannot be accepted by the Christian, who holds that deliverance from sin is not achieved merely by the discovery and knowledge of the forces behind it. Aware of being responsible for their actions men want to know how to get rid of their sin, and so get right with God. The sinner who wants to be reconciled to God can get no help from the psycho-analyst. Where there is no belief in God there can be no adequate sense of sin in the

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\* "Super-ego"; the self-criticising part of the mind out of which develops the conscience. The super-ego, ego and id, are comparable to the New Testament trinity of spirit, psyche and flesh.

Christian sense. "In trying to extirpate shame," writes C. S. Lewis (*The Problem of Pain*, p. 33), "we have broken down one of the ramparts of the human spirit. I do not know that there is anything to be done but to set about rebuilding as soon as we can. The "frankness" of people sunk below shame is a very cheap frankness."

The psycho-analytical concept of "repression" has led to much misunderstanding; and yet it is, perhaps, Freud's most valuable contribution. Repression is an *unconscious* process which, although persisting in adult life once it has become established, is essentially a process initiated in early life. As a means of dealing with instinctive impulses it is the primitive alternative to the more mature method of self-control; and excessive repression in childhood is found actually to compromise the development of self control as the child grows up. The result of excessive repression in childhood is to produce a situation characterised by the co-existence in the unconscious of a harsh relentless super-ego, and a highly energised fund of primitive and rebellious id-impulses. The existence of such a situation renders the development of self-control more difficult, and throws the individual back on more primitive methods of dealing with instinctive impulses. With the object of avoiding such a situation, the psycho-analyst advocates a greater toleration of the child's instinctive satisfactions on the part of the adult: but this must not be taken as implying any depreciation of self-control in the adult. On the contrary, this attitude is adopted in the interests of the capacity for self-control.

It is frequently incorrectly stated that psycho-analysts believe that nervous breakdowns can be avoided by immediate gratification of the impulses. Actually, such gratification is often the *occasion* of nervous and mental breakdowns. Over-indulgence or undue repression is alike dangerous. In general, inability to tolerate the frustration of impulses is regarded as one of the prime characteristics of neurotic individuals. It is evidence of the dominance of the "pleasure-principle," by which it is natural that behaviour should be governed in early childhood, but which comes to be replaced by the "reality-principle," in so far as emotional maturity is attained. One of the effects of psycho-analytical treatment is to promote the substitution of the "reality-principle" for the "pleasure-principle," and thus to enhance the capacity of the individual to endure the frustration of his impulses. Most psycho-analysts would agree—in spite of

popular belief to the contrary—that indiscriminate and immediate satisfaction of the impulses would make social life impossible. They do not say that the super-ego should be abolished: it is necessary to have rules of conduct. In Freud's words: "Every culture must be built up on coercion and instinctual renunciation."\* "Repress or satisfy" are the alternatives of the neurotic; but psycho-analysis fully recognises a third alternative, "self-control." Indeed, it might truthfully be said, that the psycho-analyst regards the capacity for conscious self-control, without resort to repression, as constituting his criterion of emotional maturity and successful adaptation to life.

#### GENERAL CRITICISMS.

Extravagant and fantastic claims have been put forward by the too ardent supporters of Freud. Their charges against religion need cause little apprehension, for they are derived from a partial and biased view of the facts as all Christians know them by personal experience.

It may be said that the psycho-analyst deals with his subject "in vitro," neglecting human life as a whole. We must take the whole range of experience into account: the emphasis is false: the proportion is mistaken. For instance, the problem of human suffering should not be, and cannot be, studied merely in relation to masochism. It must also be approached as a philosophic question. And what Scripture teaches cannot be discounted. Similarly, though many ideals contain high proportions of Id motivation, narcissian interests, and super-ego compulsions, it is ridiculous to claim that *all* ideals are so composed as to their total constitution.

The psycho-analytical method has inherent limitations. Description of a mental process is not explanation, and explanation in the religious sphere does not explain *away*. The facts and experiences of religion cannot be explained without reference to God as an operative Power in human life.

Many of the "conclusions" of the psycho-analysts are based on the minimum of observed fact, and are highly conjectural. There is too little exact observation, and too much inexact imagination. Until much more is established fact as the result of psycho-analysis becoming more truly scientific, we need not be dismayed at their speculations and conjectures regarding religious experience, and the reality of God the Father.

\* *The Future of an Illusion*, p. 11.

Freud must *prove* his statement that "religious phenomena are to be understood only on the model of the neurotic symptoms of the individual."\* One of the most frequently occurring words in the book quoted is "perhaps." "A hypothesis that would seem to be inevitable" (p. 196), is the nearest approach to proof.

Moreover, whatever justification there appears to be for the extension of the theory from the pathological to the normal—and the psycho-analysts claim to detect the same mental mechanisms at work in the "normal" as in the psycho-pathological—it is unscientific and unsound to argue and generalise from the abnormal to the normal, *without qualification*: "The normal mind is one thing," writes Dr. Wm. Brown, "the abnormal mind is another." It is equally unsound to over-emphasise the abnormal in the application of psycho-analytical findings to religious phenomena. Religion should be judged by its *final* stages, and at its highest and best, whatever its origin. To explain the beginnings of religion from "below," seeking to prove that it springs from lowly origins, is not to discredit it; value is independent of origin.

The psycho-analytical method of investigation is one thing, and the philosophy that permeates Freudian pan-sexual terminology quite another. Psycho-analysis has no right nor power to attempt the solution of questions that are the concern of philosophy and theology.

There is no reason why the Christian should be afraid of what psycho-analysis may do to religion. It is still very much in process of development as regards its most fundamental concepts. Already many of the earlier assumptions of the Freudian system have been discarded.

The psycho-analysts should try religion out, as well as analyse it. It is not New Testament Christianity that Freud writes about. It is everywhere patent that religion to him meant the practice of traditional Judaism. Freud is thinking only of the external (the ceremonial) elements of religion. He ignores the higher and inward elements that have their place in the Christian religion: e.g., disinterested altruism, charity, creative vision, adventure (often apparently irrational), and personal idealism. "Freud does not attempt to explain religion," writes Dr. Wm. Brown,† "but only that superstitious mixture of selfishness, credulity and cowardice, miscalled religion."

\* *Moses and Monotheism*, 1939, p. 93.

† *Psychology and Psychotherapy*, 3rd Edition, p. 195.



## DISCUSSION.

Rev. HORACE R. A. PHILP, M.B., Ch.B., said : I have not had the opportunity of seeing the proof of the paper, but I am glad to have had the opportunity of hearing it read, as Dr. Conn can speak with authority and not as the scribes.

What an influence Jews have had on the world for evil as well as good. Much of the sufferings of Europe to-day can be traced back to the effects of the teaching of the Spanish Jew, Simon Maimonides, 1135-1204, on Spinoza and other leaders of thought in Germany. Freud in another Jew, whose influence is far reaching.

I feel that it is not enough to consider the purely scientific aspect of this subject. There is an aftermath in a flood of popular literature, which is having a baneful effect on many young people. I read from a magazine article (published Nov. 1941), *The Faith of a Psychologist* : "Do I believe in God? Not as a Being to be placated and worshipped . . . The importance of Christ to my mind is not that he revealed God to man, but that he showed clearly what should be the right relation of man to man."

Such popular teaching is definitely anti-Christian, and is a pantheism closely related to spiritualism. Indeed there is need for more research to be done on the relationship of this type of psychology to spiritualism : *e.g.*, in the famous case of Miss Beauchamp, recorded by Morton Prince, there is evidence of contact with spiritualism.

Mr. E. J. G. TITTERINGTON said : I have no claim to speak as a psychologist, but I am gratified that this important subject has now been dealt with in a paper read before the Institute. I was particularly pleased to see Dr. Conn's remarks that "religious salvation is greater than psychological adjustment" (p. 120) ; "the sinner who wants to be reconciled to God can get no help from the psycho-analyst. Where there is no belief in God there can be no adequate sense of sin" (p. 123) ; and again, "description of a mental process is not explanation, and explanation in the religious sphere does not explain *away*" (p. 125).

The trouble is that the language of the new psychology has obtained a popular currency, and there is grave danger of overlooking this important fact. The human mind has always been eager to grasp at an explanation of sin that will rob it of its sinful-

ness, and the conceptions of "complexes" and "repressions" and the like, as popularly understood, seem to have provided a new machinery to this end—may we say, an "escapist" phenomenon?

It must be extraordinarily difficult to disentangle those elements inherent in human nature as it was created, and those resulting directly or indirectly from the Fall, especially since there has never been an opportunity of studying the psychology of what may perhaps be termed a perfectly normal individual, unvitiated by any such evil principle. May we regard the resolution of complexes, repressions, inhibitions and the rest as included in the promise, "Whomsoever the Son makes free, is free indeed"

#### WRITTEN COMMUNICATIONS.

Rev. Principal H. S. CURR wrote: I have enjoyed the perusal of Dr. Conn's paper, not only on account of its clear exposition of psycho-analysis, but also its spirit of mingled sympathy and criticism, the latter being based on the principles of the New Testament. The paper makes it clear that there is a certain amount of truth in this new phase of psychological science, but the truth is interwoven with error.

Pursuing that line of thought, one wonders if it is possible to understand human personality exhaustively with the aid of such categories as these employed by Freud, Jung, and Adler. One obvious comment is that they fail to do justice to the essential dignity of human nature. After all has been said and done, man was made in the image of Almighty God (Genesis i, 26-27): And God said, "Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth. So God created man in his own image, in the image of God created He him; male and female created He them." And again, Psalm viii, 3-4: "When I consider Thy heavens, the work of Thy fingers, the moon and stars which Thou hast ordained; what is man that Thou art mindful of him? and the son of man that Thou visitest him? For thou hast made him a little lower than the angels, and hast crowned him with glory and honour." In the same strain Shakespeare writes,

“ What a piece of work is a man ! how noble in reason ! how infinite in faculty ! in form and moving how express and admirable ! in action how like an angel ! in apprehension like a god ! ” (Hamlet. Act II, Sc. 2). Pascal was surely much nearer the root of the whole matter than the psycho-therapist school of psychologists when he described man as at once the glory and scandal of the universe.

I am at a loss to know as to whether the psycho-therapist regards the mind of man as suffering from aberration, or as to whether the troubles which he claims to diagnose so ingeniously are nothing more than the growing pains of human personality like the traditional awkwardness of adolescence, destined to disappear with development. From the standpoint of evolution, the latter theory is of course the true one. On the hypothesis of the historic orthodoxy of the Christian Church, man's condition is due to the fact of sin. His strange complexes are the wages of evil inherited from his ancestors as far as our first parents. If Freud and the others who take much the same view regard man's infirmity as a malady, then their contentions can be cited in support of the proposition that man is a fallen creature.

In one of his sermons the late Principal Alexander Whyte of Edinburgh quotes the words of Macbeth to his physician—

Canst thou minister to a mind diseased (Act V, Sc. 3).  
He then refers to Charlotte Elliott's famous lines :

Just as I am—poor, wretched, blind ;  
Sight, riches, *healing of the mind*,  
Yea, all I need, in Thee to find,  
O Lamb of God, I come.

Mr. W. E. LESLIE said : A practical example of Freudian explanation may give a clearer impression than argument. The following case is taken by Hollingworth (Abnormal Psychology 131) from Ernest Jones. A young man is afraid of heights, particularly if there is water below. If another male be present, he fears he will throw him (the patient) over. The Freudian explanation is that the patient desires a moral fall (incestuous desire for his mother) manifested as a fear of a physical fall. The water recalls pre-natal uterine experience. The feared male companion is his Father (his rival for the affections of his mother). But then it appears

that at the age of 3 the patient was held over a water butt with the threat that he would be dropped. At 7 a man held him head downwards over a high wall with a similar threat, and at 9 his Father forced him to walk round a platform at the top of a high tower in abject terror. The reader may accept whichever explanation he prefers.

Two points on the paper. Why is not Freud analysed to remove the pathological bitterness mentioned on page 118?. On page 120 union with Christ is surely something that is objective although we may experience the consequences of it.

Mr. DOUGLAS DEWAR wrote : Apart from the serious evil it has wrought, is Freudism worthy of serious attention? Biologists have little use for it. Prof. J. B. S. Haldane says (*Science and the Supernatural*, p. 63) : " I do not think that psycho-analysis can be described as scientific. Its methods are not those of science. If Freud be right, he reached correct conclusions by insight and imagination, literary rather than scientific methods."

Freud based his theory on his observation of a number of wealthy neurotics at Vienna. A theory of the human mind based on minds in a diseased state is of much the same value as one based on the conduct of the inmates of a mental hospital.

Most psychologists reject Freudism. Dr. Conn has recorded in *The Evangelical Quarterly* of April, 1939, the views of some of these : Thus, J. Drever writes : " Psycho-analytical theory (like behaviourism) is guilty of ignoring the principles of science by going far beyond the observed facts, and ignoring the limitations under which the facts have been observed," and A. Wohlgenuth writes : " Nowhere in the whole of Freud's writings is there a shred of proof, only assertions, assertions of having proved something before, but which was never done. . . . For psychologists, in general, psycho-analysis was still-born, and has ever been as dead as a door-nail."

I think nearly all well-educated laymen reject Freudism. Gerald Heard in *The Third Morality* suggests that the success of the Freudian hypothesis was due not to proof but to prejudice. It was, in his opinion, a desperate hope of saving materialism that led to its acceptance without proof. He shrewdly points out that shell-

shock does not fit in with the theory. "In war," he writes, "sex is free but safety is correspondingly scarce. War neurosis is due to fear, not to lust . . . the sub-conscious desire which could paralyse man's body or dement his mind was the passion for safety, not sex."

*The Daily Telegraph* calls Freud "the father of Psycho-analysis." He is merely the inventor of the name. He borrowed the idea from Breuer, elaborated and popularised it, and invented a jargon to describe what he imagined to be various human instincts and states of mind.

His theory that man is only an animal and all his ideals and aspirations are only perversions of sexual energy, and that society has forbidden the natural employment of this energy except under inadequately satisfying conditions, naturally made a wide appeal. Some publishers seized upon the theory as a means of producing best-sellers. "The craze" writes Canon Raven (*The Creator Spirit*, p. 139) "had all the qualities that make for a popular success. Its esoteric jargon, appealing to the priggishness of the half-educated; its claim to secret knowledge, flattering the vanity of its initiates. . . To the boy tempted by sex or the girl discontented at home comes the message that repression is disastrous. . . All the intimacies and decencies of life were convention and prudery; beneath the mask and even below the conscious level lay naked animalism and primitive lust."

To describe Freudism as a farrago of pernicious nonsense is perhaps to condemn it too severely, but it may fairly be described as a barrel of chaff in which lie two or three grains of wheat. It seems to me that Mr. Conn makes far too much of these few grains. The idea of a Christian deriving *any* benefit from Freudism is on a par with that of a skilled painter learning anything about painting from a man blind from birth.

#### AUTHOR'S REPLY.

(1) (Reply to Dr. H. R. A. PHILP). Freudian pessimism is one of the modern fruits of the romantic naturalism and nihilism of Nietzschean thought. Freud was influenced by the mechanistic philosophy of the nineteenth century.

In the welter of literature that has appeared on "multiple personality," Morton Prince's presentation of the Beauchamp case is the most exact and helpful.

Freud's theory of the Co-Conscious has some bearing of "demoniac possession." The demon is held to be part of consciousness split off from the main stream.

Freud's theory of the unconscious closes the door to the possibility of superhuman influences through the unconscious. His theory is, I think, at least a little better than Spiritualism. Freud himself would deny any association with, or resemblance of, his teaching to Spiritualism. Indeed, he is as critical of Spiritualism as he is of religion in general. (See "The Future of an Illusion" p. 48.)

(2) (Reply to Mr. E. J. G. TITTERINGTON). Religion for Freud is but a phantasy escape from reality: we can say the same thing of his conception of complexes and repressions.

Freud seeks to explain human nature through its aberrations and abnormalities, and claims that the extension of the theory from the pathological to the normal is justified. But the theory of the ego has not gained much from the abundant pathological evidence supplied by Freud.

We do know what a normal man and a perfect life are. Jung speaks of Jesus as, "this apparently unique life" ("The Integration of the Personality," p. 297). No man has ever lived who was more completely conscious and sane.

Psychological bogies like inhibitions, frustrations, phobias, complexes, regressions, phantasies, defence-mechanisms and obsessions, can best be cast out of the mind by the religion of Jesus Christ. When the "transference-love" is turned over to Him He sets us free from the tyranny of self. Thus delivered by Him from the spell of self we share His own power and peace.

Religion can alter radically personalities in the direction of psychological maturity.

(3) (Reply to Rev. Principal H. S. CURR). Freud has done more for the advancement of our understanding of human nature than any other man. But his is a false philosophy of the nature of man. He holds no good opinion about human nature. Freud says: "The belief in the goodness of man's nature is one of those un-

fortunate illusions which in reality bring only disaster": a statement that does not conform to the Christian's experience of life. Surely Freud was unfortunate in his friends! The same criticism cannot be made against Jung, who writes: "It was a turning-point in the history of mankind when he recognised a redemptive principle in his concern for the future of the race."

For an adequate analysis of human personality, a set of categories more peculiarly subtle than the Freudian is required. Personality is a very illusive thing, and Freud's analysis is but half the story. His categories are purely naturalistic. He pretends to explain man in biological terms.

An essential part of the reality of man's make-up is omitted by Freud. The Christian conception of man is the only adequate one. For an excellent criticism of the Freudian doctrine of man, consult R. Niebuhr's "The Nature and the Destiny of Man," Vol. 1, 1941, p. 45 f., and 253-4.

Psycho-analysis gives a fresh insight into the story of the Fall, but does not answer the question *why* "all have sinned": it only acquaints man with what he already knows—that he is a fallen creature. For all we know complexes are peculiar to man, and are associated with his fallen nature.

Psycho-analysis is a system of palliatives: it cannot solve the problem of sin.

(4) (Reply to W. E. LESLIE). The environment can cause well-grounded fears. Why must we assume then that an "anxiety" is not concerned with outer situations—as in the case of the young man afraid of heights?

I did not employ the phrase "pathological bitterness." But there are statements in Freud's writings that deserve to be called, "a strain of bitterness."

One should bear in mind the isolation, the ridicule and the opposition, which Freud had to contend with from the first, not least from the Church. Until he was fifty he was personally despised, and his teaching was rejected.

Breuer, Freud, Janet, Jung and Adler—one and all are guilty of depreciatory and spiteful remarks about each other.

These personal antagonisms lend significance to the surprise Freud is reported to have expressed, that his antagonists had not

concentrated their attacks on the weakest point of psycho-analysis—namely the psycho-analysts.

The psycho-analysts do not appear to have any unusual power of control over themselves, and are indistinguishable from others making no such claim to self restraint. One would expect the analyst's attainment of "object-mindedness," or the "detached attitude" towards his patients, to cast out all ill-feeling and pettiness, at least between colleagues. Analysis is supposed to free the individual from the influence of mental mechanisms which are liable to become tyrannical and compulsive. And because treating patients lights up his own complexes, in spite of the fact that the analyst himself has been analysed, Freud's last recommendation (1937) was that, "the analyst should submit to being re-analysed every five years as a routine."

H. Crichton Miller, referring to junior colleagues who cherished resentment towards him, tells of one who, after a ten years' lapse, forgave him by reason of a Group Movement conversion. He deduces from this, "that the particular brand of religion referred to can achieve for some readjustments that cannot otherwise be attained" ("British Journal of Medical Psychology," Vol. 16, 1937, p. 166).

Christians know that conversion, by mitigating the frustrations which provoke "aggression," reduces the aggression (pugnacity).

Nevertheless, what so many Christian critics have to say about psycho-analysis, "scarcely lends itself to courteous statement" (Dean Inge).

Psycho-analysis helps us to understand *how* the grace of God saves, though it eliminates all reference to the Spirit of God, as among the factors which produce the change. Psycho-analysis may help us to understand the conditions of the process, and to distinguish between the normal and the psychopathic. The process of "identification" with an ideal (*i.e.*, Christ), was recognised by New Testament writers, and called "rebirth" (St. John iii, 3; 1 Cor, xii, 16; Col. iii, 11; Gal. iv, 19).

The psychological mechanism of such an "identification" is well known to psycho-analysis. P. Hopkins writes ("British Journal of Medical Psychology," Vol. 18, 1939, p. 217): "To some extent the series of progressive steps by which the great end of reconciliation,



and final union with the father-*imago* in the person of God, can be achieved seems to correspond with the progress of a neurotic patient."

According to Freud "identification" is a complicated process. He does not feel that he has fully understood it. (See "New Introductory Lectures on Psycho-analysis," pp. 85-87.)

That the childhood formation of the "super-ego" and adult "conversion" are to some extent analogous, can hardly be denied. Psycho-analytic terminology is different from, but is no more effective than, the language of scripture.

(5) (Reply to Mr. DOUGLAS DEWAR). Is Freudianism worthy of serious attention? What is Freud's own opinion about psycho-analysis? He says: "There was a time when people attacked analysis with the accusation that it was not to be taken seriously as a therapy. . . . I may say that I do not think our successes can compete with those of Lourdes. There are so many more people who believe in the miracle of the Blessed Virgin than in the existence of the unconscious" ("New Introductory Lectures on Psycho-analysis," p. 195). "If psycho-analysis had no therapeutic value it would not have been discovered from clinical material and would not have continued to develop for more than thirty years" (*ibid.*, p. 201). "There can no longer be any doubt that psycho-analysis will continue: it has proved its capacity to survive" ("An Autobiographical Study," 1935, p. 135).

The attitude of academic psychologists is perhaps best stated by Spearman ("Psychology Down the Ages," Vol. 1, pp. 360-1): "It would appear that the great majority of competent psychologists have resolutely rejected or even ignored it. But practising psychiatrists on the other hand, seem to be turning towards it in increasing numbers. The most judicial attitude of experts towards it is that of Bernard Hart which he calls a 'benevolent scepticism.' The attitude of the plain man towards the doctrine may be expressed in the well-known lines of Pope: 'It is a monster of so frightful mien.'"

As regards the criticism that psycho-analysis is not scientific. Psycho-analysis rarely, if ever, uses such methods as correlation co-efficients, standard deviations, and calculated averages. But certain psycho-analysts, among them Franz Alexander and his

colleagues in Chicago, are beginning to pay attention to the planning of controlled and systematic investigations of particular problems.

The charge against psycho-analysis that it is unscientific is considered by Freudians to be extremely unfair; for if patient observation, careful analysis and rigorous logical procedure are criteria of scientific method, the psycho-analytic mode of investigation would seem to have, it is claimed, the necessary qualifications. Furthermore, if the customary experimental and mathematical methods of the psychological laboratory, borrowed as they are from physical science, are to be regarded as providing the only legitimate path of approach for the study of mental processes, it will be a long time, so it is asserted, before we know much that is valuable about human nature.

Freud's complaint against his opponents is that "they tend to regard psycho-analysis as a product of my imagination, and refuse to believe in the long, patient, unbiased work which has gone to its making." ("An Autobiographical Study.")

To the psycho-analyst the specially coined terms he invents and employs are not incomprehensible jargon. Psycho-analytical terms have a very definite meaning, and are used in a very specific scientific sense. At the same time, the lay-reader who complains about the "esoteric jargon," may be excused for wondering why the "oral œdipus-situation" cannot be called simply the "mouth-phase of development."

Psycho-analysis suffers from and deplores the popular misapplication of its precise terms by those who are ill-informed on the subject. When psycho-analysts express themselves in terms of common speech—and more and more they are doing so—there will be fewer misapprehensions and popular misinterpretations of what psycho-analysis really is, and less occasion to go to the many self-styled followers of Freud, and to the daily Press, and popular magazine articles for authoritative statements and enlightenment.

It is unfortunate for Freud that his theories have attracted so many charlatans, who have often obscured any merits his psychology possesses. Psycho-analysis has been too much in the public eye for its own good and for the public's good.

By way of contrast to Heard's statement about "saving materialism," I should support this quotation from an essay by C. S. Lewis

(“Essays and Studies,” by Members of the English Association, Vol. XXVII, 1941: ‘Psycho-analysis and Literary Criticism,’ p. 20): “Psycho-analysis heals some of the wounds made by materialism. For the general effect of materialism is to give you, where you expected an indefinite depth of reality, a flat wall only a few inches away. Psycho-analysis offers you some kind of depth back again—lots of things hidden behind the wall. Hence those who have once tasted it, feel that they are being robbed of something if we try to take it from them.”

Early in his career Freud was accused of plagiarism in relation to Janet’s theories, Charcot’s investigations upon hysteria, and likewise Breuer’s.

Freud takes little credit for his part in “Studies in Hysteria”: he gave nearly all to Breuer. But Freud claimed that “it would have been difficult to guess from the book what an importance sexuality has in the ætiology of the neuroses” (“An Autobiographical Study,” p. 39); and that “in deriving hysteria from sexuality I was going back to the very beginnings of medicine, and was following up a thought of Plato’s” (*ibid*, p. 42).

A quite new understanding of the neuroses was given a new name—psycho-analysis—by Freud in 1896. He is the father of psycho-analysis as we know it to-day.

Freud was always ready to acknowledge his indebtedness to others, but the truth is that he was a man of remarkable independence of judgment, and an original authority on mind. And his contribution to the study of mind is a great advance in the subject.

I claim that psycho-analysis can be a valuable ally to, though not a substitute for, religion. Let me quote from the letter of a private correspondent (H.I.C.): “Many deeply religiously-minded people to-day are finding new life and religious liberty as a result of psycho-analytic treatment. Religious folk and neurotics are very far from being mutually exclusive: and as far as the Jungian school is concerned, it is more often than not men and women of sincere religious convictions who visit the consulting-room, because they have the courage to face the fact that their religion and their life are much at variance. May I add that many of us have found in the consulting-room a way to new freedom and power in our religious life.”

Religion is not just a form of psycho-therapy. At the same time spiritual healing is a reality, and there is a vast field open for its application. Much of our Lord's Ministry was devoted to the healing of the sick, and He commissioned His disciples and His Church to continue that ministry. Christians may learn something even from Freud's errors.

#### SUBSEQUENTLY RECEIVED.

Group-Captain P. J. WISEMAN wrote: Sigmund Freud needs to be analysed. Shortly before he died he published a book entitled "Moses and Monotheism"; he says that it is a "an application of psycho-analysis" and "based on psychological probabilities." If anyone is inclined to regard Freud as an unbiased investigator, this perverse book is a sufficient illustration of his methods. The point of view taken in this analysis of Moses is stated on p. 194 as "we can only regret it if certain experiences of life and observations of nature have made it impossible to accept the hypothesis of such a Supreme Being," "Jahve was certainly a volcano god." Freud considers belief in God a delusion.

This standpoint was the basis of his work as a psycho-analyst as may be seen from his reference to his book "Totem and Taboo," written in 1912. He says "From then on I have never doubted that religious phenonema are to be understood only on the model of the neurotic symptoms of the individual." He applies his methods to the person of Moses and the tortuous precesses by which he comes to the conclusion that he was an Egyptian and not a Jew have scarcely convinced anyone.

There is a tendency in some quarters to make psycho-analysis a substitute for the gospel of our Lord and Saviour. Freud's viewpoint needs to be kept in mind by those tempted to follow him. For instance, he says "Once a year, however, the whole clan assembled for a feast at which the otherwise revered totem was torn to pieces and eaten. No one was permitted to abstain from this feast; it was the solemn repetition of the father-murder, in which social order, moral laws and religion have their beginnings. The correspondence of the totem feast (according to Robertson Smith's description) with the Christian Communion has struck many authors

before me. I still adhere to this sequence of thought. I have often been vehemently reproached for not changing my opinions in later editions of my book, since more recent ethnologists have without exception discarded Robertson Smith's theories and have in part replaced them by others which differ extensively."

A Christian psychology cannot be based on Freud!

# The Rev. S. Runsie Craig Memorial, 1942.

In accordance with the terms of the Trust the Council have selected for the 1942 Memorial the paper on "The Christian World-View" read before the Institute on April 27th, 1942, by the Very Rev. Professor Daniel Lamont, D.D., as being strongly confirmatory of the Christian Faith.

## 848TH ORDINARY GENERAL MEETING.

HELD IN ROOM 19, LIVINGSTONE HOUSE, BROADWAY, S.W.1,  
ON MONDAY, APRIL 27TH, 1942, AT 6 P.M.

THE REV. F. CAWLEY, B.A., B.D., PH.D., IN THE CHAIR.

The Minutes of the previous meeting were read, confirmed and signed.

The CHAIRMAN then called upon Prof. Daniel Lamont, D.D., to read his paper entitled "The Christian World-View."

The meeting was later thrown open to discussion, in which Mr. W. E. Leslie, Mr. Robert Laidlaw, and Dr. Cawley took part.

Written communications were received from Mr. T. Fitzgerald, Colonel A. H. van Straubenzee and Principal Curr.

The following elections have been made:—Rev. J. O. Kinnaman, A.M., Ph.D., D.D., a Fellow; Rev. R. J. B. Eddison, M.A., a Member; Rev. F. Martin Argyle, M.A., a Member; Henry Chadwick, Esq., B.A., an Associate; Peter Swinbank, Esq., B.A., an Associate.

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### THE CHRISTIAN WORLD-VIEW.

By the Very Rev. Professor DANIEL LAMONT, D.D.

WHEN we speak of a world-view we must not take the word "view" too literally. We cannot possibly get a picture of the world for the simple reason that we can never see a picture unless we stand a little way back from it. But no human being can stand away from the world in order to observe it, for he himself is part of the world and by no means an inconsiderable part of it. This makes all scientific pictures of the world inadequate. Edward Caird was fond of saying that science begins by leaving out half of the facts, and I take the liberty of adding that it leaves out the more important half. The scientist looks away from his own personality with its wonderful powers in order to investigate his object. He is compelled to do that if he is to serve his science. But *he* does all the objectifying and therefore, as objectifier, or subject, he cannot himself be objectified. He leaves himself and very much else out of the picture. He leaves out all the non-

objectifiable elements of the world and these are very many and indeed all-important. The result is that his "view" is of only one aspect of the world, such as the nature of the *physical* world. The artist is interested in another aspect of the world, namely its *beauty*, with which the scientist is not concerned. The world has many aspects and it is well to remember that even if we were provided with accurate pictures of all these aspects we would still be far from ascertaining the meaning of the whole. Much of modern philosophy is satisfied with attempting a synthesis of all the sciences. In this way philosophy abdicates its real function. Philosophy must indeed reckon with all the sciences, but its historic task is to think things together including those things with which science is incompetent to deal.

Nevertheless, let us adhere to our title, "The Christian World-View," remembering that "view" means "interpretation" and not "picture." Even so, it is still true that every view depends upon its point of view. The Christian world-view takes for its standpoint the heart and centre of the Christian Revelation, which is the Cross and Resurrection of the Lord Jesus Christ. The adoption of this standpoint is of course condemned by all non-Christian systems of thought, but since the purpose of this paper is to give a brief statement of the Christian world-view I must in the main take the apologetic of the Christian standpoint for granted, in the firm belief that the best apologetic for Christianity is to let it shine in its own light. One relevant remark, however, on the defence of the standpoint ought to be made at once. Christianity claims that from its standpoint in the living Word of God and from no other can a world-view be obtained that is at once coherent and comprehensive. It is easy to be coherent if you avoid being comprehensive. A proposition in Euclid is an ideal of coherence, but the *pons asinorum* achieves this ideal by sacrificing comprehensiveness. On the other hand, it is easy to be comprehensive if you do not mind whether you are coherent or not. A man may take the whole world for his parish and leave his own particular parish untended. It is the Christian claim that from the standpoint of life in Christ there emerges a world-view which combines coherence and comprehensiveness to a degree which is attained by no other system of thought, philosophical or scientific.

Christianity is not a philosophy, but it *has* a philosophy which is peculiarly its own. Standing within the redemption which is in Christ Jesus, the Christian fashions his philosophy. Every

man has some kind of philosophy, some view of the whole, which determines how he will understand any particular within the whole. The Christian has his philosophy, his interpretation of the whole, which is determined, let it not be forgotten, by his special standpoint, which is the Word of God at its living and glowing centre, Jesus Christ the Son of God. When from this standpoint he looks around, with inner eye opened by faith and love, he sees at least three things very clearly.

### I—GOD IS THE CREATOR.

The God who creates all is the God and Father of our Lord Jesus Christ, the living and true God. The Christian knows that God is the Creator, not by the exercise of his own unaided reason, but from Divine Revelation which appeals to him as the highest form of reason. There was in the Old Testament a pre-Christian Revelation which he interprets in the light of the New Testament, the meaning of all being borne in upon him by the testimony of the Holy Spirit.

It is by His sovereign Will that God has created all things, seen and unseen. That is the first affirmation in the Bible and it is the foundation on which the Christian doctrine of the world is built. Almost all other world-views regard the world as derived from its source in some other way. Philosophy on the whole has preferred to hold that the world has come from its source by an inevitable process of emanation. The principle of emanation varies with the system of philosophy. With the Stoics, the emanation is natural; with the Neoplatonists, contemplative; with Spinoza, mathematical; with Hegel, logical. I do not discuss these various and conflicting forms of emanation. The only thing common to all is that the world came from God quite apart from His Will. But the Christian holds, surely with the highest warrant, that God would be less than the living and true God if the world came into existence through no choice of His.

It is an extraordinary perversity on the part of philosophy that it has ransacked the world in order to find some way of avoiding the admission that God is personal and that He created the world by the fiat of His free and sovereign Will. This reluctance to admit the existence of a Divine Will is probably due to the old rationalistic idea that the human intellect is far superior to the human will. That idea arose from the com-



partmental psychology which is now happily abandoned. It segregated thought, feeling and will so strictly from each other that will, acting apart from thought, seemed no better than blind instinct. But, unless man acts like an animal, his will never acts without thought. Will is no more likely to be blind instinct than thought is to be empty imagination. The depreciation of will over against reason is absurd. In any case Christian doctrine is wedded to the faith that He who created the world is perfect in wisdom as in power.

Some philosophers and also some scientists have paid unconscious tribute to the Christian doctrine of Creation by coming to the conclusion that the human will is a miracle. They are driven to this position through overstressing the scientific maxim that every natural event must have a natural cause. The will, which is a spiritual magnitude, is certainly the cause of many a physical effect. They therefore conclude that the will must be a miracle. But, though no one can explain the interaction between mind and matter, I do not dignify the lifting of my arm with the title of miracle, unless we agree that we are all performing miracles all the time. The connection between the spiritual activity of willing and the physical movement of the arm is inexplicable, but it is a very obvious and common fact. That some thinkers can call this a miracle surely suggests that the human will, stripped of all caprice and penetrated with right thought and feeling, is the closest human analogue to the Divine Will. The Creation of all things by the Divine Will is certainly a miracle, and why should we expect to understand how it took place when we cannot understand so mundane an event as the raising of the arm? The analogy between the human and the Divine Will dare not be pressed too far, but the charge of false anthropomorphism, so often brought against the analogy, has been repelled a thousand times and need not detain us now.

The advantage of the Christian doctrine that the world is due to the activity of the Divine Will is both religious and philosophical. For here God is sharply distinguished from the world which He has made. God is God, and world is world. In all naturalistic systems of philosophy God is identified with forces within the world, in which case the origin of the world is an impossibility and we are condemned to the chimera of an infinite regress. Even in idealistic systems, which of course are far more reasonable than the naturalistic, the reluctance to think of God as Personal Will leads to impossible consequences. Here

the human mind is regarded as part of the mind of God, *particula Dei*, and the distinction between God and world is more than blurred. For religion this is fatal, but even as philosophy it is unsound. If the human mind is part of the mind of God, there is a whole realm of empirical facts which cannot be taken seriously, and it is the function of philosophy to take all experience seriously. For example, think of sin. The root of sin is in the mind, but what are we to make of sin if the human mind is really divine? We cannot condemn it. The moral distinctions disappear. The fact is that every consideration, intellectual, moral or religious, insists that God is God and world is world. Between God and the world there is a gulf which neither the thought nor the will of man can bridge. God alone can bridge the gulf and He has done it.

But we must guard against falling into Scylla in the effort to avoid Charybdis. The recognition of the gulf between God and world must not lead us into Deism, which is as hostile as Pantheism to Christianity. God, through His Will which created the world, is active within the world at every moment and in every place. He sustains and governs all by the Word of His Power. It is by His Word that all things cohere. It is not often recognised that the continuance of the world is as wonderful as its creation. It is because we experience the continuance of the world that our minds become blasé about it and we lose the sense of wonder. Modern physics has almost compelled us to conclude that the world is re-created at every moment of time. This is in harmony with the Christian view that God has always been creating and is creating still. His Will is active in holding the world in being. "My Father worketh hitherto and I work," said Jesus. God works at every point of natural fact and of human experience. He does not work in the same way at every point, for He is Infinite Wisdom. But He permits nothing to escape from His Power, not even sin. It is in Him that we "live and move and have our being."

## II—MAN AS STEWARD OF CREATION.

The second prominent element in the Christian World-View is that God has given to man a pre-eminent place within His Creation. Man was set over the earth to subdue it and to have dominion over the lower creatures. For the fulfilment of this

task, and of a higher task of which I shall speak later, he was made "in the image of God." Here we have the Divine charter of man's effort to understand the world and of his right and duty to serve as steward and subordinate creator in it.

What is meant by the image of God in man? That is the form which the question takes in theology. In philosophy it takes the form: "What is the differentia of man in relation to the rest of the world?" Many answers have been given to this question, such as the gift of reason, moral perception, æsthetic appreciation, or the ability to unify experience. These are all partial answers, but without discussing them I simply state the Christian position. The uniqueness of man has to be understood from his *responsibility to God*. Man is steward of the Creation, always responsible to the Creator. This definition of man's differentia may seem to savour too much of feudalism, but it takes on a different complexion when it is filled with its proper content. Here as everywhere we interpret the Old Testament by the New. The supreme general affirmation about God in the New Testament is that He is *Love*. Love is His essence. He is Love in Himself, even apart from His relation to what He has created. Incidentally, this confirms the Christian doctrine of God as Triune. God's Love had no beginning. Within the Trinity it has existed from all eternity. But my point at the moment is that since God is essentially Love, He created the world in love. He therefore created man in love, but man's differentia from the rest of the creatures is that God created him not only *in* love but also *for* love. Man alone is capable of making a loving response to his Creator. But love cannot be forced; it can only be given in free response. "We love, because He first loved us." Hence man's responsibility to God is responsibility-in-love, which is the same as response-in-love, which again is the same as communion with God. This is the only true life, eternal life.

To the statement that reason or freedom or creative capacity is man's differentia, the Christian reply is that these are only instrumental and therefore secondary. They are great and good gifts, bestowed on man in order that he may be equipped to make his free and intelligent response of love. Responsibility to God is man's primary characteristic and when he responds in love to God, that answering love becomes the very texture of his being. Spontaneously he loves his neighbour as himself. Our love to God and our love to man belong together.

## III—THE FALL OF MAN.

The third element in the Christian World-View is the acknowledgment that man has fallen away from his Origin and become a sinner against God. The Christian sees, from his standpoint in the Gospel, that sin is the negative presupposition of redemption. Redemption brings out sin in its tragic colours. Sin is precisely that which ought not to be in God's world. In its essence it is apostasy from God, the assertion of a false independence, the steward setting himself up as owner and lord. All particular sins, like theft or falsehood, are but symptoms of this root-sin of rebellion against God. How such rebellion could get a beginning is as far beyond our understanding as the Creation itself. The Bible tells us that it began earlier than the story of man. It was the serpent, which the New Testament interprets as Satan, that beguiled our first parents. But that does not *explain* the origin of sin; it only pushes the question farther back into a region which the human mind cannot enter.

No final explanation of sin is possible. To explain it would be to explain it away. It is the irreducible surd in God's Creation. Explanation means reduction to order and reason, and sin is precisely that which cannot be so reduced. The New Testament is hardly interested at all in the origin of sin, but it is intensely interested in the one fact which can shed light upon this darkest of all problems, the fact that through God's grace sin can be forgiven. Forgiveness does not solve the intellectual problem, but it solves the vital problem. As to the origin of sin in this world, nothing more profound will ever be said about that than what stands written at the beginning of the Bible. God set our first parents in Eden with liberty to eat of all the trees of the garden *save one*. That one forbidden tree is impressively described as "the tree of the Knowledge of good and evil" and as situated "in the midst of the garden." It is the symbol of God's inalienable sovereignty over His Creation. To encroach upon it would be to set oneself up as sovereign in place of God, and so to inaugurate the age of sin and death. Note the form of the temptation. God had said: "If ye eat of the forbidden tree, ye shall surely die." But the serpent said to the woman: "Ye shall not surely die; ye shall be as gods." It was the suggestion of becoming like gods that clinched the matter and brought about the Fall of Man. Rebellion against God was the root of the first sin and it is the root of all sins unto the

present hour. Nietzsche is the true representative of fallen and unredeemed man. He wrote: "If there were gods, who would not be one?"

One of the hardest problems for theology is how to hold together the two apparently opposing truths that man cannot help sinning and that yet he is responsible to God for his sin. All I can say here on this question is that the Bible shows and Christian experience confirms that both of these must be resolutely held and that the tension between them must remain so long as sin endures. Very frequently in theology one is emphasized at the expense of the other. The Bible never makes that mistake. It gives equal emphasis to the *inevitability* of sin and to the *guilt* of sin, without asking whether the two can be intellectually reconciled. I am satisfied, however, that this, like other apparent contradictions in Christianity, is in reality no contradiction at all, but a paradox which need not offend the mind which thinks from the standpoint of the Revelation in Christ.

#### THE DIMENSIONAL VIEW OF THE WORLD.

The reference to paradox, as distinguished from contradiction, leads on to the dimensional view of the world. This seems to me to provide the best thought-form yet devised for an adequate world-view. The first group of dimensions, and the simplest because most familiar, are the three dimensions of *space*. All physical objects, including our own bodies, stand in this group. Next, there is the dimension of *time*, in which all mundane things stand, whether physical or spiritual. When a physical object is interpreted as standing in the spatial group, independently of any other dimension, you get one definite description of it. When it is interpreted in the four-dimensional continuum of space-time, you get another description of it. The two descriptions are remarkably different, though each may be correct from its own dimensional frame of reference. The relation between the two is likely to be paradoxical. This principle may probably shed light on the apparent contradictions which have recently confronted physicists, such as Heisenberg's "principle of uncertainty" or the discovery that the corpuscular theory of light has as much to say for itself as the undulatory theory, even though a particle and a wave seem to be mutually contradictory concepts. Here I believe we have no contradiction, but only paradox, arising from the different standards of reference. It is

significant that the recent barriers which have brought physicists to a stand have all appeared since time has been taken seriously as a fourth dimension.

However that may be, it can be proved that whenever you pass from a simpler group of dimensions to a richer and more complicated group, you keep meeting with paradox. Consider the case of man. As body, he may usefully be described from the spatial frame of reference, but as person, he cannot be described from the point of view either of space or of space-time. When the spiritual aspect of man is taken into the reckoning a new dimension is introduced in addition to those in which the body stands. Here you are sure to have paradox. As illustration, I again take the case of the lifting of the arm. The biologist who is foolish enough to interpret the whole man mechanically is brought to a stand by this every-day occurrence. He says *either* that the will is a miracle, *or*, more likely, that the will has no existence at all, that it is an illusion, that when I raise my arm the whole operation can be explained as the result of conditioned reflexes. But, ignoring both of these absurdities, it ought to be clear by this time that when the spiritual dimension in the form of will is introduced we have paradox, in this case the paradox of a physical event not being caused by a preceding physical event, but ultimately by a spiritual decision, my decision to raise my arm.

Man's highest dimension is, as I have already said in other words, his relation to God. He may not know it; he may deny or even defy God; but that makes no difference to the inexorable fact of his relation to God. God has said to him: "Thou art mine," and his reply is: "No, I am not thine; I am master of my own fate." But he is still responsible to God. Nor is neutrality possible in the supreme campaign of human life. A man may *decide* to be neutral, but this decision is disobedience to God equally with the decision to say "No." Indeed there is a sense in which the neutrals are a meaner crowd than the deniers. In Dante's *Inferno* such neutrals are not fit even for hell.

When responsibility to God, which is man's supreme dimension, is taken into the reckoning we have the many paradoxes of Christianity. It is deeply impressive that the Bible never regards these paradoxes as contradictions, but as vital tensions which belong to the very fibre of human life. One example must suffice, the paradox between God's sovereignty and man's

free-will. How can man be free in any real sense of the word if at every point of his life the Will of God is supreme? This question ceases to offend reason as soon as it is confessed with mind and heart that God's Will for man belongs to our ultimate dimension, while our wills, except in their direct response to God, belong to what may be called our penultimate dimension. The paradox appears at the meeting place of the two dimensional levels, and when we give God His rightful place in our lives we find nothing in this paradox to make us stumble, but everything to make us rejoice. The freedom which we have on the lower level of life is merely formal freedom. It is not fulfilled, it is not real freedom, until it is lifted up to the highest level of life. Only when God is acknowledged as Lord are we truly free. "And ye shall know the truth, and the truth shall make you free." "Then are ye free indeed."

What we have seen to be a paradox has appeared to most philosophers as a contradiction. Why? Because they have not seen that the biggest thing in man's life is God's claim upon him. They have discussed the problem in terms of necessity and freedom, have set the two on the same dimensional level and found them contradictory. It is the pre-supposition of these philosophers that is false. The necessity which God lays upon man belongs to a sphere which man's formal free-will can never reach by its own resources. The pathetic history of philosophy on this question is a standing testimony to the confusion which arises when men decline to acknowledge the living God. Unfortunately intellectual confusion cannot be confined to the schools. It filters down to the multitude and brings about the kind of disaster which we see all too plainly in the world of to-day.

While the formal freedom in which all men share is very different from Christian freedom, the former must not be disparaged, still less denied. If unredeemed men had no freedom, they would have no responsibility. But they *are* responsible to God. The most serious opponent of Christianity in our time is scientific determinism, especially in its psychological form. Of course it has no right to be called scientific. It is only the bad philosophy of too many scientists. It holds that so-called freedom is all an illusion, that whatever we do we cannot help doing. It is enough to ask one who holds this most absurd of all doctrines how he can expect us to take him seriously, seeing that *ex hypothesi* he cannot help denying freedom. His assertions

against freedom are not the product of his thought, but only happenings which he cannot help. He will say, if I make assertions on behalf of freedom, that these also are only happenings. Well, my happenings are as inevitable and have as much right to exist as his. Then, why should *he* argue? On his showing, here are two affirmations which are equally valid and which yet contradict each other. All argument for determinism is a breach of the law of non-contradiction. If there is no such thing as freedom, there is no such thing as truth.

It may justifiably be said that this paper has been more about man than about the world as a whole. If that was a mistake on my part, it was an intentional one. It is man who alone tries to interpret the world and in man alone can its interpretation be found. But man is the key to the world only when he has learned that God is the Key to man. To finish on a very practical note, sin is a very important factor in this world, but who can get sufficiently apart from sin to give an accurate assessment of it? Only one Man who ever walked this earth was able to say that sin had no part in Him. Thus He knew the tragedy of sin and thus He alone can save men from its ravages. He does save all who are in Him and they learn to know how dark a thing sin is, in proportion as they enter the gladdening light of redemption. They and they alone can reach a truly perspective conception of the world, because they live in the light of Him who is the Way, the Truth and the Life.

#### DISCUSSION.

The Chairman (Dr. F. CAWLEY) said: I count it a privilege to chair this session of the Philosophical Society, since I am greatly indebted to Professor Lamont for abiding inspiration during seminar work at Edinburgh University. It is not too much to say that the back-benches of his classes are in the ends of the earth. The teaching of Dr. Lamont was always seminal; truth, as it were, coming to harvest within one's own soul.

The lecture of to-night, you must have felt, is of that order. It has both quickened the intelligence and given grace to the spirit. There are many points on which you will be glad to comment. As Chairman, permit me especially to lay stress on one, viz., that of man's *differentia* from the rest of creation. Professor Lamont suggests that it may be understood in the sense of responsibility



to God ; then, later, as responsibility-in-love to God who is Love. This, to me, is most suggestive. For years I have thought of man's *differentia* as shadowed forth in his felt compulsion to worship. All through the centuries that has marked off man from the animal creation. To-day there is psychological insistence that we must not deny intelligence and purposiveness to the animal, but nowhere is there the evidence that the creature knows how to worship, to erect an altar and build a temple above it. But man has done it as far back as the dawn of history, and presumably, far, far earlier also.

Yet responsibility may be the more inclusive term, with worship as its sacred act. Or, perhaps, Dr. Lamont might consider each as the synonym of the other. This is what I meant when I said that all his work was of a seminal order.

The lecture, then, is now open to discussion, but before we enter upon further remarks I know you would like me to express in your name our warmest thanks to our Lecturer for the inspiration of this evening.

Mr. R. A. LAIDLAW said : In discussing God's sovereignty and man's free will Professor Lamont said, " Only when God is acknowledged as Lord are we truly free." There was one man on earth in the days when our Lord was here who appreciated this fact—the centurion of Capernaum of whom we read in Matthew viii and Luke vii.

What he really said was, " I am subject to the authority of Cæsar in Rome and therefore I exercise the power of Cæsar in Galilee. When I speak, all the power of the Roman Legions is behind me to enforce my commands. I perceive thou also art a man under authority, and because thou art subject to the authority of God, speak and my servant shall be healed for all the power of Heaven will be behind thy command."

To this our Lord said he had not seen such faith no not in Israel. It is fundamental, that just as all sin is the result of our rebellion against the holy will of God so all holiness is the result of our submission to the will of God. It would therefore seem clear that when a man submits his will to the Sovereignty of God he does not give up something but gains everything, for thus keyed to Omnipotence he becomes omnipotent.

Mr. W. E. LESLIE said: On p. 149 the author argues against determinism, and says with truth, "If unredeemed men had no freedom they would have no responsibility." But on p. 147, line 6 he says "man cannot help sinning." Then in that respect he is not free. But who compels him to sin? Does the author charge this upon God? Where does Scripture teach that man "cannot help sinning"?

On p. 147 Dr. Lamont appears to suggest that "All physical objects, including our own bodies" can be located on the space co-ordinates, but not on the time co-ordinate. But they are of course in the space-time continuum, and can be located on all four co-ordinates. "Next" we are then told "there is the dimension of time, in which all mundane things stand, whether physical or spiritual." Is it suggested that these things do not also exist in space? Or that they (as distinct from physical objects) exist in time as well as space? Surely if the locus of anything can be measured along any one of the four co-ordinates it has a position on the other three also. And why are not physical objects "mundane things"?

On p. 148 we are told that "as a person" man exists apart from the space-time continuum. I believe this is true, although in some mysterious way he functions within it. Herein lies some of the wonder of the Incarnation.

But Dr. Lamont gives us a further difficulty. He says, "When the spiritual aspect of man is taken into the reckoning a new dimension is introduced in addition to those in which the body stands." These latter he has told us are the three space co-ordinates. But he has said spiritual entities exist in time. The spiritual aspect of man, then, exists in two dimensions of a five dimensional continuum. On p. 149, line 6, this fifth dimension seems to be "will." And a little later we have two more dimensions. We may be able to construct a seven dimensional geometry, but surely this cannot be what the author has in mind. Has he not fallen into the mistake of confusing an illustration with the thing illustrated? It is as though after speaking quite properly of a "sphere" which man's formal free-will can never reach, he had gone on to speak of a "cube" which it could reach! I submit that the whole section headed "The Dimensional View of the World" breaks down.

## WRITTEN COMMUNICATIONS.

Mr. THOMAS FITZGERALD wrote : Professor Lamont's paper is a valuable contribution to the consideration of those subjects which are among the principal objects for which the Victoria Institute was founded.

When the trend of modern thought is to deny a place for God in His world, it constitutes a challenge to the Christian World-View, which this Society does not hesitate to take up.

The lecturer rightly points out that the world has many aspects, but I wish he had given a clear definition as in what sense he uses the word. It is true, later on, he says that his paper has more about man than about the world as a whole, but is there not the world of mankind apart from the universe, which is often loosely called the world ? Even man himself may be thought of as a world in miniature. Archbishop Trench pointed out in his Hulsean Lecture, that in the Bible God seems more concerned about man than about recording His own marvellous creative works which reveal His Power and Wisdom.

Therefore, whilst the philosopher and the scientist may bend their utmost powers to the study of material things, the study of man surpasses all other studies, and we are in harmony with the thoughts of God when we do so, for it is revealed that " God so loved the world (mankind) that he gave his only begotten Son that whosoever believeth in him should not perish but have everlasting life."

I would, therefore, distinguish between this planet (the earth or world) and the *κόσμος*, or the scheme of things which man is responsible for, as constituting his manner of life on the earth apart from the claims of God, and even running counter to the laws of his Creator. It is in this sense that the Christian is exhorted to love not the world (1 John ii, 15-17).

In N. T. Greek *κόσμος* is invariably used in this sense, whilst *αἰών* (an age) is used to indicate a particular period in man's scheme of things marked by special features of evil, and God's dealings with man in relation to that period. The translators of the A.V. failed to distinguish the difference, and have often translated *αἰών* as world.

Accepting the lecturer's views on the whole, that God is Creator, and that to Adam was committed the dominion over the Paradisaic earth, also that Adam fell from his high estate, I would like to submit

a few points for the lecturer's consideration, following the order in his paper.

1. *God is the Creator.* Under this head the lecturer is right in sharply distinguishing God the Creator from the world which he created, and although "world" is here used, no doubt "the universe" is intended. There is a danger of taking the narrow view that this earth is the only part of creation worth considering. "The works of God are great, sought out of all them that take pleasure therein."

Further, it must be firmly held that God, the Creator, stands apart and above man, the creature, although profoundly concerned as to man's highest interests. It follows, therefore, that man is responsible to God for the use of privileges and faculties with which he was endowed at his creation. This fact leaves no room for the theory of so-called Evolution in the Christian World-View.

I cannot, however, agree with the lecturer when he states that the world is re-created at every moment of time, and that God has always been creating and still is. This is not "according to the Scriptures" for we read, "Thus the heavens and the earth were finished, and all the host of them. And on the seventh day God ended his work which he had made; and he rested on the seventh day from all his work which he had made" (Genesis ii, 1, 2). The lecturer's quotation from John does not contradict Genesis, and it is here where the failure to distinguish the material world from the world of mankind causes confusion. Our Lord, when He said "My Father worketh hitherto and I work" (John v, 17), was engaged in the beneficent work of healing the sick, an act of Divine intervention on behalf of suffering mankind. This Divine intervention is found throughout man's history as recorded in the Old Testament. Thus the Father was working in the past, and now the Son works as present on the earth among men.

2. *Man as Steward of Creation.* Under this head the lecturer rightly insists that man is responsible to the Creator. He was placed in the position of Headship, and upon faithfulness to his trust depended the welfare of all put under his dominion. Not only was he made "in the image of God," so as to represent God to those over whom he ruled, he was constituted also by this unique place on earth, a figure or type "of Him that was to come"

(Romans v, 14), whose Headship was to be over the New Creation. Hence it may be assumed that the creation of man had in view the incarnation of the Son of God, the second man, the Last Adam (1 Cor. xv, 45-49).

That God was prompted by love in creating man may be reasonably affirmed, but I question whether it can be rightly said, as stated by the lecturer, that he created the world in love. Then as regards Love being His essence, I submit that the statements in the New Testament that "God is *Light*" signifies His *essence*, that "God is *Love*" signifies His *nature*, that in His *character* He is *holy and righteous* and *wisdom* marks His *ways*.

3. *The Fall of Man.* There can be no question, as the lecturer affirms, that in the Christian World-View man has fallen away from his original high estate and become a sinner against God. Man's whole history confirms this, and never more so than in these terrible and blasting days of war. Man revolted from God, and mankind is still in revolt against the laws and claims of God, to say nothing of his hostile attitude to the Gospel of the Grace of God.

Man was placed originally in surroundings of utmost beauty and provided with all that love could bestow. Everything was done to call forth the responsive love of the creature to the Creator, but in spite of such a favourable environment, with only one prohibition put upon them, our first parents fell and sinned against the God who had so richly blessed them.

The social reformer can never offer his fellows such a favourable environment, nor can he hope by his schemes to save man from his sins. Repentance towards God, and faith in our Lord Jesus Christ, will not only save man from his sins, but he will receive a new power by which he will quickly change his environment and manner of life. The evidence of this covers nearly 2000 years, and is exhibited in countless lives of all nationalities in the present day. These facts belong to the Christian World-View, which the lecturer has so clearly set forth in his paper.

The lecturer closes his paper with some remarks on the Dimensional View of the World, but it seems to me, while all very interesting in the study of astronomical space and light-years, the Scriptures relate man's history on earth to the ages of God's eternal purposes. Man was made, not for space-time but for eternity, where all thought

of time is lost. This view leads to the solemn issue of man's responsibility as to *where* he will spend Eternity.

Rev. Principal H. S. CURR wrote : Professor Lamont's paper makes refreshing reading in these days when the historic doctrines, sponsored by Christianity, with regard to the origin and meaning of the world tend to be superseded in the judgment of so many thinkers as inadequate. The Institute has thus been placed under a deep debt of obligation by such a clear and cogent statement of certain problems with which philosophy and science must reckon, and whose answer is only furnished by Christianity.

Three random reflections are suggested by Dr. Lamont's essay. One is based on an observation of Wellhausen, the mighty protagonist of the modern critical view of the Old Testament. He says that the Biblical cosmology made science possible by drawing a sharp distinction between God and the created universe. If I understand him aright, not only is morality undermined by atheism or pantheism in their multitudinous shapes and forms, but scientific knowledge as well. Until the material world was objectified in this way, scientific investigation was an impossibility. That admits of pragmatic proof inasmuch as Hinduism and Buddhism, these great pantheistic systems, have done nothing towards originating anything worthy of the name of science. On the other hand, Christianity may fairly claim to be the fountain of all scientific investigation. At the expense of being extravagant and ridiculous, may I call attention to the fact that some of our most distinguished scientists at the present day are not Christians but Jews, a significant fact when we remember that the New Testament assumes the Old Testament cosmogony.

A second reflection is that in Christianity the centre of gravity in all being and becoming is not man as in other religions and philosophies but God. To put it very simply, there is a world of truth in the old Greek maxim that man is the measure of all things, as Professor Lamont proves in his opening paragraphs, but that is not the whole truth as he proceeds to show. The aphorism should run " God is the measure of all things " or, even better, " The Son of Man is the measure of all things." He is the image of the invisible God, the first born of all creation. In Him were all things created,

in the heavens and upon the earth, things visible and things invisible, whether thrones or dominions or principalities or powers. All things have been created through Him, and unto Him. And He is before all things, and in Him all things consist. (Colossians i, 15-17.) The Bible begins and ends with God. There is an old saying that well begun is half done. It applies with as much force to theology, and philosophy, and science as to everything else.

Yet a third reflection is concerned with the place of the Bible in a discussion of the world-view. Man cannot do better than approach the vast question from the same standpoint, in the same spirit, and armed with the same categories as the writers of Holy Scripture. Without their books mankind would never have heard of the Christian World-View for that is based on history and not on philosophy unless we accept the old definition of history as philosophy teaching by example. The foundation of the Christian World-View consists in what God did rather than in what God taught, although, in the last analysis, the two are inseparable, like the two sides of a coin.

#### AUTHOR'S REPLY.

I am indebted to all those members of the Institute who have commented upon my paper. My thanks are specially due to the Chairman, Dr. Cawley, not only for the warmth of his appreciation but also for his discriminating remarks on the subject itself. Principal Curr has also made a contribution of value to the discussion, while others have spoken or written in a manner which exhibits a lively interest in the theme of the paper. I take it, however, that my reply ought to direct itself to questions and criticisms and to these I turn without further delay.

Mr. FITZGERALD wishes that I had given a clear definition of the sense in which I used the word "aspects." It is an important word in dimensional philosophy, but it explains itself. A table is a thing of three dimensions; its top is of two dimensions. The top is an aspect of the table. An aspect is always one dimension lower than that of which it is an aspect. The table is "part" of the furniture of a room, but it is inaccurate to speak of the top as being part of the table. You can take the table out of the room, but the room is still there; if there were no top to the table it would be a table no longer.

Similarly, the physical world is an aspect (not a part) of the world as a whole. The physical world is by no means the whole world, but if it were removed the whole world would be an entirely different thing. The use of "part" instead of "aspect" has led to much confusion of thought. Thus, when it is said that the body is part of the man, the suggestion is that body and soul are stuck together like two bricks. But body and soul differ dimensionally from each other, while each differs dimensionally from the whole person. Body and soul are different aspects of the person.

Mr. Fitzgerald takes exception to the idea that God re-creates the world at each moment of time. But by "re-creation" I did not mean "creation all over again." The original creation of the world is unrepeatable. It was a once-and-for-all event. Yet the world is not static. It is changing moment by moment. A new element is continuously emerging. Man's will contributes something to this "emergent," something which mars the whole unless it is obedient to the Will of God. For God is the great Worker, not only in continuing the world, but also in changing it. Mr. Fitzgerald's theory, logically carried out, is Deism. His thesis that the Divine activity in the world was an intervention on behalf of suffering humanity is true so far as it goes, but it does not go nearly far enough, and it does not save him from the deistic error that God made the world and then left it to go on itself except for occasional divine interventions. The Bible is against all forms of Deism. God keeps His Hand all the time on the helm of both nature and history.

Mr. LESLIE is incensed at the statement that man cannot help sinning. Perhaps he takes the statement to mean that when a man commits a particular sin he was bound to commit that sin. But that is far from the meaning. The statement means that man cannot help being a sinner. Sin is a second nature with him, a *damnosa hæreditas*, and he needs forgiveness right on to the end of his earthly career. He cannot be perfectly free in this world. If he were perfectly free, he would never think, say or do anything contrary to the Will of God. That is the Christian Hope but it cannot be completely realised here below. Of course we must strive towards perfect freedom and through God's grace come ever nearer to it. Sanctification must go on in the Christian life. Perhaps the best reply to Mr. Leslie is to remind him that the nearer a man



comes to perfect harmony with the Will of God, the more sensitively alive he is to the fact that he is a sinner. To the question whether I charge the inevitability of sin upon God, the answer is: "No, I charge it upon man and the devil between them." To the question as to where Scripture teaches that man cannot help sinning, the answer is: "From beginning to end Scripture teaches that man must sin so long as he is a sinner and that he will remain a sinner in deep need of Divine pardon until he stands complete at last in glory."

As to Mr. Leslie's dissatisfaction with the dimensional theory of the world, a dissatisfaction shared by Mr. Fitzgerald, I feel that this is not so serious a matter. The vindication of the view that the world stands in "dimensions" and not in "parts" would demand a volume. I had the idea that a bare outline of this view might be of use to those members who were unfamiliar with it. I can only add here that it is well to understand a position before accepting or even rejecting it. Of course it might be rejected after it is understood, but in that case we can agree to differ. After all, it is only an intellectual construction which does not enter into the substance of the Christian faith.

#### SUBSEQUENTLY RECEIVED.

DR. J. BARCROFT ANDERSON wrote: I am convinced that of all writings on this earth the Hebrew and Greek Scriptures alone cannot be improved.

The word "Christian" occurs nowhere in those parts of Scripture written by the only Apostle to us Gentiles. To that Apostle alone, was given a revelation additional to that of Roman i, 20, and ii, 15. Through him came the "secret upon which silence had been kept since times eternal, but now made known through prophetic writings" (Romans xvi, 25). Those prophetic writings were those of Paul to saints at Colossae and at Ephesus. "You hath He reconciled (literally-changed-away-under) . . . to present you . . . unreprouvable before Him" (Col. i, 22). "The secret . . . in which are all the treasures of wisdom and knowledge hid away" (Col. ii, 2).

Is the word "world" in this paper the word Kosmos of 1 Jno. v, 19?

Why does this paper give a different representation of the Creator, from Colossians i, 16, and I think John viii, 25, as rendered by the Vulgate?—to my mind the only correct rendering of the Greek.

The origin of sin is given in Ezekiel xxviii, 16, and 1 Timothy iii, 6, resulting in the Devil's assuming a position independent of his Creator, and trying to subject the whole Earth to himself. The alternative reading in Ezekiel xxviii, 18, may be correct: "I have turned thee to ashes upon **THY** earth."

The word Satan first appears in Job. In Zechariah iii, 1, the corresponding verb is rendered "Adversary." I would render that passage: "The self-exalter stand on his right hand to self-exalt."

His attempt to fool his Creator is recorded in Matt. iv and Luke iv, but not in Mark, which represents "Jesus Christ" as being the Jehovah of Isaiah xl, 3, and not in John, who represents him as the speaker of the spoken word of Jehovah, in Jeremiah i, 9. Verse 4 commences, "And was existing, Word Jehovah, to me to say." Verse 9, "and Jehovah was extending his hand and he was touching my mouth, and Jehovah was saying to me."

The Devil, in terms of the Lord's words: "No one knoweth who the Son is, save the Father" (Luke x, 22) could not know that it was his Creator whose support he was endeavouring to obtain in the testing in the wilderness (Luke iv, 6-7).

Later, the Devil, as stated in Psalm xli, 8, said: "Now that he lieth down he shall not cause to rise up again." He did not believe the words of John x, 18, "I lay down my soul that I may take it again . . . I have power to lay it down, and I have power to take it again."

## 849TH ORDINARY GENERAL MEETING.

HELD IN ROOM 19, LIVINGSTONE HOUSE, BROADWAY, S.W.1,  
ON MONDAY, MAY 18TH, 1942, AT 5 P.M.

H. WILSON HARRIS, ESQ., IN THE CHAIR.

The Minutes of the previous meeting were read, confirmed and signed.

The CHAIRMAN then called on Mr. W. E. Leslie to read Dr. Edwyn Bevan's paper entitled "Can Germany be Cured?"

The meeting was later thrown open to discussion in which the following took part:—Rev. A. W. Payne, Colonel Skinner, Mr. Leslie, Mr. A. C. Kunz and Mr. Wilson Harris.

Written communications were received from Mr. Douglas Reid, Mr. Douglas Dewar, Sir Ambrose Fleming, Mr. B. B. Knopp, Rev. Principal Curr, Mr. E. J. G. Titterton and Major H. B. Clarke.

The following election has been made:—John W. Harmer, Esq., M.A., F.R.A.S., an Associate.

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### *CAN GERMANY BE CURED?*

By EDWYN BEVAN, ESQ., O.B.E., D.LITT., LL.D.

I HAVE been asked to read a paper on the question whether Germany can be cured. When Germany is spoken of as afflicted with a malady, what is meant, no doubt, is a malady of the soul which causes the great majority of Germans to have a perpetual craving to domineer over other peoples, and to feel heroic when they are brutal, to love war, and to be always on the look-out for some fresh occasion to perpetrate an aggression upon their neighbours. If you answer the question propounded in the negative you must mean that this malady is so inherent in the German mental constitution that there is no hope of their ever being free from it. And the practical inference from this view is that the rest of the world will never be safe, unless Germany is held down by the united power of other nations, who will have either to prevent a defeated Germany from re-arming by a military occupation of the country, or keep up in perpetuity such vast armaments themselves as to counterbalance, more than counterbalance, any armaments which Germany can

create. The prospect of an incurable Germany having to be kept down by sheer force for all time one can foresee is so frightful that I do not know whether anyone has shown himself willing to acquiesce in it. Even Lord Vansittart does not hold that Germany is incurable in that sense. He believes that Germany can ultimately be cured ; only Germany must first be subjected to a lengthy period of wholesome discipline by the victorious Powers. If the German people bears the yoke for such a period, there is a hope, Lord Vansittart thinks, of a generation of Germans arising free from the mental propensities of their ancestors.

Thus the question "Can Germany be cured ?" is, taken as it stands, hardly a controversial one which it is worth while to discuss. No person whose opinion carries any weight would maintain that Germany could never, in any circumstances, be cured. The controversy really turns on the question, How far does the malady referred to extend *now* in the German people, how far has it extended in the past ?

We have two views in conflict. There is the view that the malady does not extend to the German people as a whole, but only to the ruling Nazi gang or to the Prussian military caste ; and that when we have broken the Nazi regime, we ought quickly to hold out a hand of friendship to the German people. The bulk of Germans, it is held, are decent enough fellows, and when once the guilty individuals have been punished, by death or otherwise, we might have a Germany which would be thenceforth a tractable member of the family of nations.

There is the opposite view, that the Germans, as a people, are bad throughout. There are a certain number of decent individuals, but they are not typical. The bulk of Germans feel no dissatisfaction at the atrocities committed on Poles or Russians or other conquered peoples, they are, nearly all of them, solidly behind Hitler and the Army. Thus if they are defeated in this war and profess to have changed to a better régime, it would be a mistake to attach any value to such pretences. It is just that not only a limited number of guilty individuals should suffer for what the Nazis and the soldiers have done, but that the whole German people should suffer, and suffer pretty rigorously.

The question "Can Germany be cured ?" is not simply an academic one, the satisfaction of scientific curiosity as to the nature of a particular species. What it really means is, "How are we to treat Germany, if we find ourselves victors at the end of this war ?" It looks now as if it would not be left for us

alone, or to us and America, to determine how Germany is to be treated ; it looks as if Russia would have a good deal of say in the matter ! But, so far as the decision will lie with us and America, it is plainly important to make up our minds whether we may hope in the near future to have to do with a Germany which has really got rid of the spirit of bullying and aggression and can be treated as a decent neighbour, or whether we must renounce that hypothesis for any time we can foresee.

A question about the character of a whole people is obviously one which nobody can claim to answer except very conjecturally. In the case of Germany, to answer it with anything like certainty would imply that one knew, not the character, in the singular, of a mass of people regarded as a singular individual, but the eighty million characters of eighty million Germans. Of course people who have become acquainted with a certain number of individual Germans, whether those they have met in actual contact or those who have stamped their characters on history or German literature, make provisional generalisations as to the characteristics of Germans generally. But even with those whose generalisations are based on an exceptionally wide knowledge, account has to be taken of the chances which may have directed their way to acquaintance with this or that particular set of Germans, whom they take as typical. The action of Germany as a State on the field of history is the action of individuals or groups of individuals who happen at this date or that to have had the direction of the Government in their hands. An enquiry must largely depend on the truth or falsehood of a number of statements regarding the facts of the past.

1. The German State, it is said, has in the last seventy-two years gone to war three times with neighbouring non-German States : in the first of these wars it was victorious and annexed some territory of the defeated State ; in the second Germany was defeated, but leading Germans made it clear, in the course of the struggle, that, had Germany been victorious, it would again have annexed considerable territories, in Europe and Africa, belonging to England and France ; the third war is still going on, and the rulers of Germany again make it clear that their ambitions, in regard to world-domination, go far beyond anything avowed before.

2. Before 1870 there was no Germany, as a single State. Germany consisted of many States, but there was the kingdom of Prussia, and the rulers of Prussia had shown, in the days of

Frederick the Great and the days of Bismarck, a desire to bring under their rule neighbouring non-Prussian Germans, and some non-Germans, such as a portion of the Danish people and a portion of the Poles. Bismarck's war of 1866 against Austria cannot be given as an instance of aggression on the part of Germany. The Austrians were also Germans, and the Habsburg Emperor had been commonly called in earlier centuries the Emperor of Germany. If an aggression, it was an aggression perpetrated by Prussia on another German State. The harsh discipline, the admiration of war, the readiness to inflict suffering without a qualm, the subordination of everything to the military word of command—all these characteristics of Nazi-Germany which seem to us so unamiable, are especially connected with the Prussian Army. If they have now spread all over Germany, it was from Prussia that they came. It was because the Prussian military caste was allowed to recover its power after the defeat of 1918 that the Weimar Republic was largely a façade. This is why some people maintain that the source of all evil in Germany is Prussia, and that the essential thing, after the war, will be to make Prussia a State separate from Germany. Germany, without Prussia, it is thought, might well settle down into quite a companionable member of society.

3. The glorification of war, the lust of conquest, the admiration of brute force, the utter subjection of the individual to the State, which mark the Nazis, are nothing new to Germany. It can be shown how these things go back many generations, as has been done in Mr. R. O'L. Butler's book, "The Roots of National Socialism." As you survey the German literature of the last two centuries you can find writers, such as Fichte and Treitschke, who desire to see the German people the leading people of the world, such as Hegel, who thought the Prussian State the fine consummation of humanity, such as Nietzsche, who glorified the ruthless unscrupulous mastery of the strong. Thus it cannot be denied that the malady from which Nazi Germany is suffering is of old standing.

4. While the rulers of Germany, or of Prussia before 1870, have at various dates committed acts of aggression, the German people as a whole has made no effective protest. A very large number of individual Germans not only felt no moral dislike of the acts of their rulers, but were even proud of them. Those who have lived much in Germany can usually speak of many Germans they have met who held individually a view of the world for

which there was something splendid in successful force and who would acclaim any conquest made by the State, however devoid of moral justification. They regarded the ethical canons which regulate the conduct of men in private life as having no applicability of the action of the State. University professors especially have been signal in this militant nationalism. It is pretty certain to-day that a large part of the German people really have an immense devotion to Hitler, that his actions have been thoroughly approved by the majority. To that extent it is untrue to draw a distinction between the Nazi rulers and the German people.

The number of people in Germany who have ever been ready to resist authority when authority was unrighteous, or protest publicly against it, has been much fewer in Germany than in the British Isles. It was Bismarck himself, I think, who said that what the Germans lacked was moral courage ("civil courage" the Germans call it). Niemöller is the more remarkable as an exception. This may be in part due to the worsers elements in Luther's doctrine. I quote from a recent book by the Principal of Mansfield College, Oxford, Dr. Micklem. He thus describes the Lutheran view :

"The State may be better or worse, but, whatever it is, it must be accepted as God's merciful gift in restraint of anarchy and obeyed without any limit except only if it should seek to prevent the preaching of the Gospel. 'Thou art not to revile the civil authorities,' said Luther, 'when from time to time thou art oppressed by princes and by tyrants, and when they misuse the power which they have from God.' Obedience is a Christian duty; 'a golden chain is good; it is no worse a chain if some wanton hang it on her neck.' This tradition of passive obedience goes far to explain the incomprehensible submissiveness of the Germans to their tyrants; and the ruthless and pious Bismarck stands as the classical example of the curious mesalliance of power-politics and Christianity." ("The Theology of Politics," p. 46.) Calvin was quite different. If the Puritans in England and the Covenanters in Scotland showed a sturdy temper of opposition to the ruling Powers, Calvinism, not Lutheranism, was there at work.

These are the four points commonly urged by those who hold that Germany is not curable in any near future. But do they really prove that it is vain to hope for a better mind in Germany, if Germany is defeated in this war, and sagaciously dealt with by

the victors ? Let us look at them, one by one. The first point was that Germany, since the beginning of 1870, has entered upon three wars with aggressive intent, and that Prussia did so before that. In the case of the Prussian wars, the German people does not come in at all as the agent ; they were waged, as we have seen, by Germans against Germans. " Frederick," says Rudolf Olden in his book " Is Germany a Hopeless Case ? ", " hardly made Prussia beloved in the German Reich—far from it ! It was not long before this country, which had been made little more than the headquarters of an army, Prussia, this curious kind of movable prison house, was universally hated and feared amongst the Germans, and all Frederick's exploits failed to change that state of things one whit." All that this first point proves is that certain rulers of Germany have at different dates embarked on wars of aggression against neighbouring peoples—if you count Prussia's aggressions under Bismarck together with those of the German Reich, five times in the memory of men still alive. This could not have happened unless there were an element in the German ruling class peculiarly disposed to aggressive war, and unless the mass of the German people were acquiescent. That much we may say events have proved. But they do not prove that the will to aggress is necessarily always predominant in the German ruling class, or that the German people, left to itself, would have been eager for war.

The second point was the baneful character of Prussia. It cannot be denied that militarism is very pronounced in Prussia, that the Army stands high in public esteem, and that the Army chiefs have often had an unwholesome influence on politics. But it has to be remembered that there are military virtues as well as military vices. There is, on the one side, the punctual orderliness, the sense of duty, obedience to legitimate command, courage in facing danger and endurance in supporting hardships and privations ; there is, on the other side, the tendency to domineer, indifference to the infliction of pain which may become sheer brutality, obedience to orders which are morally evil, when military duty clashes with duties that are higher. Now, I think in Prussia the military virtues have sometimes been prominent, and sometimes the military vices. It is not true, I think, that all the evil in Germany is due to Prussia or Prussian influence, and that the rest of Germany is comparatively blameless. I doubt whether the lust of aggression on other countries is typically Prussian ; what is typically Prussian is the military discipline



and obedience to command which made the Prussian Army strong in days past and has made the German Army strong since 1870. The Army is a sharp and powerful weapon. When this weapon is in the hands of rulers who have the will to aggress it is a terrible instrument of evil, but the origin of the evil is not so much in the instrument as in the will behind it—the will of Frederick, of Bismarck, of William II, of Hitler. I remember that when I was working in various Bureaux of Information during the last war with someone who had exceptional knowledge of Germany and modern European history, the late Sir James Headlam-Morley, in the latter years of his life Historical Adviser to the Foreign Office and the author of a book on Bismarck (in the "Heroes of the Nations" series) I heard him denounce it as a wholly wrong popular idea that the essentially evil element in Germany was the Prussian. What was evil was the combination, under William II, of Prussia militarism with grandiose schemes of world-power. These grandiose schemes belonged, he thought, much more to the ambitious, romantically-dreaming, self-boosting element which had come up in Germany with its recent commercial and industrial expansion than to Prussia ; that is to say, not Prussianism alone, but Prussianism and imaginative designs of world-power together were the evil. Prussian militarism by itself would not constitute a threat to other nations, and, on the other hand, schemes of world-power without the Prussianized Army to serve as their instrument would be futile. Headlam-Morley would point to the old Emperor William II as the typical Prussian, who loved his Army above all things, and had a strong sense of duty, but had no imaginative world-embracing schemes, no desire to perpetrate aggressions on other peoples, which he only did when pushed from behind by Bismarck. You may find another protest against making Prussia the essentially evil element in Germany in the writings, now widely-read, of a main antagonist of the Hitler regime, Hermann Rauschning, himself a Prussian. His book "The Revolution of Destruction" is perhaps the best and most thorough exposition of the evils of National Socialism which has been issued since the war began. In a recent smaller book of his, "Make and Break with the Nazis," he is specially concerned to exhibit the virtues of the traditional Prussian family life. The ruling class which furnished officers to the Army was to a large extent pious and God-fearing. It is the absence of this Christian element in National Socialism which

Rauschnig thinks one of the terrible things about it, and the regeneration of Germany, as he looks forward to it, will come from the restoration of the spirit of dutifulness and piety which characterized the better kind of Prussianism in the past. It is true that Prussian piety could sometimes enter into strange combination with power politics, as we saw just now Dr. Micklem observe in the case of Bismarck.

The third point was the appearance, going back many generations in German literature, of just those ideas and sentiments which we abhor in National Socialism to-day. Yes, but to say that Hitler has antecedents in German literature, right back through a long past, is not the same thing as saying that German literature as a whole is penetrated by these same ideas and sentiments. I have to speak here under correction, for my own knowledge of German literature is scrappy and largely second-hand, but I understand that the great figures in German literature—Lessing, Schiller, Goethe—stand above this perfervid nationalism. If you can bring up Fichte and Hegel among the philosophers, as supporting some part of the Nazi creed, you can bring up Kant and Schopenhauer on the other side. Even in the case of Fichte, Rudolf Olden urges that in his youth he was a democrat and Socialist, an admirer of France, and that it was only the subjugation of Germany by Napoleon which turned him into an extreme Nationalist. Or take Nietzsche. His glorification of the strong man who uses his strength ruthlessly upon the weak and servile shows indeed a strain which comes out frightfully in the Nazis; yet in some other respects Nietzsche was violently opposed to things which characterize the Nazi view of the world. He could speak with contempt of his fellow-countrymen; they were by no means suited to be a *Herrenvolk*, a master-nation. He had no cult of German blood and soil. I may quote a passage of Nietzsche given in the review of a book about him in the *Spectator* of February 6th:—

“ Let anyone look upon the face of the Germans. Everything that has manly, exuberant blood in it went abroad. Over the smug populace remaining, the slave-souled people, there came an improvement from abroad, especially by a mixture of Slavic blood. . . What a blessing a Jew is among Germans! See the obtuseness, the flaxen hair, the blue eye, and the lack of intellect in the face, the language, and the bearing among Germans. . . . The Jews are beyond all doubt the strongest, toughest and purest race now living in Europe.”

Thus spoke Frederick Nietzsche. And if you go through German literature to pick out things reproduced in the Nazi world view, you should be careful to distinguish between things which are really distinctive and things which merely show such a national pride, such an admiration for prowess in war, such a glorying in width of empire as may be found in the literature of any people which has played, or aspired to play, a great part in the world. In English literature too we find it noted that we British hold dominion over palm and pine, and our chief national song "Rule Britannia" goes very far in its claim—"All thine shall be the subject main And every shore it circles thine." Every shore it circles—certainly a large claim! "Deutschland über Alles," "Germany over everything," is continually quoted as a claim that the whole world should be subjected to Germany; its real meaning is that the individual German must put his country above all other considerations; whatever his private interests may be, Germany must come first. An Englishman might say the same thing about England, though if the Englishman is a Christian, he would be wrong in saying that England came above *everything*—above his private interests, yes, but not above the claim of God and of the Christian Fellowship. In a recent book as excellent and careful as Mr. Harold Butler's "The Lost Peace" I find a strange lapse into misrepresentation. "Weltmacht oder Niedergang," 'World-power or extinction,'" Mr. Butler writes, "became the slogan of a German crusade against humanity. With tears in his eyes he chanted Father Arndt's programme for a Germanized universe:

So weit die deutsche Zunge klingt  
Und Gott im Himmel Lieder singt,  
Das soll es sein, das soll es sein,  
Das, wakre Deutscher, nenne dein.

"As far as the German tongue is heard and sings songs to God in heaven, that shall it be, that shall it be, that, stalwart German, name thine own." The poem in question by Arndt is as well known in Germany as "Ye Mariners of England" is in England. It was written at a time when Germany was divided up into a number of different states, most of them small ones, and a desire for the union of all German peoples, a perfectly legitimate desire, was widespread, especially in literary circles. Arndt in his poem asks what the German's Fatherland is, and he goes through a number of German states. Is it Bavaria? Is

it Saxony? And so on. And in each case he answers No, the German's Fatherland must be wider than that. In the conclusion of the poem come the lines Mr. Butler quotes. The German Fatherland must be wherever there is a German-speaking population. It is limited to that: there is no hint of a "Germanized universe." That is just an instance of the misrepresentation we should beware of in quotations adduced to support the indictment of another people. On the other hand there is in one of the principal songs of the Hitler Youth the expression of a definite intention to obtain world domination, "Heute gehört uns Deutschland, Morgen die ganze Welt," "To-day Germany belongs to us; to-morrow the whole world." Perhaps this does not go much farther than "Rule Britannia," "Every shore it circles thine," but while Englishmen never dream of taking seriously the rhetoric of the old song, the Nazis do take only too seriously the flamboyant declarations of the song of the Hitler Youth.

The fourth point was the submissiveness of Germans generally to their rulers, the absence of any effective opposition when the rulers lead the nation into aggressive adventures. But as to this there are certain observations to be made. In the first place, it would not be true to say that there has been no opposition at all in Germany to evil action on the part of the rulers. In the days before the last war, for instance, the Social Democrat Party did direct a stream of outspoken denunciation, in its Press and in the Reichstag, against the Colonial Administration guilty of the massacre of the Hereros. Its Press also attacked in no measured terms the Austrian ultimatum to Servia in the days immediately preceding the war in 1914 and spoke of "the Austrian despot's love of power." It is true that when war came the great body of the German Social-Democrats (not quite all) seemed to go flat and voted war-credits in the Reichstag. But even so, the section which broke away, which refused to vote war-credits and spoke in opposition to the war, continued, month by month, to grow larger and larger, and the Social Democrat majority which continued to vote war-credits, spoke at the same time against the Pan-German schemes of territorial annexation. It is not true, as it is sometimes said, that the Social Democrats hailed with acclamation the actions of their rulers during the last war: on the contrary they tried to put on a kind of brake. They may be charged with weakness, for their attempts to influence the Government were ineffective till the break-

down in 1918. But it is fair, I think, to remember how hard it is for any party in any nation, when the nation has once been involved by its Government in a war, however unjustifiable a war, to take action calculated to bring about its country's defeat. A number of British politicians and publicists denounced our war against the Boers, while it was going on, Mr. Lloyd George among them, but that was a relatively small, far-away war, and a surrender to the Boers would not have meant the subjugation of Britain itself to a foreign Power. But when two great nations, such as Britain and Germany, are locked in conflict, defeat must mean terrible hardships for the whole defeated people for an indefinite time. It is a cruel dilemma when men are confronted with the choice of either acquiescing in a wrong committed by their nation or bringing upon it, so far as their action can, the horrors of defeat, the vast suffering in which men and women and children, their own friends and kindred, will be involved. It requires a superhuman virtue to welcome the defeat of one's people, because the victory of one's people would entail injustice to other peoples. That was the dilemma which confronted German Socialists between 1914 and 1918. That is the dilemma which confronts all good Germans to-day. It is unquestionable that thousands of Germans who before September, 1939, disliked the Nazi regime, rallied to the Government, when once Germany was involved in war with Britain, because of the suffering and humiliation which defeat would entail for the German people. The great bulk of the German people now probably feel that everything must be done to stave that off, everything done that Germany may win. All talk here about the fearful retribution to be inflicted on the Germans when they are brought down, must prevent Germans who dislike Hitler and his gang from doing anything to weaken the hands of the German Army. And now when the fear is added of Germany being invaded by Russian Bolsheviks—a possibility which to the ordinary German *bourgeois* is one of horror—he must see his one salvation in a decisive German victory. All this means, of course, that one cannot, from the fact that the German people to-day are, for the great majority, behind Hitler, infer that the German people as a whole would support such a régime as the Nazis, supposing the fear of the consequences of defeat were removed. How widespread dislike of the Nazi régime was before the war it may be difficult to say with any exactness, but it certainly extended far, especially among the old and middle-aged. Rudolf Olden, in the book I

have already referred to, writes, "Hitler, Goering and Goebbels are hated and despised as no politician or general has ever been hated and despised in Germany before. Many times during the last years this or that person whom I have known before—or perhaps not known—scholars, writers, men in good position—have come from Germany and talked to me. They had to return to the great national prison-house and whispered one or two words to me—cautious words, but plain enough to understand. Bitter as the partisan hatred was which I had known in the Germany of former days, I had never come across hatred such as this. I can still see the distorted countenance, I can still hear the words which came strangely hissing from a German mouth—'Kill them! Kill them!'"

Olden is writing of a state of things before the outbreak of the present war, before there was the fear of defeat to deter those who hated the Nazi regime from active opposition. But there was already another fear to check them—the fear of torture in a concentration camp, of violent bodily mishandling behind the doors of some house. This fear, which already, before the war, made opponents of the régime speak only a few words in a whisper when they came to see Olden, still paralyses millions in Germany to-day. And yet, in spite of it, there are those who do let it be seen that they dislike the régime—perhaps not by speaking, perhaps only by significant silences and abstentions. Even for that they may run the risk of torture: the Germans in concentration camps to-day number thousands. Niemöller is not the only brave man. And if there are thousands in concentration camps, there must be millions who have like sentiments but dare not let it be known. And whenever to-day we speak of the tame submissiveness of the Germans to their rulers, perhaps we should ask ourselves whether we are quite sure that we, you or I, would take a brave line, if it meant torture and lingering painful death. This is another thing which makes it impossible for us to see into the hearts of the German people to-day, and know what there is under the paralysis of fear. Olden uses the fact of this application of terror by the Nazi government as evidence that the opposition to the Nazi regime is much greater than the opposition to the Kaiser's regime was at the time of the last war. Torture and concentration camps were not required then to make the people subservient to the rulers' will. Some misrepresentation of the facts in Government propaganda was then enough, "a couple of deft tricks, a couple

of lies." "A quarter of a century later, in order to achieve the same end," Olden says, "whips, revolvers, an army of secret police, the executioner's axe—all that had come to be necessary." Would it be necessary, we may ask, if the German people's submissiveness could be securely counted on by the rulers in all circumstances? There is yet another thing. The Government propaganda, the misrepresentation of facts, which was enough by itself at the time of the last war to keep the German people steady for over four years, has not been abandoned in the present war. It is used by the Nazi Government together with the system of terror. In the case of millions of Germans the reason why they do not offer any opposition to the Government is that they do not know the true facts, they are kept in the dark as to the atrocities perpetrated in Poland, Russia, France, Norway, Holland, Belgium, Yugoslavia, Greece, as to the events which brought about the conflict, as to the intentions of Britain and America. There are probably thousands of Germans who show no horror at the abominations which excite our profound disgust and indignation simply because they have never been given any knowledge of them. They see things only as the Nazi rulers present them. The difference between our system and the Nazi system is shown, I think, in nothing more significantly than in the fact that it is a capital offence in Germany to listen to an enemy broadcast, whereas anyone in Britain may listen, as much as he likes, to Lord Haw-haw's unpleasing nasal twang, or to the broadcasts in German which the Nazis give out to their own people. We are told that, in spite of the prohibition, many people in Germany do contrive to listen secretly to foreign broadcasts, but they must, I think, be a minority, compared with the millions who get all their ideas of things from the Government-controlled Press and broadcasting, and it is probably impossible by means of broadcasting to give even those who listen an adequate conception of the atrocities perpetrated in the conquered countries. How many of these, one wonders, would re-act as normal human beings, with disgust and horror, if the actions which excite these emotions in us were set plainly before their eyes?

One argument often brought forward to prove that Germans are essentially bad is that similar bad qualities were ascribed to the Germans of 1,800 years ago by Tacitus. This is a most unfortunate argument. The Germans of 1,800 years ago included our own Anglo-Saxon ancestors: we are as much the descendants

of those Germans as the inhabitants of Germany to-day. True, our Anglo-Saxon blood has been mixed to some extent with Celtic, in various proportions in different parts of the British Isles, but in Germany too the original Teutonic blood has been to some extent mixed with that of other peoples, especially with Slav blood in the eastern parts of Germany and in Austria. It is best to leave the Germans of Tacitus out of the business. The unpleasant characteristics we find in the Germans—the proclivity to aggression and robbery, the ugly national arrogance, the hectoring and brutality—are, I think, not to be explained by biological heredity, but by the sequence of historical events and social tradition which have shaped the people of Germany in these last centuries. Evidence that this is so may be seen in the fact that where Germans are removed to another environment, they do not display in any noticeable degree these unamiable characteristics. In the United States there is quite a considerable body of German origin, immigrants from Germany. I believe they are, generally speaking, excellent and amiable citizens, showing no biological and racial taint.

I have recently seen a quotation from *London Information*, the organ of the Austrian Socialists now in England. It gave a report received from Switzerland about the French soldiers who had been prisoners of war in Germany and had escaped into Switzerland. “The French prisoners,” the report says, “are full of hatred and desire for revenge against the Nazis, against the German régime. But they all make a great distinction between the Nazis and the German people. The extensive escape of prisoners of war is possible only because the German population in large districts of South Germany and near the frontier is opposed to the Nazis and gives the fugitives help. Those in question are working-men, peasants, women, old people, and the French soldiers speak of them with friendliness and gratitude. This astonishes the Swiss because in Switzerland hatred of the Germans is so general that it seems very strange to them to find such an attitude on the part of the refugees.” I have heard or seen more than one account of kindness and respect shown to the persecuted Jews by the Germans in their environment; when the Jews have been compelled to wear a badge to distinguish them, this in many places has not exposed them to popular contumely but to marked consideration.

The docility of the Germans to their rulers is not a characteristic altogether inauspicious for the future. It is a most unhappy



characteristic when the rulers are evilly-minded, but a fortunate characteristic when the rulers are well-disposed. Thus, if the better elements in Germany came into the ascendant the very quality of the German people which makes them now follow Hitler, might be a ground of hope for the future.

We know that there is a set of people amongst us to-day, numbering some men of standing, though it is most clamorously supported by the less reputable part of the Press—a set of people who declare that it is mere soft-headedness to make any distinction between good and bad Germans ; all Germans are bad, and if we defeat the Germans in this war, no weak compunction should hold us back from inflicting upon the German people as a whole sufferings and humiliations which, even if severe, are likely to fall short of what their horrible crimes against humanity deserve. From what you have heard of my paper you may divine I consider this view to be wrong. But there are two motives behind it, I think, which have relative justification, and if we oppose it without recognising that justification our opposition will lack effect. One motive is the fear lest, relying on what appear to be good elements in Germany, we should make again the same mistake that we made after the last war, the mistake of allowing Germany to build up another military system and once more make hell in the world. The other motive is the desire to see those guilty of inflicting atrocious sufferings on others suffer themselves, the desire for retributive justice.

With regard to the first of these two motives, it is true that if good elements have existed in Germany those elements have in the past proved ineffectual to restrain the rulers, when the rulers have been aggressively-minded. It is true that till we have very sound evidence that the German people has a firm will to stop aggression, our only security will be in Germany's power being inferior to ours or to the combined power of the group of peaceable peoples to which Britain adheres. This means that Germany, when defeated, must be prevented from re-arming, and, for this purpose, a fairly prolonged occupation of Germany by the victorious powers may be necessary. The occupation need not be such as to hamper the economic life of the country or deprive the Germans of the freedom to govern themselves, as they please, except in the matter of re-armament. If we who believe that the German people, as a whole, is docile rather than aggressively-minded, made it plain that we recognise the necessity of a military control of Germany after the war, we

might remove the suspicion of those who suppose us to be soft-headed people who, if we had our way, would procure Germany the opportunity to menace the world again. One may here glance at an incidental difficulty connected with a military control of Germany by other Powers whereby Germany is prevented from re-arming. If the controlling Powers are obliged to spend a large proportion of their national income on maintaining large armaments, while Germany is not allowed to do so, that will give a considerable economic advantage to Germany.

With regard to the second motive, the desire to inflict retributive punishment on Germany, I should say myself that it is not in its essence a wrong desire. I am one of those who believe that a nexus of justice binds wrong-doing and suffering, and that the spirit of man is right when it finds satisfaction in the perpetrator of cruelties incurring pain himself. But the practical question at issue in the case of Germany is whether it is for us to inflict the retributive suffering. If we are Christians we must believe that no one who wrongs his fellow-men will escape in the end the appropriate pain—after bodily death, if not in this world. Not a single stroke of the rubber truncheons in a concentration camp, not a single brutal blow, but is noted in Gods' books of judgment, and will be paid for in anguish hereafter, if it is not paid for by the pain of repentance and self-loathing here. This desperate anxiety lest by the machinations of the soft-headed the German criminals should get off punishment argues the absence of Christian faith. They will be punished all right ; no doubt of that. It may indeed be a good thing after the war to arraign before an international tribunal some of those Germans who are most responsible for the cruelties inflicted upon the people of the countries over-run, in contravention of International Law. This has been proposed, and it may be advocated on the ground that, in the event of another war, the punishment of some of those who had perpetrated outrages in this war might act as a deterrent. I don't know whether it would. But if this proposal were carried out, it would come very far short of adjusting retributive pain to evil-doing. No human justice can do that, can do anything approaching that, when the evil-doing has been committed by thousands and the responsibility is very variously distributed. How are you going to pick out the criminals to be punished ? Hitler, it might be claimed, bears the chief responsibility, and we might have a " Hang Hitler " cry, as we had a

“ Hang the Kaiser ” cry at the end of 1918. If you go beyond Hitler, is it the Generals you are going to arraign ? But the Generals might not really be as guilty as some of the Colonels, some of the Lieutenants. Some cruelties will have been committed by brutes in the ranks, without any command from their superiors. The cruelties committed in concentration camps within Germany we should, I take it, leave to Germans themselves to visit on Himmler and his subordinates ; it is only cruelties committed in the occupied countries that we, the champions of International Law, could arraign before our tribunal. In view of all this, it would seem to me wise not to make the execution of retributive justice our concern. Our concern should be, not to punish Germany, but to make Germany innocuous, as we should do if we prevented Germany from re-arming. If we do that firmly, political sagacity would, I think, dictate that we should try, as soon as possible, to make Europe economically comfortable, including Germany, as the Atlantic Charter indicates. It might gratify a vindictive passion on our side, if we could contemplate a Germany starving and miserable, but what would hold out the best hope for the future would be a Germany which had as full opportunity as any other nation for the industries of peace and peaceable commercial rivalry. There are two ways in which nations are made innocuous ; one is by lacking the power to attack other nations, the other is by losing the desire to attack. Now if you impose very hard conditions on a people you make the desire to attack very strong, it may be so strong that, even with the odds against it, that people will in desperation create fresh trouble in the world. The best security for a nation remaining quiet is when both these ways are combined, when the nation possesses no large armaments, and at the same time enjoys an economic comfort which causes turbulent desires to die down. It must be remembered that one thing behind the readiness of Germans to follow their rulers into aggressive war has been a real fear caused by their geographical position between Russia and France. Their dread of *Einkreisung*, “ Encirclement,” may have been baseless, so far as our intentions were concerned, but we know that in the case of individuals there is such a thing as claustrophobia, the irrational dread of being enclosed in a shut space, and the Germans have suffered from a national claustrophobia. Especially the neighbourhood of Russia has been an abiding nightmare to them. Such fear may even account for some of their cruelty, for nothing, as we know, can

be so cruel as fear. Many Germans have felt that they must fight in order to secure themselves a fair share in the world's goods, hemmed in as they are by enemies. Now supposing, as the result of this war, Germany is really reduced to impotence, utterly at the mercy of the victors, and finds that in this position it does enjoy its fair share, without any need to fight for it, there is hope, I think, of a generation of Germans arising who would regard surrounding peoples not as jealous enemies, but as members of the same family of nations. The settlement of the world after this war will have to adjust conditions all over the globe, and the settlement can never be secure if in the middle of Europe there is a starving miserable nation of seventy millions pining for revenge. It is to be noted that this view seems to be the one adopted by our Government, and is thus not merely a piece of sentimentalism on the part of the soft-headed. Point 4 of the Atlantic Charter runs: "They will endeavour with due respect for their existing obligations, to further enjoyment by all States, great and small, victor or vanquished, of access on equal terms to the trade and to the raw materials of the world which are needed for their economic prosperity." Note "victor or vanquished."

What of the exaction of indemnities? If you are going to examine that question as a matter of abstract justice, of retributive justice, undoubtedly Germany, which has committed these frightful ravages in some of the occupied countries and put the nations opposed to it to such vast expenditure, should pay compensation. On the other hand, a compensation which covered anything like the damage done would prevent any possibility of Germany's economic recovery, and we have learnt by experience how difficult it is for indemnities to be paid which do not hurt the interests of the receiver. A prosperous economic condition of the world as a whole, ourselves included, requires an economically prosperous Germany. If therefore we waive considerations of retributive justice, and consider only what is profitable for ourselves and the rest of the world, I think that the indemnities exacted from Germany should be something quite small. The restoration of the ravaged countries should be an international concern, Germany contributing something which would not prevent its own economic recovery.

In conclusion, there is a consideration which I think important. I have already indicated that one reason why decent Germans have shown no horror at the abominations committed

in the occupied countries is probably that they are ignorant of them. It will be an essential thing after the war to bring, fairly and squarely, to the knowledge of all Germans what has been done in those countries. It is likely that if this is made known and fear of the Gestapo is removed, quite a large body of decent Germans will show their detestation of the terrible crimes. How it is to be done would depend on the circumstances when the war is over. An adequate precise statement should of course be drawn up which should be in the hands of all Germans. There would no doubt be a possibility that many Germans would refuse to believe it, as enemy propaganda, but ways might be found of verifying the statement by bringing a certain number of men of influence to the actual places where the atrocities were committed. It might be preferable that the dissemination of this knowledge should be carried out by the German Government which supersedes the Nazi Government, and not by our agents, and this might be possible if the new German Government, as seems likely, is a strongly anti-Nazi one. The knowledge might induce many decent Germans to acquiesce in the provisional foreign control, as they recognised that a nation whose armies and public servants had committed such barbarities could not justly complain of exceptional treatment by other nations, its neighbours.

In any case, we should be adamant in not letting Germany re-arm.

#### DISCUSSION.

The Rev. A. W. PAYNE said he was in Leipzig before the last war—in the Church where Bach's Passion Music was composed—on what was called *Báse Tag*, or the annual Day of Fasting and Repentance for Saxony's national sin, and hearing the Probst preach on the Homily—"Woe unto you that are wise in your own eyes, and put light for darkness, bitter for sweet, sweet for bitter"—and the preacher declaring that the Germans had been teaching the Young Turk Party the idea of the Superman of Nietzsche, viz., A man may say "I am the Lord my God, there is none other God but me." He said it had been the downfall of the Young Turks and would be the cause of the downfall of Germany.

He also called to mind being, in Jerusalem, in an ornate Church which had been built on Mount Zion and for which the site was a gift

to the Kaiser by Abdul Hamid the Sultan of Turkey—"the Assassin"—and there were a number of beautiful shields representing the different German States all round the building. However, they were removed after the Delivery of Jerusalem, and the Flag of the King of the Belgians was hanging there instead, reminding one of the Picture in "Punch"—the Kaiser saying to the King—"So you've lost your all!" "But not my soul" was the reply.

The new German hymn-book just issued cuts out all Jewish reference to the Old Testament, and Luther's Easter Hymns, and leaves out the names of "Zion" and "The Lord of Hosts"; but the 500,000 copies will not perhaps unduly influence 80 million Germans. One is thankful for the Scripture—"Vengeance is mine, I will repay" saith the Lord—Jehovah—though Jehovah is blasphemously said to be "a back number." Jesus the King of the Jews, Jesus the Lamb in the midst of the Throne—shall yet be the universal King.

Lt.-Col. T. C. SKINNER said: We must all greatly regret Dr. Bevan's inability to be with us this afternoon, but I am sure you will be glad to know that the paper he has given us fulfils—as far as is capable of fulfilment—the desire and expectation of the Council. It will interest you to learn precisely what they had in mind in propounding the question.

In the confidence that the present war must issue in a victory for the forces of righteousness, the Council desired, as far as might be by preliminary discussion, to assist towards solution of some one, or more, of the grave problems of post-war reconstruction. But, recognizing that many of the political questions involved must lie outside the scope of the Society to discuss—*e.g.*, military measures, rectification of frontiers, resettlement of populations, indemnities, collective security, and so on, while these would, in any case, command closest attention of experts and statesmen of all countries, they concentrated on what is perhaps the most fundamental of all, the question of the present attitude of mind and consequent international outlook of the German people; it being felt that without a root-and-branch re-education of German youth from the cradle up, no external reforms or restraints could lead to anything better than a prolonged armistice.

Essentially a domestic matter, the problem is thus one of extreme difficulty. How far may it be possible, or even permissible, to exercise outside influence, however sympathetic, toward helping a defeated and humiliated nation on to its feet, in a moral sense ? Apart from the ineradicable antagonism of the Nazi element, reform, even from within, might meet with fierce opposition from a great bulk of the people who, having accepted a nefarious rule for the promise it contained of world-wide aggrandisement, would now be facing a terrible and humbling disillusionment.

And towards the solution of this problem it is due to Dr. Bevan to say that he has surely paved the way ; in that, while maintaining every safeguard and relaxing no whit of vigilance, be the years long or short, we should make it our settled aim to win over the German people to confidence, trust, and ultimate friendship, by unwavering exercise of true Christian statesmanship. That done, the door to further approaches will open automatically. "By mercy *and truth* iniquity is purged."

Mr. LESLIE said : This otherwise admirable paper has one defect. It ignores a (or, possibly, the) major factor in the problem to be solved. It is to be supposed that Russia will have a large part in shaping the future in Germany. The Russian propaganda machine will try to induce the German masses to set up a "Classless" society. If that happens, as is possible or probable, how will it affect Dr. Bevan's problem ?

Mr. A. KUNZ said : With reference to the paper of Dr. Edwyn Bevan I should like to make the following remarks :

A comparison has been made between Germany's song "Deutschland, Deutschland über Alles" and the song "Britannia Rules the Waves." Now, when the English sing about Britannia they certainly do not mean that, by being a great sea-power, they wish to bully all nations. Admittedly, the original meaning of the German text was that Germany's welfare, to the patriotic German, ranked before all other things. But the present meaning, and this for a good long time, is that Germany does wish to domineer over the world. As an Austrian whose country has been invaded by the German Reich, against the will of the majority of the people, I know what the modern German is.

And perhaps I may be allowed to explain a thing which I am so often asked in England, *i.e.* : What are the Austrians ? Are they Germans ? My answer is : Germans, yes . . . to a certain extent ; Reichs-Germans definitely not. Racially the Austrians are a people of Germanic stock with strong admixtures of Celtic, Latin, Slav and a drop of Eastern blood. Culturally they are what one may call " old " Germans, as are the German-speaking Swiss, the Dutch, the Flemish, as were the Chaucerian English. Austrian civilisation rests on that of the ancient Roman Empire, of the Holy Roman Empire and on the universalism of European Christianity. The new German Reich is a political organisation created and held together by Prussian militarism. It is diametrically opposed to the Spirit of Austria.

And that leads me to another point which has come up in the discussion, the problem of retribution. Well, I think there must be justice ; and the people who have committed crimes, all of them, must be brought to justice. They must be tried before a criminal court, and they must get what they deserve. What I say may not sound quite Christian to a number of Christians, but I myself think that it is our duty as Christians to punish those who have committed crimes, and that not to retribute is a real and great sin of omission.

Finally I should like to refer to the remarks of one of the speakers, *i.e.*, that Dr. Bevan left out in his paper the problem of Russia and the important rôle she will play after the war. Without entering into details I would only like to say that for this very reason I am for the creation of a United States of Europe. This will not come overnight. There will first be groups of federated (not confederated) States. There will, perhaps, be one in Western Europe, one in the south ; the German States may federate and thus loosen the Prussian grip. As to Austria she will federate with her neighbours in Central Europe who are, if not in language certainly in temperament and history, her kith and kin.

But the ultimate aim, which we may reach not until the present generation is old or dead, must be the United States of Europe. This united continental Europe, between the Anglo-American world in the west and the U.S.S.R. in the east, will establish that dynamic balance between large territories which is essential for the future peace and well-being of the world.



Summing up the discussion the Chairman (Mr. WILSON HARRIS) said he was glad that Dr. Bevan had drawn attention to this problem, "Can Germany be Cured?" The author was a very competent observer of the tendencies in Germany and was well qualified to deal with such a subject.

He agreed with Dr. Bevan that the German people generally were responsible for permitting Hitler to assume power. There was considerable truth in the dictum that "a people got the Government it deserved," and those in Germany who disapproved appeared few in number; though, in cases like that of Niemoller, they were very courageous, and such were forced into concentration camps. Germany as a nation, however, must bear the responsibility for its action in permitting the Nazi party to rule. They will not be cured of this propensity to wage warfare on their neighbours unless at the end of this struggle retribution is exacted and those found responsible by law and equity are awarded a punishment that will fit the crime. The problem of how this is to be done is admittedly difficult, but not impossible, and he supported the contention of the Counsellor of the late Austrian Legation that those responsible for acts of atrocity in the occupied countries should be brought before tribunals and given, where possible, sentences commensurate with their deeds. Some Governments were already accumulating evidence against certain of these men.

But this is not enough; there can be no question that the mentality of the German people is such that their basic ideas must be changed. Nazis must be denazified and Germans taught how to live peaceably alongside their neighbours. Many years have been spent indoctrinating the youth of the country with the concept of "Deutschland uber Alles." These ideas must be eradicated and this should be done by their own educationists by action within Germany and not from without.

We will fail in our duty unless we insist rigidly on disarmament and vigilantly watch against any possible rearmament.

There is one hopeful sign; some of the religious leaders in Germany have stood courageously against the present tyranny. It may be that these who have not bowed the knee to Baal will form a nucleus which will assist in radically altering the method of bringing up German youth.

## WRITTEN COMMUNICATIONS.

Mr. DOUGLAS DEWAR wrote : Dr. Bevan's answer to the question, " Can Germany be Cured ?" seems to me like many of the answers of the Brains Trust to questions put to it—very entertaining but of little practical use. The crux of the problem is how to deal with the millions of young men and women whose minds have been polluted by the devil-possessed gang of which Hitler is the head. For a decade the members of this gang have set themselves to convert the youth of Germany into cruel, blood-thirsty pagans. In 1933 the American journalist Leland Stowe, in consequence of an enquiry made by him in Hitler's New Germany, was moved to write a book entitled " Nazi Germany means War." One of the chapters of this book is headed " Catching them while young." In this Stowe says that in 1933 it was estimated that the total enrolment in the Hitler Jugend was at least 1½ million boys and girls from 7 to 18 years of age. He writes (p. 61), " The great mass of school children are drawn or forced into the Hitler Jugend from the moment they reach seven years of age." One of the first acts of the Hitler Government was to ban all youth organisations, including the Boy Scouts, seize all their property and turn this over to the Hitler Jugend. Stowe says that in 1933 almost every school in Germany had its Hitler Jugend organisation and those who refused to join were outlawed by their schoolmates. He saw every morning at Berlin in a schoolyard at 8.30 boys of from 11 to 16 years old being instructed in the art of throwing wooden replicas of hand grenades. On reaching their nineteenth year boys were automatically absorbed in the storm troops, S.A. or S.S. On October 31st, 1933, a monument to the Archangel Michael was unveiled in a Westphalian town and several hundreds of Hitler Jugend were present at the ceremony. A youth leader called out : " Young crew raise the hand of oath before the monument which is dedicated to the sublimity of blood-shedding." " Hundreds of young hands went skyward, fingers straight and firm."

All the universities gave courses of instruction in military science including the method of filling gas bombs.

Hitler has almost completely dechristianised the young men and women of Germany. No efforts have been spared to destroy parental influence over children. About five years ago my son while

in Switzerland met a German woman who was visiting Switzerland with her son. She said she had come there to enjoy a little of her son's companionship, which was impossible in Germany, because every day after the boy returned home from school she had to attend a meeting of a woman's institute which she had been compelled to join to keep in the good books of the Nazis, and no sooner had she got back from her meeting than the boy had to go off to a youth meeting, the two meetings having been timed so as to keep children and parents apart as far as possible. Thus, there are several millions of Germans under 28 years of age which have been inoculated with Nazi poison ; in consequence it is not surprising that Nazi airmen are capable of machine-gunning English children playing in fields and German seamen torpedo neutral merchant ships without making provision for the safety of the crews. Many of the males of these depraved young people will be killed in the war, but a large number will survive, and these, together with the younger women and children, will form the backbone of post-war Germany. The problem is the cure of these rather than that of the older people.

Sir AMBROSE FLEMING wrote : In all, or nearly all, of the schemes for the post-war treatment of Nazi Germany, rightly based on the assumption of entire final victory for the Allies, it is remarkable that they take for granted that the necessary retribution for Nazi crimes will be fixed as to nature and duration entirely by the human judgment of the Allies. That there is an Almighty Creator and judge of nations as well as of individuals is a truth clearly taught to us in Holy Scripture.

We learn there that great military Powers are used by God as instruments for His chastisement of other nations, but also that these instruments in turn are punished and discarded by Him when their work is done. Thus, for instance, the great ancient military nations of Assyria and Babylon were employed to chasten the chosen nation of Israel for their idolatry and disobedience to the laws of God. But the pagan people in turn fell under the annihilating power of the Judge of all men when their work as His agents was accomplished. Thus Isaiah tells us (see Isaiah x, 12), " Wherefore it shall come to pass that when the Lord hath performed His whole work on Mount Zion and Jerusalem I will punish the stout heart of the King of Assyria and the glory of his high looks."

The final fate of Assyria is told to us in graphic words in the book of the prophet Nahum the Elkoshite. Nineveh, the capital of Assyria, was destroyed about 606 B.C. by Nabopolassar, the father of Nebuchadnezzar, and the very site of the city was forgotten for over 2000 years until re-found by Botta and Layard, the explorers. In turn Babylon, the principal centre of idolatry, which had been used for the chastisement of Judea was then overcome by the Medo-Persian power.

In the past great nations once very strong who have offended against the eternal laws of justice and mercy have fallen from power. Also all those men who have nursed vain dreams of world empire based on military force, such as Phillip II of Spain, Louis XIV of France, Napoleon Buonaparte, and even now Hitler have in time had to learn that this universal dominion is reserved for one like the Son of Man to whom an everlasting kingdom has been given in ages long past by the Ancient of Days, a dominion which shall not pass away, and a kingdom which shall not be destroyed " as told us in the book of the prophet Daniel (vii, 14).

We may then be certain that the infamous Nazism, which for a time has been permitted to ride rough-shod over the nations of Europe, will ultimately fall under the scourge of God and vanish from a world it has made hideous and polluted by its crimes.

Mr. DOUGLAS REID wrote : We have had some good things from the Germans. There was the Reformation and Dr. Martin Luther the great Reformation leader. The great missionary Church is the Moravian Church which has one missionary in 75 and has gone to many lands and to difficult fields. George Muller was a German from Prussia who came to Bristol and established an orphanage, teaching the whole Church a lesson in faith. When an old man he made many missionary journeys throughout the world. Politically we owe something to Germany, as in 1714 Parliament went past nearer heirs and called George I to be king. Thus the Protestant faith was secured and the government developed along the lines of a limited monarchy. The Stuarts had not in the end proved worthy.

On the other hand Christianity came late to Germany. Otto, Bishop of Banberg, was one of the early missionaries. The swastika is the crooked cross or the emblem of paganism before Christianity

conquered. Frederick the Great helped to put Germany on the wrong path as some of his methods were not good. Rationalism and departure from God's Word have led their country wrong in recent years. Queen Victoria sought to bring about a good relationship with Germany by promoting marriages of her family with them, but this has only kept peace for a certain period. In the China Island Mission through the bonds of the Gospel the German associate missionaries have remained true to the Mission and fellowship with them has stood the test of war.

Until a few years before 1914 there was a good relationship between this country and the Germans. They sent German bands (musicians) here. There was a German Church in Edinburgh and one in Glasgow. There have been intermarriages. The word German means kinsman, and there is in law the term a brother germane, meaning a brother in full blood, as distinct from a brother consanguine or and a brother uterine. We are told in geography that we are descended from Jutes and Angles from North Germany and Denmark.

There is the Fellowship of Reconciliation and at a recent meeting in Paisley I learned some facts. The blockade after the last war caused many deaths of young children and consequently caused ill-feeling among Germans. The Quakers found the people in Austria and Germany in a sorry state and helped them, giving cattle to those in Austria. If thine enemy hunger feed him and if he thirst give him drink is a Divine command. Prov. xxv, 21, 22, and Romans xii, 20. I think, however, we cannot afford to make peace with the present rulers of Germany. It seems to me that a few Germans should be proscribed for punishment by this country and this would act as a deterrent to the cruelties in the concentration camps. It is the dead condition of the State Church in Germany for the last 50 years that has brought these horrors to pass as Heinz Leuner, a Christian Jew from Germany, was maintaining just recently.

We should seek as Christians to hate the sin but love the sinner. There is a controversy going on in the *Glasgow Herald* as the Church of Scotland moderator—moderator that is for last year—has rightly taken exception to soldiers being taught hate. Hatred of enemies is wrong in the light of the New Testament.

There should have been more preaching of the Gospel throughout Europe and in Germany as well as in the evangelised parts of the world. If this is yet done, Germany can and will be saved as the Gospel is the power of God unto salvation.

Mr. B. B. KNOPP wrote: This essay could not fail to be controversial, dealing as it does with a most important current topic upon which every man in the street, rightly or wrongly (wrongly, in my view), considers himself qualified to express an opinion.

Nevertheless, I think Dr. Bevan has failed to reach the high standard we have learned to expect from our Society's papers. In trying to keep the balance between two extreme views, in the mistaken idea that truth *always* lies somewhere between, Dr. Bevan frequently falls over himself.

In his first paragraph the learned author gives as an inference from the negative answer to his question, "to prevent Germany from rearming by a military occupation of the country"; yet we find him, in his very last sentence, saying exactly the same thing, after having given a halting affirmative answer to his title question.

It is rather splitting hairs to assert that because the Prussian aggression of 1866 against Austria was against fellow Germans, it was not therefore "German aggression." Does not Dr. Bevan consider the 1938 annexation of Austria to have been "German aggression"?

It was scarcely to be expected that Herr Rauschning, "himself a Prussian," as the author naïvely says, would support the contention that the root of all German evil is Prussian.

Dr. Bevan quotes Nietzsche, who might almost be called "the apostle of the Nazis," as considering the German people anything but a *Herrenvolk*. I am at present at an R.A.F. camp, and cut off from all my sources of reference, but I think I am right in saying that Hitler himself, in "Mein Kampf," speaks of the Germans in similar disparaging terms.

Again, in comparing "Rule, Britannia" with German songs, our author is at sea. The British song speaks of fact, but the German of intention. Who can deny that Britain did "rule the waves," and who, by the way, does not regret that she surrendered her pre-eminence?

Does Dr. Bevan mean to imply that, because some of our own ancestors were of the same race as some ancestors of the Germans, we must therefore have inherited all the vices of the Germans ? Have we not learned enough of biology and history to appreciate what different education and environment could have accomplished, even if we did not know what actually they have done ? What, again, caused the " historical events and social tradition " which have shaped the German people ?

Our author employs a curious argument to save from punishment those Germans who have been guilty of vile atrocities. He says in effect that we need not worry, as God will sooner or later punish them anyway. Does he not realise that this contention, if granted, would also apply to common thieves, murderers, and all other criminals ? In other words we could abolish our Law Courts.

Dr. Bevan piously hopes that if the facts are brought home to them, some decent Germans will show their detestation of the horrible crimes committed against over-run peoples. Nothing is more certain than that after defeat all typical Germans will shout themselves hoarse with repentance, but how far we could regard this remorse as genuine is another matter.

But, to my mind, the worst feature of this paper, and indeed of much that is spoken of post-war planning, is the desperate anxiety lest Germany should suffer economically. Even before the outbreak of hostilities, and much more so since, the Germans have undermined and destroyed the economic systems of all their neighbours, and we must be concerned with these before we consider making Germany " economically comfortable." True, Germany must not starve while the rest of the world rebuilds its industries, but is she to be the spoiled darling of Europe ? She must never again be in a position even to begin a drive for economic supremacy, to which she was well on the way in 1914, and, to a limited extent, again in 1939. Can Dr. Bevan explain how, without a permanent military occupation, an economically prosperous Germany can be prevented from rearming ?

Germany, by her treatment of and declared intentions towards the countries she has over-run, has shown us the way in which she herself must be dealt with. We must go through the country and systematically destroy all the major factories and

such of the minor as we decide, and we must make it clear to Germany that henceforward her principal industry is Agriculture. The Czechs, Poles, Dutch and the rest must, of course, repossess their own.

This would entail vast movements of population, but some such are already necessary to undo the wrong wrought by Hitler. Any surplus Germans could be absorbed into underdeveloped lands, where, if we accept Dr. Bevan's view, they would make good citizens.

These terms are hard, but whatever our terms were, a second Hitler could easily persuade his fellow Germans that they were monstrous, just as the first Hitler did the easy terms of Versailles, under which, be it remembered, Germany paid nothing.

There are other points in the paper which could be taken up, but the answer to the question, "Can Germany be cured?" is, "We do not know." But the world cannot afford to take the risk of the answer being negative.

The Rev. Principal H. S. CURR wrote: The Institute is deeply indebted to Dr. Bevan for his statement and discussion of a modern problem, so vast and varied, that it may almost be said to dwarf every other question which agitates the mind of the world. I am particularly grateful to him for the clear and conclusive way in which he has argued that there can be no hope or prospect of a prolonged period of peace and concord in Europe, such as Hitler himself is said to have described as most desirable, if it presents the spectacle of a nation, whose territory is situated in its centre, miserable, poor, and consumed with a passion for revenge, and haunted with dreams of conquest. When we remember that the population of Germany is roughly equal to that of the British Isles and France, the gravity of the difficulty is flung into still stronger relief.

Four reflections occur to me which may serve as foot-notes to Dr. Bevan's survey. The first is that Germany can only be reformed from within. External factors may hasten such a change, but something which might be called a national conversion in the old evangelical sense of the term will alone suffice. That must be the work of God. Nations like individuals are born again that they may walk in newness of life through the Holy Spirit Whose work it is to convict the world of sin, and righteousness, and judg-



ment. Condemnation is worse than useless unless it leads to self-condemnation, and that only God can bring to pass.

The second reflection is that the obnoxious aspects of German character and policy are capable of sublimation by the grace of God. Sublimation is, of course, the term so favoured by modern psychologists for the elevation and purification of base impulses. Thus covetousness is sublimated when it becomes a case of coveting earnestly the best gifts (1 Cor. xii, 31). In the same fashion, somebody has spoken of the Divine brutality of Martin Luther. It may be recalled that Our Lord surnamed His apostles, James and John, Boanerges, meaning sons of thunder. Such raw material can, however, be sanctified and beautified until it ceases to become a minister of mischief, and is transformed into an angel of light, through the power and demonstration of the Holy Spirit.

The third reflection may be stated in the words of Talleyrand, the great French statesman at the end of the eighteenth century. "Bayonets are good for every purpose except to sit on them." He meant that men and nations cannot be held down indefinitely by force. It may be necessary to discipline Germany for a season at the close of the war, but that must be of a temporary and remedial nature. Of friend and foe may it yet be said that, while no chastening for the present seemeth to be joyous, but grievous : nevertheless afterward it yieldeth the peaceable fruit of righteousness unto them which are exercised thereby (Hebrews xi, 11).

The fourth reflection is that evil like fever or fire must often burn itself out in accordance with the Scots' proverb that an empty house is better than a bad tenant.

Mr. E. J. G. TITTERINGTON wrote : In 1916 there appeared a remarkable book in Denmark, by Axel Garde, under the title "Preussens Tyskland," or "Prussia's Germany," with the sub-title "State, Kultur, Tradition in the 19th and 20th Centuries." I believe there was a project at the time to have the book translated into English, but whether any translation of it exists I am unable to say. The book opens with the sentence, "Is any land in Europe more rich in contradictions, composed of more heterogeneous elements than the great German Empire ?" The theme of the book is to show how this mass of contradictory elements has been consciously welded and transformed into the Germany we know

to-day by means military, political and economic, with the powerful aid of German philosophy, the whole process being traced historically over a period of some 150 years. Some passages from the concluding chapter may be worth quoting, as bearing directly on the theme of Dr. Bevan's paper: "Will the energy of Germany succeed, as Nietzsche said, in reaching beyond itself through itself—'durch deutsches Wesen über deutsches Wesen heraus?' That is the question. Germany has in her own past all the means to that end; she possesses the springs within herself. She has her order, her exactitude, her industry, her forthrightness, her loyal capacity for toil . . . The German nation possesses values which can make it into the most industrious and honest of peoples. That which has crested the national Prussian junkerdom can also be applied to another form of society. But Germany possesses other values also. She has the depth of her thought, her idealism, her strong loyal heart . . . Is it even now possible for Germany to raise up these lost values from the centuries of nationalism? Germany is the land of Bismarck. But she is equally the land of Goethe, Hebbel and Nietzsche. She possesses a past which is not merely Prussia." And again, "It is a mighty development that Germany has gone through in the 19th century. Will its future be to seek its way back to that deep humanity it has owned? Nationalism has done its work. It has finished the century's development with the death of German youth in the trenches." I do not think Axel Garde's conclusions will be found to differ very greatly from Dr. Bevan's.

There are one or two questions I should like to ask on minor points. I take it that the last sentence of the first paragraph on page 176 does not necessarily imply that actual occupation costs would fall on the occupying powers? Then on page 177 Dr. Bevan says, "the best hope for the future would be a Germany which had as full opportunity as any other nation for the industries of peace and peaceable commercial rivalry." Peaceable commercial rivalry—yes; but German industry has been so keyed to the war machine, and utilised so much to wage economic warfare, that surely disarmament must mean not only military disarmament, but a large measure of economic disarmament as well—taking away Germany's power to wage commercial war through her industries,

the manipulation of foreign exchange or by other methods, and this would surely involve a considerable degree of interference with her industry as a whole. I do not see how this is to be avoided.

We may perhaps agree with Dr. Bevan that it would be unwise to levy a heavy indemnity from Germany. But would he dissent from a suggestion that the restoration of the life and industry of Poland and other ravaged lands is at least as important as the maintenance of those of Germany, and that it might be found equitable to compel Germany to contribute by materials, or labour, or both to such restoration, leaving her own restoration to wait till this is accomplished ?

These are perhaps minor points, but there is one issue that strikes deeper. Dr. Bevan appears to take for granted, on page 178, the continuation (or resumption) of the economic and commercial order to which we have been accustomed. Are we so sure of this ; and are there not in the Scriptures some passages which might suggest a different conclusion ?

Major H. B. CLARKE wrote : I was unable to remain for the discussion, but would like to suggest for Dr. Bevan's consideration the following points :—

He has omitted several facts from his consideration, chief of which are these—

(1) The German educational system. Any Christian training they ever get has been ground out of the children and the Nazi teaching pumped into them for many years. It would, therefore, be necessary to remodel their entire educational system, and put it under definite Christian management for a generation before any appreciable change of their outlook can be expected. To apply this from outside is, I think, obviously impracticable.

(2) Page 174, line 13, is hardly borne out by the evidence we have from this and the last war that Germans abroad are still agents of their Government.

(3) Page 176 is a simple repetition of what was urged immediately after the Armistice of the last war. The Germans had changed their Government, were not responsible for the ill-deeds of their late rulers, etc., we must not be vindictive, etc. I would suggest to Dr. Bevan that the Germans will do exactly the same thing again

in the hope of a similar result, and that the impunity which attended the perpetrators of their brutalities of the last war is the direct cause of the brutalities of the present one. They count on escaping any earthly retribution and will risk eternity cheerfully. He need not trouble himself by the way about *our* inflicting the retribution. If the German armies are beaten, the nations they have trodden down will see to the retribution part.

(4) He is horrified at the idea of 70 millions of Germans in distress economically after the war. A similar plea was used in 1919 and Germany was financed to enable her to recover. The result was a fraudulent bankruptcy. Since then German commerce has been simply an agent of German policy and, as long as it is tolerated at all, will continue to be so.

(5) Dr. Bevan affirms that Germany must not be allowed to rearm. But she did even before Hitler, and information to that effect was pooh-poohed and men babbled of the League of Nations, etc., and bowed down to that graven image and hoped it would deliver them from war. There is but one way of securing that Germany does not rearm and that is to take from her the means to do so, viz., the Ruhr, and Rhine valleys, and Silesia. She will then be unable to do so.

Lastly, I would remind Dr. Bevan of a case somewhat in point in ancient days. It is described in 1 Kings xx, 42.

There is no cure for Germany in the way he suggests. The only possible one is the grace of God reviving His work in that country.

## 850TH ORDINARY GENERAL MEETING.

HELD IN ROOM 19, LIVINGSTONE HOUSE, BROADWAY, S.W.1,  
ON MONDAY, JUNE 1ST, 1942, AT 6 P.M.

SIR FREDERIC KENYON, K.C.B., D.LITT., LL.D., IN THE  
CHAIR.

The Minutes of the previous meeting were read, confirmed and signed.

The CHAIRMAN then called on Dr. W. J. Martin to read his paper entitled  
"The Genius of the Language of the Old Testament."

The meeting was then thrown open to discussion, in which Group-Captain Wiseman took part.

Written communications were received from Prof. Edward Robertson, Rev. Principal H. S. Curr, Mr. E. B. W. Chappelow, and Dr. Barcroft Anderson.

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### *THE GENIUS OF THE LANGUAGE OF THE OLD TESTAMENT.*

By W. J. MARTIN, Esq., M.A., Ph.D.

**L**ANGUAGE, of all man's achievements at once the most familiar and the most mysterious, has been an object of age-long interest to thoughtful men. There is abundant evidence of this in the literary remains of the ancient world, but nowhere is it more strikingly exhibited than in the constant readiness of the Hebrew to furnish a host of proper names with etymological explanations, necessitated in his view either by the context or by the subtlety of the form. His interest in language and linguistic phenomena did not end here. The casual observation on linguistic development so familiar to us now in 1 Samuel ix, 9, "Beforetime in Israel when a man came to enquire of God, thus he spoke, Come and let us go to the seer (אִנִּי): for he that is now called a prophet (נָבִי) was formerly called a seer" was a remarkable observation to make at that time, and indeed the significance of such a statement was not fully grasped until the days of Grimm. It was left, as is well known, to the writers of the 19th century to realise and to show that there was a history of customs and languages as well as of kings and

dynasties. The full realisation of the fact that language was not divinely created, immutable in form, brought about a revolution in the world of philological thought and introduced the era of comparative grammar. From what foolish inferences and whimsical inventions would an inkling of the implication of the note in Samuel have saved generations of worthy but tradition-trammelled scholars, to whom Hebrew was the *lingua sacra*, if not indeed the *lingua divina*, the language of paradise, the progenitor of all tongues, the first and only preference of God, and like Him changeless. To-day we take a more sober and a more scientific view of this human but none the less noble language. Semantic change, that endemic linguistic phenomenon noticed by the writer of the above passage, was not the sole instance of change and development in Hebrew. In it we find (and our findings are verified by a concatenation of documentary data unparalleled in the history of any other language family) an instance, far from universal, of an inflected language losing its case-endings. Persian and English are the other well-known instances; and the concomitant circumstances are no less familiar: imposition of a foreign tongue, the correlative of a foreign yoke: subsequent re-assertion of liberty and with it of the mother tongue, but in a modified form. But the circumstances that brought about this momentous change in Hebrew are shrouded in mystery, and Semitic philologists seem never to have made the question of the historical *milieu*, or even the *terminus ad quem*, and the contributory causes subjects of serious inquiry. Whether or how far an answer can be given is a matter that cannot be conveniently discussed within the limits of this paper.

To venture to discuss the genius of language may well seem a presumptuous undertaking. It might not be out of place to take as our phylactery the words used by Jenisch in what seemed to some his misguided attempt to answer the question asked by the Berlin Academy, What would an ideal language be like? "In language the whole intellectual and moral essence of a man is to some extent revealed. 'Speak, and you are' is rightly said by the Oriental. The language of the natural man is savage and rude, that of the cultured man is elegant and polished. As the Greek was subtle in thought and sensuously refined in feeling—as the Roman was serious and practical rather than speculative—as the Frenchman is popular and sociable—as the Briton is profound and the German philosophic—so are

also the languages of each of these nations.”\* If this statement be accepted, then our study should prove not without profit.

Before we embark on an investigation of the Hebrew language let us glance for a moment at the nature of the extant text of the Old Testament. It was not until well into the present era that a school of scribes, known as the Masoretes, undertook the task of adding vowels to what had hitherto been a consonantal text. Hebrew scholars have so often expatiated on the disadvantages of such a system and the difficulties that ensued once Hebrew ceased to be spoken that we have overlooked the fact that for a living language in a primitive community it had doubtless its compensations. We know of no instance of a new language arising from a change of vowels only. Such a change—even considerable divergence—produces at most only dialects, and in Palestine, small as it was, restricted movement must inevitably have nurtured the growth of dialects. The advantage of a consonantal text was twofold: it was intelligible not only to those who were separated geographically, with consequent divergences in speech, but also to those whose language had undergone diachronistic change. A Northern scribe read to his hearers from his text a dialect differing widely from that read by his Southern counterpart from the selfsame script. Diachronistic change is attested by those etymological spellings found in Hebrew: the spelling **רֶשֶׁת** shows that what was later pronounced *rōš* was at an earlier stage pronounced *rāš*. A consonant-cum-vowel script would have necessitated periodic revisions involving us in even greater embarrassments than the Masoretic punctuation. For our purpose we shall treat the Masoretic readings (excluding those instances where the sense is obviously violated) as one of many possible co-ordinate dialects.

### THE VOCABULARY OF HEBREW.

The Semitic root consists usually, as is well known, of three elements. By the use of internal inflexion many various meanings could be brought out. For instance, by doubling the middle radical the notion of repetition or habit could be expressed. To take a few examples at random: **אִכָּר** (*'ikkar*) farmer, **צַדִּיק** (*sajjad*) hunter, **רֶשֶׁת** (*qaššat*) archer, **גַּנָּב** (*gannab*) professional

\* Quoted by O. Jespersen, "Language, its Nature, Development and Origin" (1922), p. 30.

thief. Simple and sufficient as this method was it served only to bring out different aspects of a primary idea. Hebrew had, however, like all languages, the problem of extension of vocabulary. It resorted seldom, however, to the expedient of borrowing from another language. It seems, in some instances, to have achieved its end by ringing the changes on the final radical of the root, as in the group of words נגש (nagaš) to approach, נגע (naga') to touch, נגף (nagap) to smite, נגן (nagan) to strike (the strings of an instrument). Or again, in נשף (našak) to bite, נשם (našam) to breathe heavily, נשף (našap) to blow, נשק (našaq) to kiss. Or again, פגש (pagaš) to meet, פגע (paga') to run against. A comparison of this group with the first would seem to indicate that certain consonants had specific functions, but with the limited material at our disposal it would be unwise to attempt to draw conclusions.

In the field of vocabulary Hebrew showed a flexibility and a dexterity to which the conceptual loans in all European languages bear eloquent tribute.\* Such conceptual loans first appear in the *κοινή* of the New Testament, where one is struck by the fact that Greek, despite its rich vocabulary both in philosophy and ethics, had no equivalents for many terms, and was compelled to use existing words giving them an enhanced connotation hitherto undiscovered. Examples of such conceptual loans in the New Testament (the medium, moreover, through which those found in European languages passed) are: צדק (sadaq) to be righteous, and especially in its causative form הצדיק (hisdiq) "to declare righteous," Greek *δικαιώω*, Latin *justificare*; אהב ('ahab) Greek *ἀγαπάω*, Latin *amare* to love (with God both as subject and object), ברך (barak) to bless, Greek *εὐλογέω*, Latin *benedicere*; חטא (hata') to sin, Greek *ἁμαρτάνω* Latin *peccare*; האמין (he'min) to believe, to trust, Greek *πιστεύω*, Latin *credo*; our word "amen" comes from this root. Some conceptual loans doubtless never passed beyond the New Testament, e.g., שמע (šama') to hear, which denotes in Hebrew: to perceive, to apprehend, and to respond. Among substantives the best known are נביא (nabi') prophet, Greek *προφήτης*, Latin *propheta*; חסד (hesed) favour, grace, Greek *χάρις*, Latin *gratia*; מלאך (mal'ak) messenger, denoting usually a messenger from God, Greek *ἄγγελος*, Latin, *angelus*. Of the history of the

\* See chapter by A. Meillet, "Influence of the Hebrew Bible on European Languages" in "The Legacy of Israel" (1927).



development of many of these denominations no lucid explanation can be given ; that of others is obvious. **נביא** (nabī') a prophet, is derived from a root whose primary meaning was to be in ecstasy ; later it was applied to those men in Israel whose vocation was to warn the nation of the consequences of the worship of materialism and of the neglect of truth. It is unfortunate that we have come to look on foretelling as the prophet's chief rôle : to the Hebrew it was only a small part of his work.

The antecedents of **הלל** (hillel) to praise, from which comes our hallelujah, appear to be traceable. It seems to be very probable that it is connected with a root meaning " new moon " (Arabic **سلايل**) and so provided a deverbative " to celebrate festivals at the new moon." (The new moon setting the time, not furnishing the object of the celebrations.) From this it came to convey the idea of celebration **κατ'ἑξοχήν**.

It is clear from these two instances, and a host of others that could be produced, that Hebrew had the facility to as great an extent as say a language like our own for adapting concrete terms to express abstract ideas. We adopt the expedient of borrowing the concrete term from another language and using it in the required figurative sense. The Hebrew applied the adaptation principle to the creation of terms for mental and spiritual moods, and the vocabulary it thus accumulated is a commendable achievement. These coinages or transferences are to be met most frequently in the book of Psalms. In any list the term **לב** (leb) must occupy a prominent place. It is so pregnant that it is impossible to translate it by any one word in the English language. True the common translation " heart " is a conceptual loan, but the borrowing has by no means exhausted the capital. It denotes (a) heart, in the literal sense ; (b) the centre of the intellectual life ; (c) as seat of all the inner emotions ; (d) of thoughts and imaginations (Song of Songs v, 2) ; (e) of the desires and determinations ; (f) of the understanding and wisdom ; (g) as the centre and source of the moral life. A cognate term is **כליות** literally " kidneys." It was used of the seat of the feelings. One of the most original and the most expressive is **נפש** (nep̄š) soul (Greek **ψυχή**), the primary meaning of the word was breath. It came to denote that mysterious something that imparts life to a body, human or animal. In man it was the seat of the feelings and affections. Similar in some respects to **נפש** (nep̄š) is **רוח** (ruah) " spirit," but this stresses more the spiritual side of man. In Greek it

appears as the conceptual loan “*πνεῦμα*.” רצון (*raṣōn*) in the sense “acceptable will” is a notable creation, as a moment’s reflection on the respective motives of the Hebrew and Greek in offering up sacrifices will show: in the one instance to please the Deity, in the other to avoid his displeasure.

Hebrew, too, uses physical gestures and attitudes to describe psychological states. שים פנים ל (*sīm panīm l*) to expect that (literally, to set the fact to), נפל פנים (*napāl panīm*) to be morose (sullen) (literally, the face falls), הקשה ערף (*hiqṣah ‘oreṗ*) to be stiff-necked (literally, to harden the neck); נלה אזן (*galah ‘ozen*) to uncover the ear (of someone), to communicate. Or an organ: אפים (*‘appajim*) “nostrils” for anger, רחם (*reḥem*) “womb” for “mercy,” יד הטה יד (*hittah jad*) to stretch out the hand for “to adopt a conciliatory attitude towards,” מעינים (*me ‘ēnajim*) from the eyes = behind the back, without someone’s knowledge עינים רמות (*‘ēnajim ramōt*) “lofty eyes” for “pride.” Some of the foregoing examples remind one forcibly that in method, we have not advanced a great deal further than the ancient Hebrews along the linguistic path. Not all terms for psychological states may have arisen in this way: some may have had their origin in a vanished pictographic script.

#### HEBREW AS A LITERARY MEDIUM.

Let us hesitate for a moment to examine our terminology before proceeding to discuss Hebrew as a medium of literary expression. We are all familiar with the use of the word literature in two main senses: literary productions as a whole, prose and poetry, irrespective of their merits; and in the narrow sense writings esteemed for beauty of form or emotional effect and possessing permanent value. But such a definition is not exhaustive: we are here using terms which in their turn demand elucidation. What constitutes beauty of form? Does it include that mysterious and elusive thing called style?

Those of us who have not mastered the mysteries of metaphysics and æsthetics, with their attendant philosophic problems, demand a simpler and less abstract definition. Literature distinguishes itself from other writings in that it may be read and re-read showing on each fresh perusal new facets and forms. As when we look on one of our great cathedrals we find the lines so ingeniously arranged that they present not one but numberless patterns. What Coleridge said of poetic style is valid here:

“Not the poem we read with the greatest pleasure but that to which we return with the greatest pleasure possesses the genuine power.” Writing is to literature what homeliness is to beauty, building to architecture, drawing to painting. Theoretically it would be possible in many a non-literary composition to replace the words by numbers of a pre-arranged code without detracting from its value; they are mere ciphers. Not so in literature: here words are organic units—the interdependent parts of an organism—every one of which is essential to the existence of the organism. Or again words in literature are as seeds, what they stand for is the plant, the soil determines the growth and the ultimate form. When we consider that words are the only denizens of the mind, “the only and exclusive subjects of the understanding,” and when we bear in mind that by far and away the greatest and most precious portion of the heritage of the past consists of written records, we shall not fail to value aright the place and rôle of the literary composition. We owe it not to papyrus or vellum, not to copper or stone that the literary compositions of Greece and Rome have proved imperishable; the literary form alone—the ointment and spice of the winding sheet—has saved from the ravages of age and decay the masterpieces that have come down to us.

If we turn now to an analysis of Hebrew style we shall find that the tangible characteristics, namely the figures of speech employed, throw some light on the secret of the beauty and power of these writings. Many of the figures with which we are familiar from our own literature are rare or even absent. Alliteration plays but a small part and rhyme, it would seem, is never used deliberately. This is not the time nor have we the space to set out a detailed discussion of the many figures of speech employed in Hebrew. It will be sufficient to make a closer scrutiny of the use of metaphor. For it is here, if at all, we shall find the key to the secret of the power of Hebrew literature.

Middleton Murry in his book on “Style” has said: “Metaphor is not an ornament. It is the result of the search for a precise epithet.” The origin of metaphor is probably to be sought in the simile. Simile and metaphor are often described as the expanded and contracted form of one and the same figure of speech. “Words that burn” would seem to have arisen from a condensing or short-circuiting of the simile “words that are like the burning of fire.” The Arab grammarians define metaphor as a simile without “like,” in other words an abbreviated form

of the simile. It consists of comparing, perhaps unconsciously, a phenomenon in the ideal sphere with one in the physical, possibly even an identification of the two phenomena. The metaphor consists of two parts, which have been called the vehicle and the tenor—the physical symbol and the ideal phenomenon.

The necessity for metaphor arises from our inability to describe an abstract idea. The relation of the vehicle, the physical phenomenon, and the tenor, the ideal phenomenon, is very much that of the actor to the *dramatis personae*. It is impossible to put the original character on the stage and so another is employed to represent him. It is the deputy, the delegate for the absent and unseen participant in the case. The histrionic comparison brings out the main points: there the actor is chosen because of his fitness for the part, or his ability to copy his prototype.

You will have noticed the difficulty that faces anyone taking on himself to define metaphor. In attempting to depict the brush used in producing the effects, he is of necessity compelled to use one and the same brush. And in the last analysis of course the question arises, is not the very texture of language metaphorical? There is a distinction between the name of the thing and the thing meant, the window and the view; a spade is not a spade any more than the Hamlet we see on the stage is Hamlet, Prince of Denmark. But this takes us far beyond our present destination. I have dwelt on it, for one charge brought against the Old Testament is that its language is metaphorical. But so is all language.

Let us confine ourselves to so-called living metaphors, of which the Hebrew of the Old Testament can show many striking examples. Phenomena of the inanimate world used for those of the inanimate: light for joy, darkness for death, sun for fortune, fire for destruction; the inanimate for those of the animate: the star for hero, rock for protector, lamp for giver of victory, floods for hostile hosts; animate and animate: lion for hero, wild ass for lawless one, sheep for peaceful people; the animate and inanimate—under this head can be grouped those expressions commonly referred to as anthropomorphic. The study of linguistics has taught us that anthropomorphic expressions are not peculiar to Hebrew. Symbolism of language has naturally an anthropomorphic character. Without the transference of human conditions to the external world we could

not make it comprehensible. A multitude of characteristics of inanimate objects are still named after parts of the human body: the legs of a chair, the foot of a mountain, the head of a bridge; a lever has arms, a ship a waist, a cave a mouth, a needle an eye; we may speak of the blood of the grape without being accused of Manichaeism. We even ascribe human actions to inanimate objects: the house faces the valley, the stone strikes the man, the grain promises to be good. We treat diseases as active beings: the fever attacks the patient, death snatches him away.

The original and existing was invariably the concrete, the physical, the perceptible. Symbolization and comparison are indispensable to human thinking. The similarity is not always found in the outward form. Sometimes it is in the function. Hebrew speaks of the mouth of the sword—that which bites. With us the form is usually decisive; pearl is a diminutive of pear; the cock has a comb; the flower has a cup. In fact everything is expressed in metaphors, even scientific language. When psychology states that the stimuli of the external world are conducted by the afferent nerves to the organ of the brain and there changed to impressions, it employs exclusively metaphors. Stimulus is the Latin for goad, nerve and organ Greek words for string and tool, impression nothing more than imprint.

Speech is a means of expression and feeling, and the unloosing of passions as well as an implement to make ourselves intelligible. The choice of similes and metaphors is influenced by national psychology and customs. Those of the Romans were taken largely from the state, the army, and agriculture; those of the Germans from war and the weapons of war, also from the chase; those of the Hebrews from the field, from the sheep-fold, the pottery and the forge. In the use of figures either by nature or by ingenuity the Hebrews selected symbols which were and have remained universal, and thus a symbolism that could be transferred without loss or diminution of effect into any language in any land.

In the time left to us we must speak, however briefly, of the beauty and characteristics of Hebrew prosody. Herder, the German philosopher, who spent a great deal of time on its study and who was the author of the statement that the Hebrew language was itself a poem, has some extravagant claims to make on its behalf. It has little in common with the classical models. Its chief characteristics are rhythm and parallelism.

A great deal of ink, mostly German ink, has been spilt on the subject of the origin of rhythm and the so-called *Arbeitsleid*, some of the scholars treating its appearance as a remarkable phenomenon to be explained. When we think of man and his environment, the rhythm in and around him, the waves of the sea, the ripples of the lake, the rhythmical nature of his primary occupations : the sowing of seed, the reaping of grain, the hammer blows on the anvil, the potter's wheel, the tramp of marching feet ; and in him : the beat of the heart and the varied rhythm of breathing, a great deal more ink would have flowed if rhythm had failed to appear in his literary composition. It was to breathing, probably, that the Hebrew, more anthropomorphic in his expression than other men, found the progenitor of rhythm. There is nothing fast and fixed in Hebrew rhythm, none of the mechanical measures so familiar to us. Its lines are as variable as the breath we draw. To the Hebrew poet the speaking of his work was as much his concern as the writing of it: For in his days writer and reader were often one, a fact we would know, even apart from the historical evidence, from the etymology of the Hebrew word for read, the primary meaning of which was "to call" later used for proclaiming and preaching, then as literacy was the prerogative of the professional scribes, reading was largely a public exercise, in little differing from that of preaching, and so to the already existing meanings of the word, "call" and "proclaim," was added another, namely "read." We are often enjoined by our teachers of style to read aloud what we write. The Hebrew writer had need of no such advice ; it was incumbent upon him to do so in the discharge of his professional duties. And thus for him ease of delivery, accommodation of his writing to breathing, must have been one of his primary considerations.

One of the most successful attempts to analyse the peculiarities of and to formulate a theory about Hebrew poetry was that of Bishop Lowth. His main thesis is that its predominant characteristic is parallelism. He enumerates three species : (1) synonymous parallelism—when the same sentiment is repeated in different but equivalent terms ; (2) antithetic parallelism, where sentiments are opposed to sentiments, words to words ; (3) synthetic or constructive parallelism in which the sentences by the form of construction answer to each other. The opening verse of the first Psalm is a good example of synthetic parallelism "Blessed is the man that walketh not in the counsel

of the ungodly, nor standeth in the way of sinners, nor sitteth in the seat of the scornful." Here there is no eddying but progression, admittedly downwards, of the idea. Walking becomes standing and standing ends in sitting. The contact at first is that of the fellow traveller, then that of the friend, then finally that of the associate. The company, too, deteriorates, the ungodly, that is the amoral; the sinners, that is the immoral; the scornful, that is the avowed enemies of morality—threefold and three-membered parallelism.

Some of the devices employed in Hebrew poetry may seem to modern minds primitive and inartistic. For instance, the 119th Psalm is in the form of an elaborate acrostic, the 22 stanzas consist of eight verses, each of which begins with the same letter of the alphabet and proceeds in this way right through the alphabet. To them it was a mnemonic aid justifiable as such and possibly no more distasteful to us than rhyme—primarily a mnemonic aid—would have been to them. Let us not forget that rhyme is comparatively young in our literature, Milton disapproved of it: "rhyme, the invention of a barbarous age to set off wretched matter, as the jingling sound of like endings, trivial to all judicious ears and no true musical delight."

The language of the Old Testament, whether considered in its ethnographic associations or in its geographic distribution, can lay but slender claim to the epithet "great." Language *qua* language it would seem destined to obscurity by its severe simplicity, and yet withal it has exerted and still exerts an influence, unrivalled linguistically and geographically by a Semitic, and for that matter by any language.

Not in Arabia, not in Athens, not even in Rome did Europe seek and find models in the most formative years of her literary development. But the literature of the petty state of Palestine became the guide and the ideal. If albeit the medium was Latin, the original of that Latin was Hebrew.

#### DISCUSSION.

The CHAIRMAN (Sir Frederic Kenyon) regretted that his place was not occupied by some Hebrew scholar who would have been able to discuss Dr. Martin's paper with adequate knowledge. For the ordinary English reader of the Bible the differences in Hebrew style and language in different books were disguised by the uniform

quality of the Authorised Version. The high literary quality of the A.V. had been of immeasurable advantage to the English-speaking nations, and had greatly contributed towards making Great Britain a Bible-reading country—a character now in serious danger. But the English reader would like to know how far the excellencies which he feels in the literary style of Isaiah and Job, for instance, truly reflected qualities in the original Hebrew.

He was unable to comment on Dr. Martin's paper, but on behalf of the meeting he desired to express their thanks for the instruction conveyed in it.

Group-Captain WISEMAN said : Dr. Martin's paper is that of an accomplished scholar. It contains suggestions which merit the attention of Old Testament scholars.

That the literature of the Old Testament has the quality of genius no one can reasonably doubt. There is, however, a difference of opinion as to the essential nature of that genius. I take it that Dr. Martin assigns it firstly to the language employed, then to the writers, and by no mean excludes a third answer. I suggest that while the language and the personality of the writers have contributed much to the genius of the Old Testament that which has contributed most, are the ideas and message that these men had to express. This is not to underrate the ability of the writers, as for instance in the superb hopefulness of Isaiah or the refined melancholy of Jeremiah. To-day, few imagine that the inspiration of the Old Testament necessitated the obliteration of the individuality of the writers. In moving men of old to write, the Spirit of God used the abilities these men possessed. Neither can we doubt that the Hebrew language was an instrument peculiarly suited for their purpose ; Dr. Martin's paper is a most valuable illustration of this. But neither the genius of the writers nor the language nor both combined could, I suggest, possibly produce the result we find in the Old Testament. There were probably men of greater literary ability who lived during the long period covered by this literature, and, as Dr. Martin has so well pointed out, Hebrew in itself is not an outstanding literary language. The essential nature of this genius must therefore be sought in something other than the writers and the language. Coleridge said that when words become peculiarly beautiful or sublime the thought which they express will be found



to be deep and original. I suggest that the depth and originality of the thought creates the essential genius of the Old Testament.

From a literary point of view, one of the outstanding elements of this genius is a parallelism in which the Hebrews repeated in the second line in somewhat similar words the thought which had been expressed in the first line. Psalm 8, vv. 3-6 is an illustration of this.

When I consider the heavens, the work of thy fingers, the moon and the stars, which thou has ordained ;

What is man, that thou art mindful of him ? and the son of man, that thou visitest him ?

For thou hast made him a little lower than the angels, and hast crowned him with glory and honour.

Thou madest him to have dominion over the works of thy hands ; thou hast put all things under his feet.

Sometimes the reverse idea is expressed in the second line as in Proverbs 10, vv. 1-3.

A wise son maketh a glad father : but a foolish son is the heaviness of his mother.

Treasures of wickedness profit nothing : but righteousness delivereth from death.

The Lord will not suffer the soul of the righteous to famish : but he casteth away the substance of the wicked.

There is a swing like a pendulum, an ebb and flow in thought like a wave. The poetic element of the Old Testament is in the metre, not in the rhyme as it is in Greek and Latin literature. Lines commencing with each of the letters of the alphabet are not infrequent as may be seen in Psalms 25, 34, 91, 92, 145, and eight fold in Psalm 119.

In passing it is worth noticing that modern physiological science has attested the use of the kidneys (see page 200) as having a connection with the emotions. The adrenal gland on the kidneys constricts certain blood vessels and is the cause of paleness during some emotions. It is the gland associated with indignation, fear and fright.

The genius of the Old Testament writing is never that of mere embroidery or prettiness of words, it is to be found in its elevated thought. It is the *theme* that creates the essential genius of these

writings. These Hebrew writers were always conscious of God, and they wrote about God's revelation of Himself to man.

#### WRITTEN COMMUNICATIONS.

Professor EDWARD ROBERTSON wrote : Dr. Martin's paper is full of interest and stimulates thought on the nature of the Hebrew language. It is a very worthy contribution to a full understanding of the subject. If I venture to comment on a point or two it is with no desire to detract from it, but must be taken rather as an earnest of the interest it awakens.

I do not feel quite sure that Dr. Martin has phrased the title of his paper rigidly enough to cover its implications. The paper is concerned more with the genius of the Hebrew mind in the use of a language, far from adequate for its full expression, than with the genius of the language *quâ* language. There is much to admire in the Hebrew language, but it must be admitted that it has serious defects. Amongst these are its defective time-sense, shown in the limitation of tenses to two, the limited number of adjectives, the inadequate stock of particles. Whilst the overworking of the conjunction (*waw*) may give to Hebrew an old-world dignity of phrasing, the dignity is offset by the lack of precision in thought expression. The consequent ambiguities in interpretation are often irritating, and are sometimes serious.

There is one other point. Dr. Martin draws attention to Hebrew as an example of a language losing its case endings, and cites Persian and English as other instances. In both the latter the imposition of a foreign tongue is suggested as a possible explanation, hinting at a similar explanation for Hebrew. This seems to me most likely. The belief is gaining ground that the Hebrews were an Armenoid people and Hebrew was probably the result of their impact on Semitic-speaking Canaan. Hebrew gives the impression that it was far developed as a spoken language before it was employed as a literary. An analogous case would be if classical Arabic literature had not been, and modern colloquial Arabic was suddenly called on to become, the language of literature.

Mr. E. B. W. CHAPPELOW, F.R.A.S., F.R.S.A., wrote : Having no claims whatever to Hebrew scholarship, I cannot comment on

Dr. Martin's paper beyond saying how much it interested me. All I can do is to suggest a possible line of enquiry which those interested may pursue, and that is the similarity in style and in some cases in diction between the Biblical record and the historical inscriptions of the great Kings of Assyria.

Unfortunately, the war situation has largely divorced me from my books, so that I can only quote a very few examples and some of those only from memory, but those who desire to pursue the matter further will find ample material in Luckenbill's "Annals of the Kings of Assyria" and Leroy Waterman's "Assyrian Royal Letters," an annotated transliteration and translation of Harper's great edition of Babylonian Letters, both of which should be obtainable from Dr. Williams' Library or through any local Public Library from the Central Library for Students. Waterman's volumes will furnish evidence from Babylonian and Assyrian proper names and Luckenbill's from architectural and military phrases.

Thus to parallel the Biblical account of the Tower of Babel, which is now known to be the Zikkurat or stage-tower, E-temen-an-ki, "The House of the Foundation of Heaven and Earth," of Ê-Sagila, the great temple of Bêl-Marduk at Babylon, which Herodotus described, Tiglathpileser I. (c. B.C. 1110) in the Prism Inscription, Col. VII, in describing his restoration of the Anu-Adad temple at Aššur says that he "reared its temple towers to heaven." Sennacherib, describing his work at Nineveh, says that he erected "a palace of ivory" (*ekal šin piri* lit "a palace of elephant tooth"), coinciding exactly with the "ivory palaces" of Scripture. This does not imply a palace constructed in ivory but one adorned with carved ivory plaques, such as Layard found at Nineveh, and such as have since been discovered in the ruins of Ahab's palace at Samaria.

"Thou shalt break them in pieces like a potter's vessel" is exactly paralleled by the Assyrian kings who say that they "broke (so and so) in pieces like a potter's vessel." "Smote with the sword" is the common Assyrian phrase, *ina kakki ušamkit*, "with my sword (lit. "weapon") I laid (so and so) low," often followed by *ultu âlu* or *mâtu X ana âlu* or *mâtu Y*, i.e. "from the city or land of X even unto the city or land of Y," (cf. "from Dan to Beersheba").

The kings also invariably "go up" to a hostile city, which is understandable from the fact that the "fenced" or "strong cities"

(*alāni dannāti*) were on a natural eminence or artificial fortified mound or at least the citadels, which were all that mattered, were. The pastoral simile also appears. Thus Sargon states (campaign of 720 B.C.) that Šabi, Biblical So, King of Egypt, or general of Pharaoh, fled into the desert "like a shepherd whose sheep have been taken."

Finally there is the oriental custom of tearing the clothes under the stress of great emotion. Thus Esarhaddon in the 1927 Prism says that when he heard of the evil doings of his brothers (the war for the succession in Nineveh after Sennacherib's murder), "'Alas,' I cried, 'and my princely robe I tore.'"

I have only, for the reasons stated above, been able to throw out a few suggestions and point out the way to a promising field of enquiry.

Rev. Principal H. S. CURR wrote: Dr. Martin is to be congratulated on his exposition of a subject which presupposes a measure of specialised knowledge. To one who is totally unacquainted with Hebrew the points which he makes must be quite intelligible, although some degree of familiarity with that language would invest them with a greater range of meaning and significance. I am sure that every reader of the paper will be impressed with the unique character of the tongue which is associated with the name of a unique people.

The greatness of Hebrew lies in the fact that it is the supreme vehicle for the expressions of religious experience. Greek may be more suitable for religious theory as its use in the New Testament proves, but there is only one vehicle of expression in which the Psalter could have been written and that was Hebrew. Languages have their peculiar genius. To illustrate the point from the three used for the inscription on Our Saviour's Cross, Greek is the finest instrument for the conveyance of abstract thought. Latin is supreme in the realm of law and government, while Hebrew, as has just been observed, is pre-eminently the mother-tongue of religion. In that connection, it is of interest to recall that Our Lord spoke and taught in Aramaic, as the brief quotations in the Four Gospels prove (Mark 5, 41; 7, 34). As a literary medium, Aramaic is far inferior to Hebrew, and yet Our Lord did not disdain to use it. He is always doing His perfect work with imperfect instruments, and providing treasures in earthen vessels.

There is one characteristic of Hebrew which is always worthy of special mention. I refer to the fact that it is predominantly a language of verbs. The verb is the basis of its vocabulary. As the paper reminds us, the Hebrew verb is rich in modifications whereby different shades of meaning can be conveyed. That statement can easily be tested by opening the Old Testament at random, even in the English Versions, and reading a few verses with this thought in mind. The attention will at once be arrested by the abundance of verbs, and the absence of adjectives. That harmonizes well with the practical genius of the Jew. He is first and foremost a man who does things himself, and gets them done, as his success in business proves. Dr. Martin quotes the Oriental proverb "Speak, and you are," and it is exemplified by the Hebrew tongue, the language of a nation who have ever excelled rather as doers than thinkers, or dreamers.

A brief reference may be made to the amazing conciseness of Hebrew, as a comparison of Psalm 119, or the Book of Proverbs in the original with the English rendering, will show. What we need a dozen words to express in English, Hebrew can convey in half that number.

Dr. J. B. ANDERSON wrote: The author of this paper makes it certain that he regards the first 23 verses of the book, of which Moses was amanuensis (Ezra vii, 6), as romance or fiction. I understand Moses to have had a similar disbelief in them—when Abraham was told to slay his only son, he was interrupted in the very act of doing so. For, as stated in Hebrews xi, 19, "he calculated that God could raise him out of the dead," even though God had not specifically said he would do so. Moses took no similar risk, when ordered to speak to the rock. Yet he was specifically informed that by doing so he would bring water out of the rock. Num. xx, 8—see verse 12.

I understand I Samuel xi, 9, to have been inserted for the definite purpose of making it certain, that the change by the people, of one word for another, was of human, not divine origin.

The Hebrew vowel points I have no use for. Because I incline to the belief, that up to the obliteration of the Temple, that language was there pronounced as it was by Abraham in his youth; a pronunciation now known. But if there was a change, that change must have been of human origin. (See King's work on the Assyrian Cuneiform language.)

*SOME ARGUMENTS AGAINST THE HYPOTHESIS OF  
HUMAN EVOLUTION FROM ANY ANIMAL  
SPECIES.*

By SIR AMBROSE FLEMING, M.A., D.Sc., F.R.S.

THE hypothesis that the human race has arisen by evolution from some animal species, though accepted as true by very many present-day naturalists, is not sufficiently supported by ascertained facts or strict scientific proof.

On the other hand there are certain valid arguments against it, some of which are considered in this short paper. Those who accept the above-mentioned hypothesis differ in their views as to the exact course of this evolution. There are two main groups of adherents : (i) Some think that this human evolution originated with some species of anthropoid ape, akin to that called *Dryopithecus*, whilst (ii) others assert that no ape species stands in the line of development of Man but that his true ancestor was a form of primitive mammal.

One point on which all evolutionists are agreed is that this evolution of Man must have taken a vast period of time from its initial stage of animal to that of the emergence of the true *homo sapiens*. In his address as President of the British Association at Leeds in 1927 Sir Arthur Keith puts that transformation period at about "a million years on a modest scale of reckoning."\* The evolutionists have not, however, followed out to its necessary consequences their large draft on the Bank of Time in this assumption of a vast period taken for granted as essential for the transformation of some form of animal into that of true Man. Meanwhile there are several important questions to which no clear answer has yet been given, viz. :—

- (1) What was the effective driving cause of this evolutionary transformation of animal to Man ?
- (2) Why has that process apparently come to an end ?  
There does not seem to be any continuance of it at the present time.

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\* The text of this Address by Sir Arthur Keith is given in a small book by him called "Concerning Man's Origin," published by Watts & Co., Fleet Street, London.

- (3) Was that evolution carried out by a small or very large group of animal forms changing simultaneously? It would seem to be necessary for a large number to take part in it, because a species small in number has a restricted area of operation and hence is liable to be exterminated by any large-scale catastrophe such as flood, drought, causing failure of food supply, or by sudden increase in predaceous animal foes.

Even if such danger does not quite exterminate the evolving animals it may greatly reduce their number and hence check the evolutionary process or stop it altogether.

At this point then it is necessary to discuss the law according to which population of animal or man increases with time in the absence of special catastrophic events, such as those just named, which may even cause a large sudden decrease of population.

If  $p$  denotes the population, animal or man, at any time and place and  $P$  the increased population  $n$  years later then if  $p$  increases by  $\frac{1^{\text{th}}}{r}$  part in a year, at the end of 1 year it would have become  $p(1+r)$ , and at the end of two years it would be  $p(1+r)^2$  and at the end of  $n$  years it would be  $P = p(1+r)^n$ . Taking ordinary logarithms of both sides we have

$$\log P = \log p + n \log (1+r).$$

If the population doubles in  $N$  years then from the above equation we have

$$\log 2 = N \log (1+r)$$

or

$$\log (1+r) = \frac{1}{N} \log 2 = \frac{1}{N} \frac{3}{10}$$

since  $\log 2 = 0.30103$ . Hence we can write the first equation in the final form

$$\log P = \log p + \frac{n}{N} \frac{3}{10}.$$

This last equation enables us to find the value of  $P$  when the values of  $n$ ,  $N$  and  $p$  are given. Thus, if we start with a single couple, one of each sex, we have  $p = 2$  and if the average time of doubling ( $= N$ ) is 200 years, we can see that after a period of 6000 years ( $= n$ ) the final population  $P$  will be such that

$$\log P = 0.3 + \frac{6000}{200} \frac{3}{10} = 9.3.$$

But 9.3 is the logarithm of 2000 million. The average time in which the world population of mankind doubles is dependent amongst other things on the causes which act to preserve or destroy human life. These destructive causes have no doubt been much greater in the past than at present, when of recent years it appears to be doubling in about 100 years or less. Also catastrophic events such as plagues have had a serious effect in the past. Thus during the Black Death plague in 1349 A.D. the population of England fell to half, in a few months. On the other hand our modern medical and surgical skill as well as improved sanitation and infant care, have abnormally decreased the time of doubling, but perhaps leaving the average period over all historic time still moderate in amount.

Returning then to our evolution problem it will be seen that if we assume (with Sir Arthur Keith) a very large time, say a million years, for the time of evolution of animal to man, and if during that time the slowly transforming animals increase in number by interbreeding, and also assume that the food required to keep the vast multitude alive is available, then according to the equation above given, the final population  $P$  will have reached an enormous number no matter what value, within reason, we take for the average time of doubling, even say as much as 10,000 years.

Thus, putting into our equation for  $\log P$  the values  $n = 1,000,000$  and  $N = 10,000$ , we have

$$\log \frac{P}{p} = \frac{10^6 \cdot 3}{10^4 \cdot 10} = 30 = \log 10^{30}.$$

But  $10^{30}$  is a gigantic number, viz., a billion times a billion times a million. There would not be standing room for such a number of animals on the earth. It is certain, however, that the gradually evolving animal to man population could never have reached the number just named, because long before the end of the supposed million years of transformation they would have been all starved for want of food. The growth of population is always controlled by food supply. Animals can only obtain such food as Nature supplies. Intelligent Man alone can multiply food by agriculture of cereals, fruit, and vegetables. Hence it will be seen that it is futile to assume a vast period of time for the slow evolution of man from animal without taking into account the correspondingly great increase in the number of evolving animals and obtaining certainty as regards the food supply required to keep them all alive during that time.



There is also another line of argument in addition. If we assume a vast period of evolutionary time and if during that time the gradually evolving group of animals are multiplying, and therefore also dying in due course, there ought to be a correspondingly large number of fossil remains of these partly transformed animals to man. Instead of this, exploration over a lengthy time has only given us a relatively small number of such fossil "missing links." Even if we add all the remains of Palæolithic and Neanderthal man to those mere fragments called Java, Heidelberg, Piltdown and Pekin "man" the discordance between the fossil remains and the immense number which must have existed when alive as a result of the long evolutionary or transformation period is very surprising. There is certainly an unsolved problem in this connection, viz., the paucity of the fossil remains of the partly evolved links between the animal and man.

It seems to point strongly to the erroneous assumption of a vast time necessary for that evolution and therefore to an error in the hypothesis itself. The consideration of the questions raised in this short paper should give the thoughtful reader reasons for hesitation in accepting as proved this widely propagated evolution hypothesis. Also it may show the great mistake made in allowing it to be taught to the young or expounded to the public as a demonstrated scientific truth.



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## PAPERS.

**T**HE Papers read before and eventually published by the Society are of two kinds:—

- 1.—Original contributions to knowledge.
- 2.—Essays on important questions of Philosophy and Science.

The Volume of Transactions accordingly contains under the first head Papers that have been either supplied by experts of acknowledged authority, or have been guaranteed by such experts as suitable to the publications of a learned Society.

In publishing Papers under the second head the Society does not commit itself to the opinions expressed by the authors.

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## MEETINGS.

**T**HE Meetings, of which due notice is given, are held at 1, Central Buildings, Westminster, S.W.1, at Half-past Four or Six o'clock in the afternoon, generally on the Second and Fourth Mondays of the Months from December to June inclusive.

The Library, Reading and Writing Room are open, for the use of the Members from ten till four (Saturdays till twelve).

*The Honorary Secretary will be glad to meet Fellows, Members or Associates at the Office by arrangement.*