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JOURNAL OF THE TRANSACTIONS
OF
THE VICTORIA INSTITUTE

VOL. L

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

GENERAL SECRETARY:
E. J. SEWELL.

LECTURE SECRETARY:
E. WALTER MAUNDER, F.R.A.S.

VOL. L.



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1918.

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HARRISON AND SONS, PRINTERS IN ORDINARY TO HIS MAJESTY,
ST. MARTIN'S LANE.

PREFACE.

THE fourth year of the Great War has brought into every department of life and activity difficulties upon which there is no need to enlarge. Reference is now made to them in order to point out that, in conditions which have meant disaster to many a society, the Victoria Institute has been enabled, not only to "carry on," but amply to justify its existence, by stimulating public discussion on problems of outstanding if not urgent importance.

Among other limitations of the time, those imposed upon travel have in some measure qualified the success of the lectures; but, nevertheless, papers have been read on living issues—scientific, philosophical, and religious. The circumstances of the time find reflection in the address on "Germanism," by Rev. Chancellor Lias, also in those on "The Church and the Army," by Rev. Canon Hannay,* and occasional allusions to the War are found in other papers, and the discussions thereon. A forward look of great practical significance, as affecting the Empire at large, is furnished by Professor Margoliouth's address on "The Future of Education."

Taken as a whole, the Essays included in this volume are valuable contributions to current thought; and when, on occasion, criticism may seem to fall short of constructive purpose, or investigation to lack conclusive results, then it will be found that discussion has yielded fruit to the manifest enrichment of the *Transactions* as now published. It is much to be regretted that, owing to the peculiar difficulties that at present attend printing and book-production, it has been necessary to reduce the discussions to a minimum.

* Given at the end of the volume. See Statement by Lecture Secretary on p. 179.

In anxious and changing times such as the present, many minds have been stirred to think of the supreme issues of life ; and while men are inquiring in regard to GOD and the revelation of His Will in Christ, there should be a great work for such an organisation as the Victoria Institute, whose members aim at placing before the world considered answers, not only to the questionings of thought, but also to the cavillings of unbelief.

This fiftieth volume of *Transactions* comes in a truly noble succession, and its contents may be confidently regarded as giving promise that the Institute will render timely and important service to the cause of Truth in the days of Reconstruction to which we look forward.

JAMES W. THIRTLE, *Editor*.

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VICTORIA INSTITUTE.

REPORT OF THE COUNCIL FOR THE YEAR 1917.

READ AT THE ANNUAL GENERAL MEETING, MARCH 18TH, 1918.

1. *Progress of the Institute.*

In presenting to the Victoria Institute the Forty-ninth Annual Report, the Council feel themselves called upon to renew and repeat their expression of thankfulness to God that, in all the strain and pressure of this third year of War, there has been no cessation or weakening of the work of the Institute. The number of meetings has been twelve, one more than last year; and whether the value and importance of the papers read be considered, or the interest shown in them, as tested by the attendance when they were read or the discussions which followed them, there has been no indication of decline.

This is the more remarkable, since it has been found by many Societies that the difficulties of transit, the darkened streets and the danger from air-raids, have rendered their meetings difficult or even impossible.

2. *Meetings.*

Twelve ordinary meetings were held during the year 1917. The papers read were:—

- “Christian Mysticism.” By the Very Rev. W. R. INGE, M.A., D.D.,
Dean of St. Paul’s.
- “Islam and Animism.” By the Rev. S. M. ZWEMER, M.A., D.D.
- “From World Dominion to Subjection; the Story of the Fall of
Babylon.” By T. G. PINCHES, LL.D., M.R.A.S., Lecturer in
Assyrian at University College, London.
- “The Conscience.” By Clement C. L. WEBB, M.A., Fellow of
Magdalen College, Oxford.

- “The Significance of the Geography of Palestine.” By General Sir CHARLES WARREN, G.C.M.G., F.R.S.
- “The Witness of Philology to the Truth of the Old Testament.” By the Rev. J. IVERACH MUNRO, M.A.
- “The Pre-requisites of a Christian Philosophy.” By the Rev. A. R. WHATELY, D.D.
- “The Emphasis of St. Luke.” By Lieut.-Colonel G. MACKINLAY.
- “The Relations between Science and Religion as affected by the Work of the last Fifty Years.” By the Very Rev. H. WACE, D.D., Dean of Canterbury.
- Annual Address: “The Distances of the Stars.” By Sir FRANK W. DYSON, M.A., F.R.S., Astronomer Royal.
- “Prehistoric Man: His Antiquity and Characteristics.” By WILLIAM DALE, Esq., F.S.A., F.G.S. (Illustrated by lantern slides.)
- “The Mosaic Origin of the Pentateuch.” By the Rev. A. H. FINN.

3. *The Journal of Transactions.*

The difficulties of the year in regard to paper and the work of printing and binding have been great, as everyone knows. It has not been possible to keep the size of the Journal down to the limits reached last year, and it was issued somewhat later than usual, viz., in the middle of December.

As the financial position created by the War calls for every possible economy in expenditure, the methods adopted last year for reducing the space required have been repeated and reinforced by the omission of the List of Members, Associates, etc.

4. *Council and Officers.*

The following is the List of the Council and Officers for the year 1917:—

President.

The Right Honourable the Earl of Halsbury, M.A., D.C.L., F.R.S.

Vice-Presidents.

Lieut.-Gen. Sir H. L. Geary, B.A., K.C.B.
 Rev. Canon R. B. Girdlestone, M.A.
 Very Rev. H. Wace, D.D., *Dean of Canterbury (Trustee)*.
 Rev. Prebendary H. E. Fox, M.A.
 Lieut.-Colonel G. Mackinlay.
 Sir Henry H. Howorth, K.C.I.E., D.C.L., F.R.S.

Honorary Correspondents.

Professor E. Naville, Ph.D. (<i>Geneva</i>).	His Excellency Herr Fridtjof Nansen, D.Sc.
Professor A. H. Sayce, D.D., LL.D.	Dr. Henry Woodward, F.R.S., F.G.S.
Professor Warren Upham, D.Sc.	

Honorary Auditors.

H. Lance Gray, Esq.

George Avenell, Esq.

Honorary Treasurer.

Arthur W. Sutton, Esq., J.P., F.L.S. (Trustee)

Honorary Secretaries.

E. W. Maunder, Esq., F.R.A.S.

E. J. Sewell, Esq.

Honorary Editor of the Journal.

J. W. Thirtle, Esq., LL.D.

*Council.**(In Order of Original Election.)*

Rev. Chancellor J. J. Lias, M.A.	E. J. Sewell, Esq.
Theo. G. Pinches, Esq., LL.D., M.R.A.S.	Lt.-Col. M. A. Alves, late R.E.
Rev. John Tuckwell, M.R.A.S.	Alfred William Oke, Esq., B.A., LL.M. (Trustee).
Arthur W. Sutton, Esq., F.L.S., J.P.	Rev. Professor D. S. Margoliouth, D.Litt.
Professor H. Langhorne Orchard, M.A., B.Sc.	R. W. Dibdin, Esq., F.R.G.S.
Rt. Rev. Bishop J. E. C. Welldon, M.A., D.D.	Joseph Graham, Esq.
Sydney T. Klein, Esq., F.L.S., F.R.A.S., M.R.I.	Rev. G. Harold Lancaster, M.A., F.R.A.S.
A. T. Schofield, Esq., M.D.	T. B. Bishop, Esq.
Rev. H. J. R. Marston, M.A.	H. Lance Gray, Esq.
Ven. Archdeacon Beresford Potter, M.A.	E. Walter Maunder, Esq., F.R.A.S.
J. W. Thirtle, Esq., LL.D., M.R.A.S.	

5. Election of Council and Officers.

In accordance with the rules the following members of the Council retire by rotation :—

Rev. John Tuckwell, M.R.A.S.
 Prof. H. Langhorne Orchard, M.A., B.Sc.
 Rt. Rev. Bishop J. E. C. Welldon, M.A., D.D.
 Sidney T. Klein, Esq., F.L.S., F.R.A.S., M.R.I.
 A. T. Schofield, Esq., M.D.
 Rev. H. J. R. Marston, M.A.
 Ven. Archdeacon Beresford Potter, M.A.

The following gentlemen offer themselves and are nominated by the Council for re-election :—

Prof. Langhorne Orchard, M.A., B.Sc.
 Rt. Rev. Bishop Welldon.
 Sidney T. Klein, Esq., F.L.S., F.R.A.S., M.R.I.
 A. T. Schofield, Esq., M.D.
 Rev. H. J. R. Marston, M.A.
 Ven. Archdeacon Beresford-Potter, M.A.

The Council also nominate the following gentleman for election on the Council :—

J. Clarke Dick, Esq., M.A.

6. *Secretaries.*

The duties of the office of Secretary have been discharged during the year by Mr. E. Walter Maunder, Lecture Secretary; Mr. E. J. Sewell, Secretary for General Purposes; and Dr. Thirtle, Editor of the Journal. This arrangement was carried out for the first time during 1917, and it has worked excellently, notwithstanding all the stress of war conditions. The Council heartily thank each of these honorary workers for their patient, skilful, and successful efforts on behalf of the Victoria Institute, and the more because each of them is responsible for the performance of other onerous duties.

It is with very deep regret that the Council have to report the resignation by Mr. Maunder, since last December, of the post of Lecture Secretary; his services to the Victoria Institute have been very great and of many kinds, and the Council are glad to report that he will continue to render valuable aid as a member of Council.

7. *Obituary.*

The Council regret to announce the death of Prof. E. Hull, M.A., LL.D., F.R.S., F.G.S., one of the Vice-Presidents (see *In Memoriam* notice), and of the following Members and Associates :—

The Rev. E. G. Ashwin, the Rev. F. H. Baring, Mrs. A. Bishop, the Rev. A. Carr, H. H. Chichester, Esq., the Rev. D. Churchward, W. Day, Esq., Mrs. E. L. Gardner, Gen. Halliday, Miss S. M. Nugent, the Rev. D. Rhodes, the Rev. J. Sharp, Archdeacon Sinclair, J. A. Strong, Esq., Bishop S. Thornton.

Five of these had been, for forty years or more, Members or Associates of the Institute, which will greatly miss their long-continued service and support.

8. *New Members and Associates.*

The following are the names of new Members and Associates elected during 1917 :—

MEMBERS.—J. G. Dale, Esq., Miss E. James, the Rev. E. T. Siddell-Jones; the Rev. W. D. Sykes.

ASSOCIATES.—The Rev. W. Q. Amer, E. A. Bowles, Esq., the Rev. J. W. Chappell, the Rev. H. G. Grey, A. K. Grimsdale, Esq., E. E. Grimwood, Esq., W. J. Horner, Esq., Miss C. Hussey, J. O. Kinnaman, Esq., the Rev.

E. Thomas Lea, A. Miller, Esq., Mrs. S. D. Nicholl, the Rev. Harry Oxland, Patrick Morgan, Esq., Mrs. Hayward Porter, C. Stuart Thorpe, Esq., the Rev. F. N. Carus-Wilson.

MISSIONARY ASSOCIATES. — The Rev. M. Nachim, Pastor A. McD. Redwood.

9. *Number of Members and Associates.*

The following statement shows the number of supporters of the Institute at the end of December, 1917 :—

Life Members	19
Annual Members.. .. .	71
Life Associates	59
Annual Associates	245
Missionary Associates	15
Library Associates	28
	<hr/>
Total	437
	<hr/>

showing a net decrease of 24, as compared with the total number of subscribers under the same headings reported in last year's return. There are also 81 names on the roll of Honorary Corresponding Members.

10. *Finance.*

In the cash statement appended to this Report, the totals, both of receipts and expenditure, are much below those of 1916. This is largely due to the fact that the receipts in 1916 were increased by the response to a Special Appeal for Donations, while the expenditure was swelled by the payment in that year of part of the printing and binding charges of 1915, as well as the whole of those of 1916.

The statement for 1917 shows a further small falling-off in the income from subscriptions and sales, which is entirely due to the financial strain produced by the War, which has compelled some of our supporters to discontinue their subscriptions. This has been met by the most rigid economy in expenses, which has resulted in a diminution of ordinary expenditure under most of the headings.

11. *Auditors.*

The Council desire to thank Messrs. Lance Gray and Avenell most cordially for their services as Auditors.

12. *Conclusion.*

The year 1917 has been one of very exceptional character. The mind and will of the country have been more and more directed to the sole object of the maintenance of our forces in the field, and the conduct of the War so as to obtain as its result a righteous and permanent peace. But, at the same time, the change in the attitude of the English people towards many of the questions which have in the past been allowed to divide them has been very great, and few can doubt that the future will bring with it still greater changes—political, social, and religious.

In the discussion and carrying out of these changes it is of vital importance that we should all learn to distinguish the things which can be shaken and removed from those which cannot be shaken and must remain. The establishment of this distinction in accordance with its guiding principles is the main object of the Victoria Institute, so that we may look forward to its influence and importance in the future as being not at all less than in the past. The Council trust this will prove to be the case, and that their friends and supporters will rally round them and enable them, under God, to bring so desirable a result to pass.

Signed on behalf of the Council,

HALSBURY.

CASH STATEMENT *for the year ending December 31st, 1917.*

RECEIPTS.				EXPENDITURE.					
				£	s.	d.	£	s.	d.
Cash Balance from 1916				0	16	9			
Subscriptions:—									
4 Members	1916 ..			8	8	0			
65 „	1917 ..			136	10	0			
3 „	1918 ..			6	6	0			
1 Associate	1913 ..			1	1	0			
2 Associates	1914 ..			2	2	0			
1 Associate	1915 ..			1	1	0			
13 Associates	1916 ..			13	13	0			
226 „	1917 ..			237	6	0			
2 „	1918 ..			2	2	0			
				408	9	0			
Sales				26	13	4			
Dividends				9	7	8			
Donations				5	1	6			
				£450	8	3			
							£450	8	3

There is a Capital sum of £500 2½ per cent. Consols, also the Capital of the Gunning Trust Fund, £508 Great India Peninsular Railway Stock.

GUNNING PRIZE FUND.

Balance from 1916.. .. .				£	s.	d.			
Jan. 6th, 1917, Dividend				26	16	5			
„ „ „ „ for July, 1916				5	14	4			
„ „ „ „				11	2	3			
July 3rd „				13	19	5			
				£57	12	5			
							£57	12	5

We have verified all the accounts and compared them with the books and vouchers and found them correct.

January 9th, 1918.

H. LANCE GRAY }
GEO. AVENELL } *Auditors.*

IN MEMORIAM : PROF. E. HULL, F.R.S.

By the death of Professor Edward Hull, on October 18th, 1917, the Victoria Institute loses a Life Member who during long years took a deep interest in its work. Having joined the Institute in 1888, he first served on the Council, then performed the duties of Secretary, and later on sustained the dignity of Vice-President. In all these positions, during a period of thirty years, he rendered splendid service; and the many papers which he read before the Institute—some on questions purely scientific, others on issues more definitely philosophic and spiritual—revealed the man who combined intellectual strength with the true faith of a Christian.

Professor Hull was born in Antrim, and educated at Trinity College, Dublin. In 1850 he was appointed to the Geological Survey of the United Kingdom; in 1867 he became District Surveyor in the Scottish Branch of the Survey; and two years later returned to the Sister Isle to undertake the duties of Director of the Geological Survey of Ireland. This last-named post he held till his retirement from official life, after a service of forty years. He was for a long period Professor of Geology in the Royal College of Science in Dublin, and in 1873 President of the Royal Geological Society of Ireland.

The Professor made important contributions to our knowledge of the geology of Palestine. He went to that country in 1883, under the auspices of the Palestine Exploration Fund, as leader of an expedition which included the future Lord Kitchener as one of its staff; the object of research being to report on the region of Mount Seir, Sinai, and Western Palestine. His papers read before the Members of the Victoria Institute were largely the fruit of this important part of his life-work.

After retiring from official life in 1891, Professor Hull settled in the Metropolis, but he remained as fully occupied as ever before, preparing memoirs of his varied researches, and writing books on related subjects. Taken as a whole, his books and papers exceeded 250 in number, and bear impressive witness to his achievements as a scientist of untiring industry. Many who were not privileged to meet him in that sphere rejoiced to know him as a man of high principle, ever ready, as he was highly competent, to show the bearing of scientific investigation upon the ways and Word of Almighty God. In this light he was specially known to the Members and Associates of the Victoria Institute, who will long lament the loss of a true friend and wise counsellor.

THE ANNUAL GENERAL MEETING

OF THE

VICTORIA INSTITUTE

WAS HELD IN COMMITTEE ROOM A, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, MARCH 18TH, 1918, AT
3.45 P.M.

Lieut.-Col. G. MACKINLAY, *Vice-President*, occupied the Chair, and the Minutes of the last Annual General Meeting, held on February 19th, 1917, were read and confirmed.

In the course of some opening remarks, the Chairman briefly reviewed the progress made during the year. Notwithstanding the stress of war conditions, the papers read had commanded widespread interest, and the attendance of supporters and the public had been encouraging. He attributed much of the success attained to the devotion of the honorary officers of the Institute.

Mr. H. P. RUDD moved a resolution in the following terms :—

That the Report and Statement of Accounts for the year 1917, herewith submitted, be adopted, and that the thanks of the meeting be tendered to the Council, officers, and auditors for the efficient manner in which they have carried on the affairs of the Institute during the past year.

The motion was seconded by Mr. J. C. DICK, and the resolution was carried *nem. con.*

Mr. J. NORMAN HOLMES moved, and Mr. T. B. BISHOP seconded :—

That the honorary officers named in the Report, and the retiring Members of Council, nominated by the Council for re-election, be elected, and that Mr. J. Clarke Dick be elected a Member of Council.

The resolution was carried unanimously.

It was moved by Mr. T. B. BISHOP, and seconded by Colonel ALVES :—

That H. Lance Gray, Esq., and George Avenell, Esq., be appointed honorary auditors for the year 1918.

The resolution was carried unanimously.

It was proposed by Colonel ALVES, and seconded by Mr. E. WALTER MAUNDER :—

That the cordial thanks of this meeting be given to the Vice-President, Colonel Mackinlay, for presiding on this occasion.

The resolution was carried with acclamation.

Thereafter, in some personal remarks, Rev. JOHN TUCKWELL explained his reasons for not offering himself for re-election on the Council. Dr. SCHOFIELD and Prebendary FOX took part in the proceedings, as did also Colonel MACKINLAY and Mr. MAUNDER.

No resolution was proposed, and the meeting closed when time had been called for the ordinary session.

594TH ORDINARY GENERAL MEETING,
HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, DECEMBER 3RD, 1917,
AT 4.30 P.M.

ALFRED WILLIAM OKE, ESQ., B.A., LL.M., TOOK THE CHAIR.

The Minutes of the Meeting held on Monday, June 18th, 1917, were read and confirmed.

The SECRETARY announced the election of the following Associates:—
Rev. W. Q. Amer, L.Th.; Rev. H. G. Grey, M.A.; and Rev. J. W. Chappell; also Rev. M. Nachim and Pastor A. McD. Redwood as Missionary Associates.

The CHAIRMAN introduced William Dale, Esq., F.S.A., F.G.S., of Southampton, for many years a student of prehistoric archæology, and highly esteemed for his scientific researches.

PREHISTORIC MAN: HIS ANTIQUITY AND CHARACTERISTICS. By WILLIAM DALE, Esq., F.S.A., F.G.S.

THE study of the ancestry of our race, and the conditions under which prehistoric man lived, are subjects largely to the front with thinking people to-day. It concerns us all to keep abreast with the discoveries which are constantly reported to us, which confirm man's great antiquity, and to attempt to follow the researches of those who announce novel theories respecting the descent of man, and how he became specialized. A devout believer in Revelation and of an all-creating God should not shrink from these statements, nor deem them unworthy of his examination, although the manner in which such theories are stated, and startling conclusions drawn from them, may be purely scientific and materialistic. Even if Science and Religion were at enmity, we should have to bear in mind Wellington's saying that the great mistake in warfare is to undervalue your enemies. Much harm has been done in the past by well-meaning people who have dogmatically denied that with which they were very imperfectly acquainted. But according to a late utterance from the Chair

at the British Association, theological controversy is practically in abeyance. Sir Oliver Lodge says : " At any rate the major conflict is suspended : the forts behind which the enemy has retreated do not invite attack ; the territory now occupied by him is little more than his legitimate province. It is the scientific allies now who are waging a more or less invigorating conflict among themselves, with Philosophers joining in. Meanwhile the ancient foe is biding his time, and hoping that from the struggle something will emerge of benefit to himself."

In no branch of science is it more true that a conflict is raging than in those researches which have to do with prehistoric man. Many of these conflicting opinions I shall have to refer to, and it will be my aim to lead you to make your own reasonable deductions from them. I fear some of the statements of our leading scientists will come with somewhat of a shock, based as they are upon the doctrine of Evolution in its wider sense. Nevertheless it is our duty to become acquainted with them, and we may bear in mind the words of the Bishop of Birmingham, preaching to the British Association, in September, 1913 : " Whatever religious teachers may have felt as to what is commonly styled Evolution fifty years ago, I venture to say that to-day there is no one who is not thankful, for the great Creator's sake, that the intertwining of His creatures has been accepted on scientific knowledge."

I wish firstly to refer to some of the evidences of man's great antiquity ;

Secondly, to show how, according to some of our greatest scientists, the form of man was evolved ;

Lastly, we will endeavour to show that even if we accept the most advanced views on these points, it in no way necessitates the abandonment of our belief in Revelation, nor in those great spiritual truths concerning man's position and destiny so dear to all who believe that it was God the Creator Who made man in His own image and likeness and breathed into his nostrils the breath of life, and man became a living soul.

You are all familiar with the fact that much of the evidence of man's antiquity is derived from the implements which he fashioned, with which he hunted and with which he defended himself. The actual remains of man himself, which can authentically be referred to the Older Stone Age, are but few, and will be noticed presently. But from the time when, more than half a century ago, attention was first called to the chipped flint imple-

ments of the gravels of France until the present day, collectors and observers have gone on multiplying, until no museum is without a series of these objects, and numbers are in the hands of private collectors. That these finished tools were the work of men, no one at present denies, although it is worth while to recall that in the early days of the Victoria Institute a paper was read attributing their form to natural causes. It is to be regretted that the pendulum has even swung too far in the opposite direction. Observers from other branches of research have entered the field, who have not sufficiently studied the curious shapes which flints assume naturally, when formed at first in the chalk, nor the forms which accidental breaking and crushing have produced before they were laid to rest in a gravel bed. So we are told to believe in "rostr-carinate" forms; flints, broken by "pre-crag man" and "eoliths," all of which are said to be evidences of man's enormous antiquity, and to carry him back to a period long anterior to the Pleistocene times, where experienced and cautious observers first find him. I have seen and examined a large number of these so-called early evidences of man's handiwork, and after an experience of more than thirty years in handling flints I am at present unable to see in the breakages anything that could not be produced by natural causes. Nor is there in them those unmistakable marks of design which are so characteristic of the true Paleolithic implement. Exaggerated statements concerning man's antiquity should, therefore, be received with caution, although we must concede that he has had an existence thousands of years beyond the historic period. Even Egyptology has taught us to disregard our ancient systems of chronology. The date of the first dynasty in that country is almost universally accepted, and there was a pre-dynastic Egypt whose remains are undoubtedly sixty centuries old. At this remote period its negroid characteristics were as strongly differentiated as they are now. In actual figures no one cares to express the time that has elapsed since man's handiwork was deposited in the Pleistocene gravels. But geological science teaches us to observe how slowly Nature carries on her physical changes, and tells us that long periods of time must be allowed for the scooping out of the valleys connected with our present river systems, and for the deposition of the thick gravel beds and terraces in which the implements lie. Moreover, evidence is accumulating from a study of the caves and rock shelters in which early man lived. The rude drawings and carvings he has left behind, fresh specimens

of which are continually being discovered, prove that he lived with a fauna which has now passed away, and under conditions of climate different from those which now obtain in the locality—facts confirmed by the mammalian remains which are sometimes found in true association with human handiwork in the Pleistocene gravels.

I have incidentally referred to the theory of pre-crag man. The evidence for the existence of such is based solely on roughly-broken flints which carry with them no conviction in the eyes of many. To admit that man existed in Pliocene times is to date him back far across the dial-plate of geological time, and only the student of geology can realise how much that means. In leaving this part of my subject I should mention that several leading archæologists have now come to the conclusion that the gap which was long supposed to separate the Older Stone Age from the newer did not exist, but that each melted into the other, and that human progress has not been seriously interrupted since man first began to chip flint. Flints found in the surface soil, which a short time back were unhesitatingly called Neolithic and said to date from a period only just anterior to the Age of Bronze in Britain, are now considered to be similar to forms found abroad and ascribed to the late Paleolithic Age. The abolition of the hiatus between the Older and Newer Ages of stone seems to do away with the necessity for some of the great physical changes for which long time was demanded, and its tendency is to shorten the periods in question and to bring Paleolithic man nearer to us. So the theory proves a corrective to the views of those who take us back far into the mists of geologic time.

I have next to speak of some of the theories concerning the descent of man, and to refer to the few skeletal remains of him which are known, and which can be safely placed in the Paleolithic Age. The theories, which I will attempt to summarize very briefly, are all based upon the doctrine of the evolution of man from the ape. Professor Sollas, writing in 1910, refers to the fact that Darwin omitted all reference to man because the question was beset with prejudice, but now he says Evolution has become an orthodox dogma, respectable beyond reproach. Our cousinship with the apes, more or less remote, is acknowledged without shame on our part, and let us hope without reason for shame on theirs. I need not trouble you with any theory of the earlier stages of the development of the manlike apes from a more primitive ancestry. The mazes of speculation on this head are

great and diverse, especially among our foreign friends. After stating some of these views, Sollas wisely says: "The crowd of primitive ancestors which are beginning to inhabit the world of thought are logical abstractions which may never have enjoyed any real existence in the flesh." He also points out that the phenomenon of regression has not been sufficiently considered in forming these hypotheses. Our study of extinct forms of life has taught us, especially among the invertebrates, that some species will reach a certain stage of development, like the *Ammonites*, and then return to the more simple forms of their ancestors and finally disappear. The skull of the Neanderthal man, with its high superciliary ridges and its retreating ape-like forehead, was long regarded as a missing link, and a creature from which we are descended. Now it is universally accepted that Neanderthal man was only one of the lines of divergence from the apes—a line which died out, and is not admitted to have a place in man's genealogical tree. Professor Carveth Read tells us all the prominent characters that distinguish man from the anthropoids are the result of his having shown a special likeness for animal food; and he proceeds to show that this brought about life on the ground beyond the limits of the forest, the erect gait, the lengthening of the legs and specialization of the feet, the shortening of the arms and development of the hands, with other structural changes.

Another writer, Dr. Robinson, lays great weight on the development of the chin, not merely for its æsthetic value, but because of its relation to the faculty of articulate speech which differentiates man from the anthropoids. Concerning this, Dr. Elliot Smith considers that the development of the lower jaw had no relation to speech, but that this faculty was brought about entirely by the development of the brain, so that when man had anything to say he had the equipment for saying it.

This development of the brain, Dr. Elliot Smith considers—and there is no higher authority than he—was the determining factor in man's specialization. He does not look upon the Orang, the Chimpanzee and the Gorilla as ancestral forms of man, but as the more unenterprising members of man's family, who were not able to maintain the high level of cerebral development, but saved themselves from extinction by the acquisition of greater strength and a certain degree of specialization of structure. The assumption of the erect attitude and the faculty of speech, of which some make so much, was subordinate to the growth of the brain;

and in a long and powerful argument, which only an anatomist can really appreciate, it is shown how the development of those areas of the brain connected with tactile, visual, and acoustic impressions, and the storing of them in the chambers of memory, brought about the human brain, and all those changes in man's form which have differentiated him from some of the primates from which he has sprung.

Professor Sollas, who is a believer in the assumption of the erect attitude as the prime factor in man's differentiation, concludes the address from which I have already quoted, in these words : "How little we really know concerning the true course of human evolution is impressed upon us by the paucity of the evidence which we are able to adduce directly bearing on such speculations as we have considered." He then gives a quotation which, although the words of Huxley, are worthy of a divine : "Man alone possesses the marvellous endowment of intelligible and rational speech, whereby he has slowly accumulated and organized the experience which is almost wholly lost with the cessation of life in other animals, so that now he stands raised upon it as on a mountain-top, far above the level of his humbler fellows, and transfigured from his grosser nature by reflecting here and there a ray from the infinite source of truth."

In dealing with the few skeletal remains of man which we are sure belong to a period anterior to the Neolithic Age, we are in the more sober region of facts. Sir John Evans recognised only two divisions of the Paleolithic period—the river drift and cave periods. Led by French investigators, six are now widely recognized, which in the sequence of their age are the Chellean, Acheulean, Mousterian, Aurignacian, Solutrian, and Magdalenian. The evidence of the sequence of these periods rests largely upon the character of the implements which are assigned to them. All English archæologists do not, however, at present accept these divisions, because in English gravel beds the various forms of implements are so often found mixed together, that no stratification is possible. Human remains have long been known from the Magdalenian period. They give evidence of the existence of two contemporary races. The Cro-Magnon race, a tall people of a Mongolian type, and a race of short people like the modern Eskimo. It is an extraordinary fact that both races were of great cranial capacity, and endowed with larger brains than the average of any existing civilized people. In the Solutrian Age a race of men existed whose remains have been discovered on

Mentone, who did rude carving and mural paintings. The skulls are said to resemble those of the Bushman or Hottentot, but here again the cranial capacity is larger than that of any existing Negro race. Coming to the next older stage, the Mousterian, we are in possession of more numerous remains, and to it the Neanderthal skull belongs. From this material we learn that Mousterian man was short in stature, with a disproportionately large head and a face strangely unlike that of any human race with which we are familiar. A retreating forehead rises out of a bold depression above the massive eye-brow ridges. The orbits are large and round, and the massive lower jaw without a chin. In spite of the ape-like form of the head, the cranial capacity is not small, but even larger than that of the Australian aboriginal, who approaches most nearly to Neanderthal man in form. Neanderthal man is now, however, relegated to the back-water of the stream of human progression, and regarded, as I have said, as an instance of regression. Mousterian man is credited with having reached a certain stage in the evolution of religious ideas. The remains found had evidently been interred in a kind of tomb; weapons were buried with them, and in one case the leg of a bison placed beside, to provide food for the departed spirit.

Up to quite a recent period Mousterian man was the oldest known. The Heidelberg jaw, however, discovered in 1909, in association with remains of *Elephas antiquus*, is said to date back to the oldest, or Chellean period. The dentition of this jaw is human. The canine does not appear to have projected beyond the general level. More simian characters may be observed in the dentition of existing wild races, but the jaw itself offers a striking contrast to the dentition. It is massive, and the chin is entirely absent, the profile retreating in gentle curves as in the chimpanzee or gorilla. The genio-glossal spines are entirely absent in the apes. With the muscle of the same name these structures are connected with the power of speech, but their absence does not prove the inability to talk, as the jaw of the Bushman does not possess them. No remains of the skull were found, but from the fact that the Mousterian skull, though possessing simian characters, lodged a large human brain, it is fair to assume that such was the case with the Heidelberg man.

I speak lastly of the famous Piltdown skull, discovered in 1912, a relic of ancient man which has stirred the scientific world more, and aroused fiercer controversy, than any previous discovery of the same kind. The gravel in which the remains were found

contained flint implements of the Chellean period, and fossilized remains of the mastodon, hippopotamus, and other Pleistocene animals, all mineralized in the same way as the broken pieces of the cranium and portion of the lower jaw of a human being, which were recovered from the same deposit. All authorities agree, these are the oldest human remains which have yet come to light. In our scientific publications are technical and full descriptions of these Piltdown remains, and from the fragments obtained, Dr. Smith Woodward has made a complete restoration of the skull and jaws. Summarized briefly, the result is to give us a jaw remarkably like that of the ape, with a brain of lower cerebral capacity than that of other Paleolithic men, and with certain characteristics of a simian nature. There are, however, not the projecting brow ridges of the Neanderthal man, and the general shape of the brain-case resembles that of the young chimpanzee. Two of the molars are in place, and by the shape of what remains in the frontal portion of the ramus, it was evident that space was left for large canine teeth of ape-like character. So the restoration included large interlocking canines. This restoration was, however, called in question by Dr. Keith, of the Royal College of Surgeons, who made another model with a human jaw and a brain capacity fully that of modern individuals. This criticism led Dr. Woodward to make a fresh restoration of the brain-case, which he has submitted to Dr. Elliot Smith, the result being to give a brain capacity within the range of the smallest human brains of the present day. The restoration of the jaw was confirmed by the fortunate discovery in August 1913, after a re-examination of the gravel, of the actual canine tooth which was missing. It is abnormally large, and by the way it is worn, must have been interlocking. Piltdown man, therefore, was a creature with a jaw resembling that of an ape, yet with the brain of a man, although bearing some simian affinities even in this respect. But on the question of the brain, the last word has not yet been said.

The conclusion of the whole is, that man's existence has not yet been proved beyond the period known as the Pleistocene; that the earliest known man had certain skeletal characteristics, which seem to connect him with the apes; that no fossil primate is known earlier than Eocene times, and between that and the Pleistocene period no remains have been found of any creature to which the familiar expression "missing link" may be applied; and lastly that in all our discoveries, the brain, on which so much

depends, is large and fully developed, with the one single and doubtful exception of the Piltdown man.

And now, having arrived at a summary of what science has to say concerning man's origin, we have to ask if this contradicts Revelation, or does away with the Divine interposition in what we may still be allowed to call the Creation of Man. We do not, like Professor Schaefer, at Dundee, "relegate the early chapters of Genesis to their proper place in literature," by which is meant the place of fable or allegory. We admit their historicity. But since Geology and Paleontology have been our instructors, we find the words of that great theologian, the late R. W. Dale, of Birmingham, the best interpretation of them: "Here we have the story of the creation of all things presented in a form intelligible to the untaught men of every country and every age, and intended, not to anticipate the results of scientific investigation, but to convey important religious truths. A description, however brief, of the actual processes by which the Divine wisdom and power gradually brought into existence this material universe, with all the living things that have a home in it, would have occupied not a page but many volumes." May we not apply this principle to the story of the Creation of Man? However repugnant to us may be the doctrine of Evolution, we dare not deny it altogether, for the evidence in its favour accumulates day by day; and it is far better to face it boldly, and to read into it Divine wisdom and power, to say to science, as Socrates did to those who asked him concerning the disposal of his body, "Do anything you like with my body, so long as you do not suppose it to be me."

As we leave the anatomist and the scientist, who cannot tell us anything concerning the soul, the spirit of man, we enter those deep and unsearchable regions where science fails, and bow in faith before the statement that it was the Divine afflatus which made man a living soul. At some stage in the development of that wonderful brain of which we hear so much, there came to it those perceptions and that consciousness which belongs to the realm of religion, and of which the man of science takes no account.

"A sense of law and duty,
And a face upturned from the clod.
Some call it evolution;
But others call it God."

Through faith we understand that the worlds were formed by the hand of God, so that things which are seen were not made

of things which do appear. Through faith we understand that man was placed upon the topmost pinnacle of God's wonderful creation, and all things put under him. And there we leave the question. I cannot explain in any other way the new creation, the new birth, which is not only a truth of Revelation but an actual fact occurring in our very midst. The wind bloweth where it listeth, and we hear the sound thereof, but cannot tell whence it cometh and whither it goeth ; so is every one that is born of the Spirit. This mighty change which comes to a man is so real, that even the secular world and the daily newspaper cannot ignore it. Writing in 1906, concerning the work of the Salvation Army and on the word "Regeneration," *The Daily Mail* says :—"There is more miracle in that word than in all the pages of Scripture over which men of science and theologians quarrel and contend with a becoming amity and a dignified tedium. To take a man so sunken in infamy that his very mother has cast him off, and to make that man almost in the twinkling of an eye conscious of his immortality and joyful in the thought of God's clemency, this is a miracle before which science herself is silent, and this is what the Salvation Army is doing every day and hour of the day. It is the engine by which men are born again. It goes to the vilest, and makes them the purest."

The past history of man then, we deal with in the light of the faith we hold so dear ; and looking forward to the future we find also in the resurrection of his body and future destiny things which reason cannot grasp nor science analyse. For they that are in the graves shall hear the voice of the Son of Man, and they that hear shall live ; and then this complex, this wonderful body whose history we have tried to trace, shall be fashioned like unto His own glorious body, according to the mighty working, whereby He is able to subdue all things unto Himself.

WRITTEN COMMUNICATIONS.

The Rev. Canon R. B. GIRDLESTONE, M.A. : I am much interested in Mr. Dale's paper on "Prehistoric Man" : his date and his relation to apes, etc. There is a picture by the late Professor Owen, of Man—the Gorilla, which speaks for itself. We read *slow* progress into what may have been originally *rapid*, owing to the putting forth of special force. No reference is made by Mr. Dale to Alfred Russel Wallace's view, expressed in his *World of Life* (1910), and

written when he was 90, in which he steadily retraces his steps from a naturalistic to a Biblical view, *adaptation* and *variation* being signs of the Divine mind.

The Rev. Chancellor LIAS, M.A. :—I have very great pleasure in welcoming Mr. Dale's paper. There is no doubt that of late a large number of men of science have felt constrained to allow that the question whether the universe, and all things therein, be the work of a Divine Creator, is no longer a matter of serious controversy. They are of opinion that the laws He may have imposed upon Himself in the development of things material in this planet, and in the visible universe around it, are a proper subject for the intelligent beings He has placed on it to study. Mr. Dale has expressed condemnation of those who "have dogmatically denied that with which they were very imperfectly acquainted." It had been well for us had the Bishop of Oxford imitated the wise reserve of the writer of the paper. But a report of a speech by the Bishop (which appeared on the morning on which Mr. Dale's paper was read) does not display such a reserve. For although it may be quite lawful to speculate freely on the evolution of the stars, and on the mode by which the earth was prepared for man's appearance thereupon, it is not lawful to fling aside with contempt the great spiritual truths which the narrative of the first three chapters of Genesis contain. It is most rash to lay down, without careful explanation, that "we must purge" that narrative "from everything which gives the germinating intellect of man the excuse for saying 'this is a ridiculous old wives' fable.'" We have no right whatever to speak of anything that is found there in contemptuous language—still less to apply the terms "ridiculous old wives' fables" to the literal interpretation of those early truths, nor yet to the fact of a Fall of Man, which is a fundamental principle of all revealed religion.

Mr. Dale has told us, and no doubt told us truly, that none of the discoveries of "pre-Adamite man," as he is termed, can be said to have proved him to be the direct ancestor of the first man of whom we read in Scripture. But I will venture so far as to say that if pre-Adanite man could be proved to be, in a physical sense, the director ancestor of man as we know him, it need not make any difference to us. For the question whether there may have been men who, in a purely physical sense, were the direct progenitors of

“the man” (often translated Adam) does not touch the story of Genesis ii, iii, in any way. It does not follow that man had the same *mental* endowments as “the man” of whom Genesis ii, iii, speaks. And even if he had, though there might be some difficulty involved in the admission, we ought not to allow ourselves to forget that the qualities which “the man” spoken of as having fallen possessed, were moral and spiritual, not mental. “The man” of that narrative had the power of free will. He had the power, that is, of infringing the Law of Right and Wrong, which (no doubt, at first, in a very elementary form) was imposed upon him. Personally I feel it difficult to understand how he could be entrusted with the full intellectual powers necessary to enable him to make the moral distinctions required by the new powers conferred on him. This, however, might be left an open question. But it is quite impossible to concede the objections to the story of the Fall raised by those who hold that the Fall could not have occurred, on the ground that the being described in the story of the Fall was an *advance upon*, not a Fall from, the former position of man; and therefore would be a contradiction of the principle of Evolution. Ultimately, no doubt, the Creation of Man *was* an advance on his former position. But that conclusion could only be reached when “the Second Man, the Lord from Heaven,” had undone the work of the Fall, and had raised Humanity to a level from which it could attain the position assigned to it by St. Paul, of being “filled with all the fulness of God.” Before His coming, man, by reason of his higher responsibilities, was far more wicked in God’s sight than the animals.

As to the *literal* interpretation of the early chapters of Genesis, that is a question of interpretation, not of the supreme authority of Holy Scripture, as far as its message to man is concerned. One can hardly, for instance, imagine the Sacred Writer intended us to believe that the knowledge of good and evil could grow on a tree, and be plucked therefrom as one plucks fruit. Still less can one believe this, when the last book of the Bible speaks of the Tree of Life in similar terms, and no one, so far as I know, has ever proposed to interpret *that* passage literally.

I think the time has arrived when we may venture to lay down rather clearer principles on the interpretation of Holy Writ, and to make a definite distinction between the primary principles of

God's action in Creation, and the secondary questions as to the course He took in the Evolution of Phenomena, to reserve the former to the sphere of Faith and to require the men of science to keep within their proper lines, the observation and explanation of the evolutionary processes. And if we can secure for religious thinkers the right to abandon the letter for the spirit, when circumstances seem to call for it, we shall have made a very great advance in the rational interpretation of the Word of God.

DISCUSSION.

The CHAIRMAN : It gives me great pleasure to propose a hearty vote of thanks to Mr. Dale for his very interesting summary of facts regarding Prehistoric Man. I have watched with some care and amusement the question of the Piltdown skull, which some describe as the skull of a woman. If these interesting fragments had been brought before a jury for them to say Aye or Nay, did they all belong to the same skull, I think you will agree with me, if you look at them very carefully, that the question would be extremely difficult to decide. Coming from Sussex, I wish to protest against accepting as scientific evidence, such flimsy statements as appear to have been accepted on this subject.

Let me tell you that Mr. Dawson, a Coroner in Sussex, found one fragment of bone, which was submitted to Dr. Smith Woodward, and these gentlemen, assisted by others, went in search of other fragments which they expected to find. When it was known among geologists that they were on the search, a very interesting tooth was found, for which Dr. Smith Woodward immediately assigned a place. I ask, is that the method by which we are to carry out our investigations ? Are we to assume that fragments of bone, found at different times, extending over some months, or even longer, must necessarily have belonged to one particular individual, and that of the *genus homo* ?

I am glad to have some confirmation of the views which I myself take on this subject, for I have only to-day had the opportunity to read what I believe is the most important paper ever communicated on the subject, of which there are altogether a large number. The paper to which I allude is in the *Proceedings* of the Smithsonian Institute, and it is written by a man of standing, very high in the

scientific world, who I believe is almost a leading authority regarding the bones of the skull—Mr. Emmett. I hope that all who are interested in the subject will read that Paper, at the end of which is a bibliography. I have protested in Sussex, and my opinion is here confirmed, that the evidence has been insufficient to justify scientific men in giving to this collection of bones that primary position which has been assigned to them.

May I remind you that the Evolution doctrine is a theory? If you keep that point clearly before you, and then weigh the evidence for and against it, you may make some progress in investigation; but if you assume that it is absolutely proved, then I must bow my head and enter a protest. This is a very serious matter, because it leads many to undermine the authority of Divine Revelation. Therefore I suggest that, before permitting these bones to occupy the position which many give to them, we look for more bones and more implements.

Mr. T. B. BISHOP: I have pleasure in seconding the vote of thanks. I have read Mr. Dale's paper with great interest, because the theory of the evolution of Man has occupied me for some time, and I have in the press a book, *Evolution Criticised*, which deals rather fully with the different branches of the subject.

Professor Arthur Keith's recent book, *The Antiquity of Man*, gives details of all the discoveries that have been made, some sixty in number, of skulls and skeletons, and other relics of *prehistoric man*. In the great majority of cases the skulls are quite similar to those of men of modern type, but there are about sixteen cases in which the remains, chiefly those of the so-called Neanderthal race, are alleged to show ape-like characteristics.

Several of these latter have for a long time been looked upon as missing links between the anthropoid ape and modern man, but Professor Keith shows that the discoveries made during the last ten or fifteen years, largely of members of the Cro-Magnon race, prove that men of quite modern build lived so far back in the Pleistocene period that the Neanderthals and others could not possibly have been in their line of ancestry. Mr. Dale's paper quite confirms this.

Professor Keith now adopts another theory, and supposes that far away in the Miocene period a humanoid stem separated from the original animal stem, and that, later, in the

Pliocene, the Neanderthals and other races also became separated, so that we find in the Pleistocene, men who, so far as the bony framework of their bodies is concerned, are practically the same as modern man. Mr. Dale speaks in his paper of the burial rites of these prehistoric men, which show their belief in a future life. He speaks also of their artistic productions, which are, of course, remarkable. Dr. Astley contends that this artistic faculty could not have been evolved in a generation, and that the ancestors of the Cro-Magnons, going a good way back, must have been distinctly *men*.

The Piltdown skull, of which Mr. Dale speaks in the latter part of his paper, is very fully discussed by Dr. Keith, who says: "Piltdown man saw, heard, felt, thought, and dreamt much as we still do." There is a great controversy going on between Mr. G. S. Miller, of the United States National Museum, and Mr. Pycraft, of the Zoological Department of the British Museum, as to the *jaw* of the Piltdown man, Mr. Miller declaring that the jaw does not belong to the skull, but that it is the jaw of a chimpanzee.

Mr. Dale speaks of these remains as being recognised by all authorities as the oldest human remains. Professor Osborn, however, in *Men of the Old Stone Age*, contests their geological age. He says: "I have placed the Piltdown man in a comparatively recent stage of geologic time; an entirely opposite conclusion to that of Dr. Smith Woodward." In several cases of these prehistoric skulls, the geological age of the strata in which they were found is now questioned.

One difficulty, now that the Missing Link theory has failed, is to account for the disappearance of the so-called Neanderthal race, leaving no descendants. As to the Heidelberg jawbone, Professor Branca, in his *Fossil Man*, warns us of the impossibility of deciding what a skull was like merely from a jawbone. As a fact, there are many practical difficulties, I may say absurdities, besetting the theory of the evolution even of the *body* of man from the animal, leaving aside all reference to man's higher nature.

In another book of Professor Keith's, *The Human Body*, written before he found that the missing links must be given up, he uses as arguments for the evolution of man from an ape-like ancestry, many small organs in our bodies which have some resemblance to similar organs in the bodies of the ape, such as certain muscles, the tip of the outer ear, a lobe at the base of the right lung, the long and narrow

nails of man, the hairs on certain parts of the body, etc. But the question naturally arises, How is it that these trifling characteristics should have persisted to the present day, while the bony framework of the body became what it now is as far back as the Pleistocene period ?

It must be understood that none of the evolutionists hold that a race of anthropoid apes, such as those which at present exist, were the forefathers of mankind ; what they suppose is, that in Miocene times, or earlier, there were ape-like animals who were the common ancestors of *man* on the one hand, and of all varieties of the *ape-family* on the other. But there is no explanation of the fact that while there are many sorts of apes, science freely acknowledges that there is only one race of mankind. Huxley says : “ I cannot see any good ground whatever, or any tenable sort of evidence, for believing that there is more than *one* species of man.”

Now, if we suppose that there was such an ancestral ape, who was the progenitor of man, we have several questions to ask—How did man obtain his large brain ? How did he lose the hairy covering of his supposed ancestors ? How did he acquire the gift of language ? How did he assume his erect posture ? How did he get his shorter upper limbs and longer lower limbs ? How did he get his flattened foot, with the non-opposable great toe ? How was the human hand evolved ? How did the teeth of man become differentiated from those of the ape world ?

We ask, in what *order* did these changes come, and what *cause* could be assigned for such changes ? To take only the change of posture, Professor Keith says : “ The closer one studies the matter, the magnitude of the structural transformation required by a change of posture becomes more and more apparent. There is not a bone, muscle, joint, or organ in the whole human body but must have undergone a change during the evolution of our posture.”

Similar questions are no doubt mooted in the books of the leading evolutionists, but these authorities give us no help at all, for at every point they are hopelessly at variance. As Mr. Dale says : “ The mazes of speculation on this head are great and diverse.” Dr. Keith’s solution is that the process occupied millions of years—a phrase he uses several times—but this makes the persistence in the human body of small characteristics similar to those in the body of the ape all the more unintelligible.

I suggest that nothing less than a series of miraculous interferences by a Power above nature could possibly have brought about the changes that would be required for the evolution of man from the ancestral ape without any trace being left of its process. Does it not make it simpler if we can only believe that—"the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul"?

Dr. W. Woods Smyth: I am sure we may all congratulate Mr. Dale upon the temperate and graceful way in which he has handled this most delicate and difficult subject. The flint implement evidence, as he has said, has certainly been overdone. However, I beg to differ in regard to the Neanderthal man. There is no right evidence for cutting him out of man's genealogical tree and linking him with the ape, and this view is united with a grave error, which the Victoria Institute will never receive, namely, that there have been several species of men. It is easy to show that this is a fallacy. Of the *Quadrumana* there are over 200 species; when we come nearer to man in the *Simiïdæ*, they drop to 11 species; nearer, still in the *Anthropopithecus*, there are only two or three species, and in the *Orang* only one. These facts destroy the contention of there ever having been several species of men.

Again, as Professor Ray Lankester says—"No Evolutionist now believes that the ape stood in the ancestry of man, although we meet with men very ape-like in appearance. The ape is only an offspring from the human line. The blood reaction test shows that the ape is related to man as the donkey is to the horse. But the ass was never in the ancestry of the horse."

It may disarm opposition to the doctrine of the evolution of man to remember that Professor Klaastch upholds the view that man has had an entirely independent line of descent from that of the lower animals, and going far back to the very earliest roots of the mammalian genealogical tree. That is to say, low down in Palæozoic or primary epoch—a view which I have also held. The blood reaction test also shows that between man and the lower animals there is absolutely no relationship. We have an evidential fact in support of this point from an unexpected source. In Psalm cxxxix, Revised Version, we read:—

" I will give thanks unto Thee ; for I am fearfully and wonder-
 fully made ;
 Wonderful are Thy works ;
 And that my soul knoweth right well.
 My frame was not hidden from Thee,
 When I was made in secret,
 And curiously wrought in the lowest parts of the earth.
 Thine eyes did see mine imperfect substance,
 And in Thy Book were all my members written,
 Which day by day were fashioned,
 When as yet there was none of them."

The writer of Ecclesiasticus xvii, 5, or one of his transcribers, evidently understood the " day-by-day " of this Psalm to refer to the days of Genesis. The Psalms are remarkable for far-reaching inspired truths : let us beware of making this scripture, which attests a great natural fact, of none effect by our own traditions. Genesis tells of the creation of man ; the mode, except in the case of Eve, is not recorded. This Psalm tells us the mode, namely by Creative Evolution.

Mr. A. W. SUTTON, J.P., F.L.S. : Mr. Dale quotes from the Bishop of Birmingham, and I conclude that he adopts the bishop's views as quoted : " I venture to say that there is no man who is not thankful, for the great Creator's sake, that the intertwining of His creatures has been accepted on scientific knowledge." I would like to ask what the lecturer considers is meant by the " intertwining of God's creatures." I would like to ask Mr. Dale if he agrees that that has been accepted on scientific knowledge or scientific explanation. The next question comes from a closing paragraph of the paper. Mr. Dale says : " We dare not deny Evolution altogether." Not speaking merely for the sake of argument—for as our Chairman says, the matter is of vast importance—I should like to ask what kind of evolution he speaks of. Is it organic, that of plants and animals ? Because if so, scientific men are not prepared to say that there is any increasing evolution in animal or plant life. To what evolution does the lecturer refer, when he speaks of the evidence as increasing day by day ? I speak subject to correction by those who know better, but I believe I am correct in saying, that Darwin's

theory rests absolutely on evidence of acquired characteristics, and I believe that we have no evidence here of that kind.

As we know, the Victoria Institute is a Philosophical and Scientific Association; and if we dwell upon the religious aspect at all, it is the wisdom from Scripture itself and the Divine philosophy of it that we accept. It is upon that line that I make one or two suggestions. First of all, as to time. We all know that though God works in and through time, He is in no way subject to time. The lecturer has quoted the first chapter of Genesis, but the second chapter shows another method altogether. Why should not God work by a long process of development, and why could He not act specially, as in the second chapter? There is no contradiction. Then as to the humanity of our Blessed Lord, upon which everything depends. It is stated of Him, and supported in two other statements: "Thou, Lord, in the beginning hast laid the foundation of the earth; and the heavens are the works of Thine hands. They shall perish, but Thou remainest; and they all shall wax old as doth a garment; and as a vesture shalt Thou fold them up, and they shall be changed; but Thou art the same, and Thy years shall not fail." That quotation, relating to Jehovah, is, as we know, by the Spirit of God, applied directly to Christ. The next is, that "all things were created by Him, whether visible or invisible, thrones, dominions, principalities, and powers, all were created by Him." Again in John's gospel: "He was in the world, but the world was made through Him, but the world knew Him not." These statements affect the whole question. The present upheaval of all civilisation suggests that we should cling more closely to the Scriptures, and to Him upon whom everything depends. I see no reason whatever to thank the lecturer for all that he has said. I think those of us who accept the Bible view of the Creation, and the Divine humanity of Christ, can rise above all discussions, interesting though they may be, and go on from time to eternity.

Mr. M. L. ROUSE, B.A., B.L.: I think the lecturer has dispassionately set before us two views, but I cannot agree that man is so normally fashioned, or that he is descended from an ape-man. First of all, I cannot understand exactly how people can square Darwinism with the account in Genesis. Supposing that man had "developed," and that ape-men are to be found in diverse parts of

the world, from Sussex to China—quite as likely in the Far East as in the West—how is it that their descendants do not exist, and how is it that they became two distinct persons, Adam and Eve? Dr. Walter Kidd, an eminent zoologist, has shown that, whereas on the arms the arrangement of hair is the same in the man as in the ape, yet in the monkey all the hairs go straight down the back to the tail, while in the man the hairs run upwards to the neck. Again, on the head there is a circle, and in the loins there is a diversion of the hair horizontally.

Mr. SIDNEY COLLETT: I was particularly struck with the fact that (as the lecturer tells us) there is no missing link in existence; but, surely, in Evolution we should have some traces of the missing link. If there is any truth in Evolution, I cannot understand the meaning in Genesis of the words: "God created man in His own image, in the image of God created He him; male and female created He them."

Rev. JOHN TUCKWELL, M.R.A.S.: I think it was in 1895 that Lord Kelvin, in a lecture here, controverted the long-period claim for the existence of life upon the earth. In effect, he said to the geologist: It is no use to talk of your hundreds of thousands of millions of years. You cannot have more than 30 millions of years at the very most. The earth could not have had life upon it more than that. We are told that the whole geological strata—the part of the remains of life which are known—amount to about 30, 45, or I think the extreme limit is 50 miles. If you figure it out, you will find that, reckoning 1 foot in 100 years, this only means 26 million years. So we come pretty near to what Lord Kelvin says, and I do not think we are justified in accepting hundreds of millions of years of man's life.

LECTURER'S REPLY.

I am very much obliged for the way in which you have received my Paper. It is a most difficult subject; and I had qualms about tackling it at all. I will not refer to what the speakers have said, except that I have been asked to explain what the Bishop of Birmingham meant. Well, he is a gentleman whom it is difficult to explain; but the reference was to a sermon in Birmingham Cathedral, and I gathered that by "intertwining of God's creatures" he accepted the

doctrine of Evolution. Then as to the evidence accumulating. If you visit the Natural History Museum, and go round with any of the leading scientists, they will show you what Evolution has taught us, and that is what I mean by the evidence of Evolution accumulating day by day.

The resolution of thanks was carried with applause; and the meeting adjourned at 6.20 p.m.

595TH ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL
WESTMINSTER, ON MONDAY, DECEMBER 17TH, 1917,
AT 4.30 P.M.

THE REV. PREBENDARY H. E. FOX, M.A., in the Chair.

The Minutes of the preceding Meeting were read and confirmed.

The SECRETARY announced the Election of the Rev. E. T. Siddall-Jones as a Member of the Institute.

The CHAIRMAN, in introducing the Lecturer, said that he was one specially qualified to speak on the important subject which they had to consider. Born in Palestine, Mr. Finn had been familiar with Oriental languages almost from infancy, and had lisped Hebrew and Arabic. He had devoted the years of his maturity to the special study of the Pentateuch, and had just published a book on *The Unity of the Pentateuch* of most instructive character.

THE MOSAIC ORIGIN OF THE PENTATEUCH.

By the Rev. A. H. FINN.

IN a work recently published* my aim was chiefly negative, namely, to meet the modern allegations that the Pentateuch can be proved to be composite, and to show the unsoundness of the methods by which that conclusion has been reached.

Now it is my wish to take a positive and constructive line; to consider the evidences which tend to show that the Pentateuch is a single work of Mosaic origin.

For the purposes of this paper, then, I must ask permission to assume that the arguments of the former work are so far valid that it will not be necessary to meet or consider the alleged proofs of the modern critics. Laying these aside, it will be my endeavour to set forth the considerations which would guide us in forming an estimate of these five books when examined fairly and without presupposition.

These will fall into three divisions :—

- I. Indications that the work is a Unity.
- II. Indications that it is of great Antiquity.
- III. Indications that the author was Moses.

* *The Unity of the Pentateuch*, Marshall Bros.

§ 1. INDICATIONS OF UNITY.

(a) *Concession of Opponents.*

We may begin by noticing that even those who maintain that the Pentateuch is composite have to recognize in it a certain kind of unity. They hold, indeed, that there were originally several independent "sources," but the facts of the case and of the subsequent history compel them to postulate that these have been "combined"—interwoven, welded, or fused—into a compact whole, much as the materials of an edifice, originally separate, have been united by the skill of the builder. They admit that the whole bears the impress of a single mind, only they maintain that it was the mind of a "Redactor," not that of an author.

(b) *External Evidence.*

In the nature of the case there can be little external evidence, yet there is some.

(i) For centuries the custodians of the work, the Jews, have known it by a single name, "the Torah"—the Law. The other designation occasionally used,—“The Five Fifths of the Law” (חמשה חומשי תורה),—shows that they regarded each of the divisions as a necessary part of a single whole.

(ii) The testimonies of Josephus and Philo show clearly that they regarded the work as a five-fold unit; and the history of the Septuagint and the existence of the Samaritan Pentateuch further show that, as far back as we can trace it, the work was looked on as unique and separate from all other Hebrew literature.

(iii) The ancient titles given to these books point in the same direction. As is well known, in Hebrew the books are distinguished by words taken from the opening verse; in Greek they have descriptive titles summarizing the subject of the volume. Whichever of these may be the more ancient usage, they point to a distinction from the other books of the Old Testament.

As regards the Hebrew, the only other books distinguished by the opening word are Proverbs and Lamentations. Now *Mishlay* (משלי), while being the first word in Proverbs, is also a title descriptive of the contents; and the opening phrase from which the designation of Lamentations is taken, is in itself an extended title, *Aychah* (איכה). The fact that there is an alternative title *Kinoth* (קינות, Laments), is really a confirma-

tion of the idea of unity with a previous work, for Lamentations was often reckoned as part of the book of Jeremiah.

In the Greek version, these titles disappear, "and in their place we find descriptive names, suggested in almost every case by words in the version itself."* Other books of the Old Testament have "descriptive names," but they describe the nature of the contents (*e.g.*, Psalms, *Ψαλμοὶ*; Chronicles, *Παραλειπομένων*), and do not summarize the subject as do Genesis or Exodus.

It is not unreasonable to say that both Hebrew and Greek titles do distinguish between the first five books and the rest of the Old Testament. No doubt this primarily suggests separation, but that separation implies that the five stand together in a common isolation.

(c) *Style.*

Turning now to internal evidence, we have next to consider the question of style, which figures so largely in the arguments for the analysis of this work.

Speaking broadly, we may say that three distinctive styles have been insisted on:—

- I. Flowing and picturesque (JE).
- II. Prosaic and formal (P).
- III. Fervid and impassioned (D).

(i) When, however, we find that style I is mainly employed in vivid narratives whose interest might almost be termed romantic; that style II occurs chiefly in statements of legislation, statistics, genealogies, details of journeys and construction; and that style III is almost confined to what profess to be reports of discourses delivered at a time of exceptional emotion, the variations cease to be surprising or incongruous. They become almost a necessity of intelligent composition, such as a talented author would naturally employ. Such variations of style to suit different subjects might easily be paralleled from modern works and histories of whose unity there can be no question.

(ii) When, too, we find that the characteristics of style I repeatedly cross and interlace with those of style II—as is said to be the case in the account of the Flood, the narrative of

* Swete, "Introduction," p. 214.

Dinah, the accounts of the Plagues, of the passage of the Red Sea, of the mission of the Spies, and of Korah's Rebellion—and that traces of both style I and style II are said to be discoverable in the volume chiefly characterized by style III, it becomes much more probable that the variations are due to one and the same writer whose style is coloured by the nature of the thought he is expressing, than that they are due to the more or less arbitrary piecing together of fragments from different works.

(iii) It is, however, further urged that the passages distinguished by characteristics of style are also marked by peculiarities of diction or historic representation, and that these peculiarities confirm the analysis arrived at by considerations of style.

If all the passages in style I invariably showed one set of peculiarities, and all the passages in style II a different set, there would be great force in this argument, but it is not so. Instead, we find that passages in style I have embedded in them, here and there, peculiarities supposed to belong to style II, and *vice versa*. A division by style alone would not coincide with a division by peculiarities alone.

The fact that marked peculiarities, whether verbal or historic, are common to passages of varying style would tend to show that all these passages come from the same author, and that therefore variation of style is not a proof of difference of authorship.

Suppose a panel of wood (like that in the chapel of Trinity College, Oxford) in which dark and light patches combine to form the semblance of a picture. Suppose that someone asserts: "This appearance of a picture is not natural but artificial. Pieces of different woods, one kind dark and the other light, have been fitted together to produce this appearance. And, to prove that I am right, you will find that the parts differ in texture as well as in colour. The dark parts are rough, and the light parts are smooth."

Now if on examination the dark parts turned out to be all rough and the light parts all smooth, the presumption that these were really different kinds of wood would be greatly strengthened. But if it was found that the dark parts were smooth in places, and the light parts rough in places, that would show that differences of texture occur in the same wood, while the fact that rough and smooth wood alike are partly light in

colour and partly dark would show that difference of colour does not mean difference of origin. The presumption would then be that the panel was of one piece of wood, and the appearance of a picture natural, not artificial.

The fact, then, that peculiarities of diction or representation are common to passages which vary in style is in reality an indication that the whole work is of one piece, and that any appearance of design has not been artificially produced by combination.

(iv) Added to all this there are certain characteristics which link together the various parts. The tendency to repeat a statement in an enlarged or varied form, sometimes alleged as a special characteristic of P, is also found in passages attributed to JE: parenthetical digressions are found both in D and P (in Deut. ii, 20-23; x, 6-9; in P, Exod. vi, 14-17): the use of stated formulæ is nearly as frequent in Deuteronomy (*e.g.*, "the commandments which I command thee this day," "the land which the LORD thy God giveth thee to possess it") as in Leviticus: all the parts show a disregard of strict chronology (in JE, Gen. xxxviii, Judah and Tamar, and Exod. xviii, Jethro's visit; in P, Num. vii and ix, events in first month after the census of the second month; in D, Deut. i, 37, 38; ix, 22; x, 6, 7). These characteristics are marks of a peculiar turn of thought, and lie deeper than the surface variations on which the critics rely. They are fair evidence that the whole work proceeded from one mind.

(d) *Inter-relation of Parts.*

It has before now been pointed out* how closely the parts varying in style are inter-related; how they dovetail into one another, and explain one another in a way that would hardly be possible if they were due to different authors. It would be superfluous for me to go over ground that has been already so well covered, but perhaps I may be allowed to recapitulate some points that have occurred to myself, and (so far as I know) have not been noticed elsewhere.

(i) The consistent use of *hoteed* (הוֹלִיד) in the genealogies of the chosen line (Gen. v, 3-32; vi, 10; xi, 11-27), while *yalad* (יָלַד) is used for other lines (Gen. iv, 18; x, 8-26), shows

* See ORT, *Problem of O.T.*, 348-359.

a definite plan running through the whole series. In like manner the alternations of *chazak* (חזק) and *kabed* (כבד) show a similar unity of plan governing the account of the Plagues.

(ii) Gen. vi, 9, "These are the generations of Noah. Noah was a righteous man, and perfect in his generations" (attributed to P) follows immediately after and explains "Noah found grace in the eyes of the LORD" (v. 8, attributed to J). In like manner Gen. vii, 11 expands and explains v. 10.

(iii) The passage, Gen. vii, 17–viii, 5, alleged to be composite, displays a threefold use of triple climax, indicating the work of one mind.

(iv) The renewed commission of Moses in Egypt (Exod. vi, 2–vii, 13, P) is the necessary sequel to Moses' complaint of the failure of his mission to Pharaoh (v, 22, 23, J).

(v) Deuteronomy, admittedly founded on the JE laws and history, and showing a number of verbal coincidences, requires the P laws to explain the bare references to the different kinds of Sacrifices, and to the law of Leprosy. The Deuteronomy title "Feast of Booths" (חג הסוכות xvi, 13) is only explained by Lev. xxiii, 42–43. The Deuteronomy system of judicature (xvi, 18; xvii, 8–13) modifies the Wilderness system (Exod. xviii), to suit the circumstances of the Promised Land. In the same way, Deuteronomy, while insisting on the law of the Central Sanctuary laid down in Lev. xvii, 1–5, relaxes the laws of slaughtering for food and of tithes, and makes a further provision of Cities of Refuge to suit the changed condition.

(vi) Exod. xviii records Jethro's suggestion of appointing subordinate judges: Deut. i, 9–17 supplements this by recording how Moses acted on the suggestion. Num. xiii, 1, 2 records the Divine authorization of the Mission of the Spies: Deut. i, 22 supplements this by recording that the first suggestion came from the people themselves.

(vii) The laws of Exod. xxii, xxiii, of the latter half of Leviticus, and of Deuteronomy, show the same unsystematic mingling of subjects. The three closing "hortatory exhortations" (Exod. xxiii, 20–33; Lev. xxvi; Deut. xxviii) are alike in character, and display a consistent progression in that order. The intercessions in Exod. xxxii, 11–13, 31 f.; Num. xiv, 13–19; and Deut. ix, 26–29 are marked by the same magnanimity of character and the same turn of thought.

(viii) All the parts consistently represent Israel as a mighty nation at and after the Exodus.

(ix) All the parts show the distinction between *Ani* (אני) as the imperious and emphatic form of the personal pronoun, and the condescending or deprecatory form *Anokhi* (אנכי).

(x) All the parts preserve the distinction between JEHOVAH (יהוה), the personal Covenant Name, connoting the relation of God to man and especially the Chosen Family, and *Elohim* (אלהים), the God of creation and all nations.

In Genesis and Exodus *Elohim* is several times found with the definite article האלהים, indicating the only true God, particularly in the Egyptian history and at the Burning Bush. The same use is found three times in connection with Jethro* and twice in connection with Balaam. In Deuteronomy it occurs four times where the teaching that God is the only true God is emphasized.

(e) *Plan.*

Taking the Pentateuch as a whole, a single purpose, slowly but consistently developed, is observable.

The earliest chapters, Gen. i-vi, lay down briefly but broadly the foundations of the Creation, the Fall, and consequent rapid corruption of the human race. Then chapters vii-xi narrate the Deluge, the fresh start after it, and again a rapid multiplication and deterioration. The remainder of the book is occupied with the selection of a particular family and its history down to the sojourn in Egypt.

The other four books deal with the enfranchisement of that family, now become a great nation, and its education and discipline in the Wilderness. The earlier part of Exodus narrates the sufferings and miraculous deliverance from servitude of the People; the latter part, the great Theophany at Sinai, the ratification of the Covenant, and the erection of the Tabernacle to be the Dwelling of the Divine Presence in the midst of the People. Leviticus carries on the tale with the laws of sacrificial ceremonial, the inauguration of the priesthood and consecration of the Sanctuary; then laws as to various forms of defilement, culminating in the purificatory rites of the Day of Atonement; and lastly laws to ensure the right conduct of the People. Numbers begins with the preliminary census, and carries on

* In one verse, Exod. xviii, 11, Jethro uses the term for "the gods," where he acknowledges the supremacy of JEHOVAH.

the wanderings and vicissitudes of the People up to their arrival in Moab. Deuteronomy crowns the whole with the valedictory addresses of the aged Leader, impressing on the People the high honour of being so called and chosen, and the consequent need of responding worthily to their vocation.

It has been asserted that here there is not a real close.

“The first stage in the history of God’s dealings with His chosen people ends with their settlement in the Promised Land rather than with the death of Moses. The promise is made to Abraham, ‘To thy seed will I give this land’ (Gen. xii, 7) and frequently repeated to him and his descendants in the book of Genesis. The rest of the Pentateuch records the development of the nation, and its discipline preparatory to entering the Land. This record is incomplete without the book of Joshua, in which the fulfilment of the promises is recorded.”*

If the end aimed at were only the installation of the Chosen People in the Promised Land, there would be weight in this argument. But the promise of Gen. xii, 7 is subsequent and subsidiary to the larger promise of v. 3, “In thee shall all the families of the earth be blessed.” In view of this greater end, the close of the nation’s time of trial and discipline becomes a marked era. The Pentateuch records the initial stages of a mighty scheme of redemption: the entry into the Promised Land commences a new phase in which the Chosen People are given the opportunity to rise to the height of their Divine mission to the world.

The selection and preparation of a Chosen People, not for their own sakes, but for the ultimate benefit of all mankind, is the true burden of the whole five books, and all the manifold details only subserve this one great purpose.

Is it possible to believe that this majestic unity of design was not deliberately planned, but only achieved by the labours of a Redactor piecing together incongruous and even inconsistent materials? Can we believe that a couple of narratives mainly based on folk-lore, a series of discourses composed in the name of a legislator long deceased, and the codification of an amorphous mass of priestly decisions and Temple usages,—all three originating independently and at long intervals of time,—

* Chapman, *Intro. to Pent.*, p. 6.

could possibly have been combined into so compact and coherent a whole ?

That would indeed be a stupendous miracle.

§ 2. INDICATIONS OF ANTIQUITY.

If, then, the Pentateuch be a unity, to what age can we assign it ? Can we attribute it to the literary activity said to have prevailed in the days of the early monarchy ? or to the dawning of the prophetic era ? or to the religious revival under Josiah ? or must we bring it all down to the period after the Exile ?

Here the admissions of opponents will not assist us. They do admit that parts of the Pentateuch (notably some of the poetry) are very ancient, and that Moses was "the ultimate founder of both the national and religious life of Israel."* But they look upon the more ancient elements as mere fragments preserved in works of much later date, just as stray boulders may be found embedded in strata of more recent formation. We turn then to the evidence.

(a) *External Evidence.*

(i) In the LXX version there are many indications that the translators have not understood (or misunderstood) the Hebrew words. For instance, in Gen. vi (where the context determines the sense) the word for "Ark" (תבה) is rendered *κιβωτὸν*,† a wooden chest, but in Exod. ii, 3 is simply represented by *θίβω*, and the material of which it was composed (גמל papyrus) is altogether omitted. So in Gen. xxii, 13 the word for "thicket" (סבך) is represented by *φυτῶ σαβέκ*, which combines a not very accurate translation with a transliteration. The words for "ephah" and "shekel" are occasionally rendered by a Greek word, but more commonly are simply turned into Greek letters.

The word "Shittim,"—acacia,—is represented by a word which seems to mean "not liable to rot," except in a proper name, where it is transliterated.

The renderings *μονοκέρας* (one-horned, possibly = rhinoceros) for the wild ox, *Rem* (רמס) and *καμηλοπάρδαλις* (giraffe) for *Zamer* (זמר, a kind of deer, R.V. chamois) suggest

* Driver, LOT, 152.

† This word is also used, Exod. xxv, 10, etc., for the "Ark" (ארון) of the Covenant.

that animals known in Africa have been substituted where the meaning of the Hebrew was unknown. These and a good many more facts suggest that the writings were already ancient in the middle of the third century B.C., and that many words had become obsolete.

It is, however, true that similar mistranslations are found in other parts of the Old Testament, as in the titles of the Psalms, and therefore these facts alone would not suffice to prove that the Pentateuch was of any greater antiquity.

(ii) The existence of the Samaritan Pentateuch forbids us to place the work later than 420 B.C., and quite possibly may push it a century or two further back.

(iii) The evidence of the other books of the Old Testament would carry the Pentateuch back to a time before Jeremiah, before Hosea, before Solomon or David, even to the time of Joshua, for Josh. xviii, 1 testifies to the setting up of the Tent of Meeting at Shiloh, and Josh. xxii, 9-20 to the unlawfulness of any altar for sacrifice except that at Shiloh.

These evidences the critics disallow, sometimes attaching a different meaning to words or phrases (*e.g.*, insisting that *Torah* does not mean a written law, but "oral direction"; or that the Tent of Meeting in Joshua was not P's Tabernacle, but JE's "simple tent"); sometimes by contending that such passages are late interpolations.

It has to be remembered, however, that these interpretations and contentions are largely, if not entirely, dependent on the previous analysis. The critics have not begun by deciding against these passages on independent grounds, and therefore left them out of count. They first decided that certain parts of the Pentateuch were of late date, and then, on grounds furnished by their analysis, have explained away or excised the passages in later books which militated against their conclusions. But when the question at issue is whether any part of the Pentateuch is of late date, the evidence of the other books ought to be allowed its full weight.

(b) *Linguistic Peculiarities.*

The use in the Pentateuch of the form הוּא for both masculine and feminine of the pronoun is well known.

Both Dr. Driver and Mr. Chapman argue that, as Arabic, Aramaic, and Ethiopic have the distinction between *hu'* and *hi'* in sound, this must be "part of the common stock of the Semitic

languages," and therefore Hebrew also must have had it. At best this is only an *a priori* inference, and there is no proof that early Hebrew had the distinction. Why, for instance, might not the language spoken by Abraham have parted from the common stock before that distinction was introduced?

Mr. Chapman further states that "in old inscriptions, Phœnician, Moabite, and Aramaic, the pronoun is written $\aleph\eta$ for both genders, and it seems probable that the same letters were used in Hebrew."* Again, this only amounts to probability without proof.

But in truth these arguments, whatever weight they may have, miss the real point at issue, which is, Why is this anomaly practically confined to the Pentateuch? Even if the pronoun was originally written $\aleph\eta$, why has η been inserted almost uniformly in these books, and \aleph almost uniformly in all others? Are we to believe that scribes designedly made this difference in order to make the Pentateuch appear archaic?

Moreover the phenomenon does not stand alone. There is the other well-known instance of the masculine form *Na'ar* (נער) being used for "maiden" with only one exception (Deut. xxii, 19, נערה) in a chapter where the other form occurs thirteen times.

In addition to these, the R.V. renders Lev. xxii, 28 by "whether it be cow or ewe, ye shall not kill it and her young," which is evidently the meaning, and the LXX has feminine pronouns ($\alpha\upsilon\tau\eta\epsilon\ \dots\ \alpha\upsilon\tau\eta\varsigma$). Now the Hebrew for the animals ($\text{כשב} \dots \text{שור}$) may be taken as generic (LXX, $\mu\acute{o}\sigma\chi\omicron\nu\ \eta\ \pi\rho\acute{\beta}\alpha\tau\omicron\nu$), either male or female, but the pronouns (אתו ואת בנו) are uncompromisingly masculine, and literally rendered would read "him and his son."

Again, in Exod. xxvi, 26 the word "side" has a masculine numeral attached, but in xxxvi, 31 (the parallel passage) the numeral is feminine. So in Deut. xxix, 20, *Torah* is masculine, and in 28 feminine; in chapter xxxi, 24 again feminine, but in v. 26 masculine once more.

Do not all these, taken together, indicate that, when these books were written, the distinction between the genders was not clearly established? and would not that point to a very early stage of the language? Yet most of these instances come from the parts which are alleged to be of late date.

* *Intro. to Pent.*, 226.

(c) *Foreign Words.*

Several words in this work are of Egyptian origin. Dr. Driver admits eight or nine,* of which תבה, *Tebah*, for ark and שעטנז (Sha'atenez, mixture; Lev. xix, 19; Deut. xxii, 11) are only found in the Pentateuch, and three others seldom elsewhere.

In Exod. xvi, 16, 18 a certain measure is called 'Omer (עמר), and in v. 36 is explained as equal to one-tenth of an ephah. The word occurs nowhere else in this sense, but instead "the tenth part of an ephah," or 'Issaron (עשרון, tenth part) is used.

In a careful comparison of the Hebrew and Greek texts of the Pentateuch, which has occupied me for a considerable time, my attention has been drawn to the Greek transliteration of Hebrew names and words. Now 'Omer begins with the guttural 'Ain (ע), which has no equivalent in the Greek alphabet, and is therefore in most cases disregarded (as, e.g., in Ἰακώβ). In a few instances, however, it is represented by the Greek *gamma* (γ), and this word appears as γομόρ. But the remarkable fact is that the names in which γ appears are foreign names, such as Gaza, Gomorrah, Chedorlaomer, etc. Now in Arabic the name Gaza begins with the guttural *Ghain* (غ), only differing from 'Ain (ع) by a diacritical point, while in modern Greek γ is pronounced with a softer *gh* sound. It would seem, therefore, that the Hebrew, having no letter *Ghain*, has perforce represented it by the nearest equivalent, 'Ain, but that the Greek translators, aware of the true pronunciation of these foreign words, have indicated it by inserting the γ. This letter, then, in γομόρ (and the double vowelism with *o* points in the same direction) would show that this is not a Hebrew word, and both Driver and Fuerst (in his *Lexicon*) compare it to the Arabic *ghumar* (غمرة), a cup, "said to be used by Arabs when travelling in the desert."*

Does not this at once explain the unique use of the word in Exod. xvi, and the need for explaining it in v. 36? In a desert incident a desert word is used.

There is some reason, also, for thinking that some of the names of "unclean" birds, in Lev. xi, Deut. xiv, are traceable to desert Arabic, but this has not yet been established.

* LOT, 125.

† Driver, *Exodus*, 149.

The combination of Egyptian and desert Arabic words suits the time when the people were in the desert after a recent escape from Egypt, and no other period.

(d) *Desert Surroundings.*

The system of subordinate judges suggested by Jethro; the materials for the Tabernacle (especially the Shittim wood, and the skins of *Tachashim*); the provision of such things as Manna and Quails; the limitation of animal food to the peace-offerings and to animals taken in hunting; the permission to eat certain kinds of locusts; the obscure provision (Num. xviii, 27-30) that the heave offering is to be "as though it were the corn of the threshing-floor and as the fulness of the wine-press"; all these fit in with the conditions prevailing in the Wilderness. Some (at least) of them are so far from obvious that they can hardly be supposed to have been preserved by tradition, or inserted by later writers.

The worship of the Golden Calf points to a form of idolatry prevalent in Egypt; the sacrificing to "satyrs" in the open field (Lev. xvii, 5, 7) is exactly the form of superstition likely to be found in the desert; the worship of Baal-peor (Num. xxv, 3) is specifically Moabite; and the warnings and prohibitions of Deuteronomy are against forms of Canaanite idolatry. Is it possible that later traditions in independent sources should have preserved these, and only these, and that in the precise order required by the history?

Some of the evidence available, then, points to a remote antiquity for the whole Pentateuch, and much of it to that precise period when Israel was in the Wilderness.

§ 3. INDICATIONS OF MOSAIC AUTHORSHIP.

If the Pentateuch is the work of a single author and of great antiquity, going back to the Wilderness times, who was the author?

It is difficult to guess who but Moses could be suggested; but, without pressing this, or the consistent attribution to him in Scripture and tradition, there seem to be sufficient indications pointing to Moses as the true author.

We may begin by considering two characteristics which at first might suggest the possibility of another author.

(a) *Use of Third Person.*

Throughout Exodus, Leviticus, Numbers, and the "framework" of Deuteronomy, Moses is consistently spoken of in the third person. Does this mean that the writer was someone else?

The constant iteration of "I" and "me" in so long a narrative would have been wearisome and irritating; as a mere matter of style the substitution of Moses' name would be desirable. Besides this, that iteration would have looked like egotism, and there are sufficient indications that Moses was of a humble disposition (*see* his reluctance to accept the commission at the Burning Bush, Exod. iii, 11; his double disclaimer of eloquence, Exod. iv, 10, vi, 12; his utterance in the wilderness of Sin, "What are we that ye murmur against us?" Exod. xvi, 11; his suppression of himself in answering Korah and his company, Num. xvi, 8-11; and his constant use of the more modest *Anokhi* in his own utterances).

Further, is there any reason for supposing that Moses did the actual work of writing with his own hand, except where it is definitely stated "Moses wrote"? Great men in the East seldom, if ever, write their own letters, however capable of so doing they may be, but dictate them to a scribe. Is it not probable that Moses would adopt the same course? That would not, of course, detract from the Mosaic authorship, for we do not hesitate to ascribe the Epistle to the Romans to St. Paul, though xvi, 22 says, "I Tertius, who write the epistle."

Would not, then, the use of Moses' name rather than the first person be more suitable if the actual work of writing was done by a scribe? Possibly, also, this would account for the addition of the epilogue, Deut. xxxiv.

There appear to be sufficient reasons for Moses preferring the third person in narrating the events of his own life.

(b) *Self-assertion.*

On Num. xii, 3, "Now the man Moses was very meek, above all the men which were upon the face of the earth," Dr. McNeile comments: "To those who have held that the Pentateuch was from Moses' own pen, this verse, with its appearance of self-righteousness, has always been a serious difficulty."*

* *Numbers*, p. 66.

Is there not something of an anachronism in this estimate? In early ages, and indeed up to the Christian times, was meekness considered so great a virtue? Was it not rather looked upon as weakness of character? Dr. McNeile asserts that the word (עני) connotes "always pious humility towards God," but in Gen. xvi, 11, xxxi, 42, and Exod. iii, 7, 17, it is the word rendered "affliction," and in Deut. xxiv, 12 it is applied to the "poor" man whose pledge is not to be retained. Was the writer of Ps. lxx, 5 "self-righteous" when he asserted "I am poor (עני) and needy (אביון)"? Poverty and humiliation are suggested by the word rather than pious humility. At any rate, the general tendency of the Pentateuch can hardly be accused of showing a spirit of boastfulness; and that leads us on to the next consideration.

(c) *Record of Failings.*

The failings of Moses are frankly and unsparingly stated. He is represented as escaping from Egypt in fear (Exod. ii, 14); as neglecting the rite of circumcision (Exod. iv, 24-26); as distrusting the validity of his commission (Exod. v, 22-23); as breaking the tables of the Law in hot anger (Exod. xxxii, 19); as despairing of his power to manage the people (Num. xi, 11-15); as having married a "Cushite" wife (Num. xii, 1); as failing to sanctify the LORD at Meribah (Num. xx, 12).

Would any contemporary or any later writer have ventured so to disparage the character of the great Leader? Contrast the glorification of Moses to be found in the Talmud, or even the terms in which he is alluded to in the Psalms.

In like manner, who would have recorded without any extenuation the drunkenness of Noah, the deceit of Abraham, Isaac, and Jacob, the incest of Judah, the conspiracy of the ten brethren against Joseph, Aaron's sin in making the Golden Calf, the presumption and fate of Aaron's sons, Miriam's leprosy, the repeated murmurings and backslidings of the people; or would have included the scathing denunciations in Deuteronomy of Israel as rebellious, stiff-necked, and uncircumcised in heart or the terrible warnings of Lev. xxvi and Deut. xxviii?

(d) *Matters only known to Moses.*

In many parts there are accounts of what took place when Moses alone of human beings was present. The happenings at the Burning Bush; the renewal of that commission in Egypt;

the account of what passed on Sinai, and during the two periods of forty days (including the whole "Book of the Covenant," and the instructions about the Tabernacle); a great part of the laws in Leviticus and Numbers; the colloquy in Num. xi; the intercession after the return of the Spies, Num. xiv; Moses' prayer to be allowed to enter the Promised Land, Deut. iii, 23-25; the further account of the stay in the Mount, Deut. ix, 9-29; and the final summons to ascend Nebo to his death; who but Moses could have known anything about any of these? Yet unless all of them (and they form a considerable part of the Pentateuch, affecting all the alleged "sources") were derived from Moses himself, they can only be imaginative fabrications.

Is that credible? Can we believe, for instance, that anyone who was merely inventing could have imagined the tender, self-sacrificing intercession in Exod. xxxii, 31, 32, "Oh, this people have sinned a great sin, and have made them gods of gold. Yet now, if thou wilt forgive their sin—; and if not, blot me, I pray thee, out of thy book which thou has written"; or the wondrous proclamation (xxxiv, 6), "The LORD, the LORD, a God full of compassion and gracious, slow to anger, and plenteous in mercy and truth"? Do not utterances like these bear on the face of them the stamp of truth? Can we even suppose that accounts so minutely detailed could have been handed down by tradition?

(e) *Matters only suitable to Moses.*

There are intimate matters,—the meeting with Jethro's daughters, the incident "at the lodging-place," Jethro's rebuke of Moses,—little likely to be generally known or to be preserved by tradition. There are also little personal touches in Deuteronomy only appropriate in the mouth of Moses.

Then there is the evidence of the "Blessing of Moses," Deut. xxxiii.

In this, the most noticeable features are the omission of any mention of Simeon,—an omission so marked that a few of the Septuagint MSS.* have inserted the name in v. 6,—and the lengthy eulogies of Levi and Joseph (with Ephraim given the predominance, v. 17).

The omission of Simeon may be due to the leading part taken by that tribe in the turning aside after Baal-peor (Num. xxiv,

* The three uncials A, M, N, and five cursives.

15). That would be suitable on the lips of Moses when the memory of the transgression was fresh, but how can it be accounted for on the part of any later writer ?

The special praise of Levi is natural on the part of one who was himself of Levite origin, particularly as the chief allusion is to the faithfulness of the tribe in the matter of the Golden Calf, when the descendants of Levi redeemed their character by consecrating the fierce temper of their ancestor to the service of the LORD. Would it have occurred to anyone but Moses to make this one of the most remarkable features of the Blessing ? The curious digression in Deut. x, 8, 9 (also only suitable if Moses was the speaker) confirms this view.

The blessing of Joseph corresponds in many respects to that in Gen. xlix, but differs in the emphasis laid on the "ten thousands of Ephraim." No doubt there is an allusion to Jacob's prediction that he should become greater than his brother (Gen. xlviii, 19), but is that sufficient reason for its insertion here ? Moses, however, would have had special reason for noticing Ephraim since it was the tribe of Joshua, his minister and faithful adherent, and already designated as his successor.

These considerations account reasonably for the facts when we look for an explanation, but is it likely they would have influenced anyone but Moses ?

Then there are the differences between this Blessing and that of Jacob.

In Genesis the denunciation of Reuben, Simeon, and Levi are connected with incidents in Jacob's own life to which the patriarch would naturally recur: here Reuben is dismissed with a prayer for his continued existence, Simeon is passed over in silence, but Levi receives a glowing eulogium. In Genesis Judah is indeed the praised one: here he is rather interceded for. In Genesis Dan is likened to a serpent in the way: here he is called a lion's whelp, the designation reserved for Judah by Jacob. In Genesis Benjamin is likened to a ravaging wolf: here he is "the beloved of the LORD."

Now on any theory the Blessing of Moses was considerably later than that of Jacob. Who would have ventured to depart so widely from the sayings attributed to the father of the nation, and even (in the case of Levi) to change a curse into a blessing ? Surely that could only be done by one in such a position of authority as Moses held, and none after him.

(j) Plan.

The whole Pentateuch contains 187 chapters occupying 166½ pages in the Revised Version.

The period from Adam to the call of Abram is represented as extending to about 2000 years; that from the call of Abram to Moses' flight from Egypt, about four centuries; from Moses' flight to his death, 80 years. Yet the first period is dismissed in 11 chapters (7½ pages), the second in 40½ chapters (34 pages), while to the third are devoted no less than 135½ chapters (125 pages). This striking arrangement is worth setting out in tabular form:—

Period.	Years.	Chapters.	Pages.
From Adam to Abram... ..	2000	11	7½
From Abram to Moses' flight... ..	400	40½	34
From Moses' flight to his death	80	135½	125

The Patriarchal age, only one-fifth of the previous period, occupies nearly five times as much space; the Mosaic part, one-thirtieth of the two previous periods, occupies three times the space allotted to the two together. Three-quarters of the whole work deal with matters which came within the personal knowledge of Moses.

That is exactly what might be expected if Moses was the author. For the earliest ages he could only have had remote traditions, and accordingly that period is merely sketched in, excepting the three great subjects of the Creation, the Fall, and the Deluge. The patriarchal histories would probably be handed down in much fuller detail, even if some documentary records were not preserved. The events of his own life, especially of the forty years from his call to his death, would provide the amplest material of all.

Is it within the bounds of any reasonable probability that this proportion, so closely corresponding to what would obtain in a work of which Moses was the author, could have resulted from the combination of three sources, all of much later date?

The considerations here set forth are, I am fully aware, mere outlines of a subject deserving much fuller and more thorough treatment. Nor have I included some important considerations advanced by other writers. For instance, no use has been made of Mr. Craig Robinson's weighty argument for the antiquity of the Pentateuch from the absence of all mention of Jerusalem, of the title "the LORD of Hosts," and of the musical services of the Temple; nor of the argument from the Egyptian colouring so ably urged by Prof. Naville and other experts, with which I am not competent to deal; nor of the arguments from the Theology of the Pentateuch put forward by Prof. Orr and (as regards Genesis) by the Rev. F. Watson.

It is not for want of appreciation that I have refrained from dwelling on these, but simply because I was unwilling merely to borrow from the thoughts of others.

Yet incomplete as the treatment of the subject has been, I venture to submit that the arguments indicated are wider, deeper, more surely founded on evidence than those advanced for the disintegration of the Pentateuch.

It will be to me a matter of deepest thankfulness if I have been enabled to contribute a little to the vindication, against modern theories, of the age-long belief that the five volumes of the Torah constitute one single work, of real antiquity, and due to the authority of Moses himself.

LETTERS RECEIVED BY THE LECTURER.

The Lecturer read the following letters received by himself:—

From the Dean of Ely, Rev. A. F. KIRKPATRICK, D.D.: I am much obliged to you for sending me your paper, and asking me to criticise it. But "a few criticisms" would be quite useless; and it seems to me hardly worth while nowadays to discuss what is almost universally accepted by scholars. I cannot imagine any student, trained in literary and historic critical methods, questioning the composite origin of the Pentateuch, if he approaches the subject from an unprejudiced point of view, and apart from inherited prepossessions. While there is much room for variety of opinion as regards details, the main outlines of Pentateuchal criticism seem to me established by complex and cumulative evidence.

From the Rev. Professor A. NAIRNE, D.D. : I thank you very much for a very interesting gift. It is, I am afraid, unlikely that, after changing my mind once on (as I felt) the compulsion of abundant evidence, I shall change it back again lightly. But a bit of scholarship is always a pleasure, and of course I value every fresh presentation of the other view. Let me touch on the point where we agree. I object to the idea of the *Redactor* as much as you do. Whoever made the final book, and whenever it was completed, the last author was an author, not a redactor : he (or they) used material rather than made extracts. And accordingly I too doubt whether any precise analysis, showing junctions, can be generally made—not, *e.g.*, in the Flood narrative ; yet sometimes it seems difficult to deny this—*e.g.*, Ex. xix. *ad fin.* יִיחַמֶּר and then fresh start. To me the characteristics of J.E.D.P. do not seem confused together, except just so far as this intelligent use of original material by a later author tends to blending.

But it is the history of Israel and the Jews, as presented by the Old Testament as a whole, that refuted my former opinion : you hardly touch on that.

From the Very Rev. MOSES GASTER, Ph. D., chief Rabbi of Spanish and Portuguese Jews' Congregations : I deeply regret that I cannot be present, for I should like to testify personally to the great value of your paper. I have read it with a steadily growing satisfaction : I have followed line by line the cumulative evidence which you are marshalling so skilfully in defence of the old traditional antiquity of the *Torah* and the Mosaic authorship.

The tide of the so-called Higher Criticism is ebbing fast. The spade has done its work : the discoveries in Babylon and Egypt have adduced an ever-growing number of evidences to the absolute accuracy even of the stray allusions in the Pentateuch. Nothing has as yet come to light which could call in question such accuracy : on the contrary, the reverse has been the case, and I need only allude among the latest discoveries to that of the Aramaic papyri in Egypt, which with one blow has destroyed the artificial structure of the Higher Criticism of Ezra and Nehemiah.

The Rock of Scripture, for a time submerged under the waves of that turbid flood, is emerging higher and higher, and the ingenuity of scholars is happily no longer placed at the service of destructive

forces. Healthy constructive work is now being done, and the more the ancient documents are investigated without bias, and even without favour, the more all these peculiar vain imaginings recede into the distant past. It is refreshing to follow up the new line of investigation, and also to turn aside from the extraordinary conclusions at which the latest disciples of Higher Criticism are now arriving.

It would not be the place here to mention any of these latest adepts in the art of destruction. It is curious to me to see how people will turn away from plain simple facts in order to give them a most fantastic interpretation. Neither the facts nor the words of the Bible mean to them what they really represent. Quite different meanings are placed upon them. I am sometimes reminded of recent studies in folk-lore where simple facts are made to carry a meaning totally strange to them. But this is a passing phase. A real independent examination of the relation between the Greek and the Hebrew has yielded already results different from those anticipated and taken for granted by the Higher Critics.

A critical edition of the Hebrew Bible, a desideratum of the highest order, will place us in even a better position to meet some of the verbal quibbles of these critics ; and still more a patient and laborious investigation of the text as it stands cannot fail in the long run to vindicate the antiquity of the *Torah*. I specially hold strong views about the Samaritan Pentateuch, which I believe to have been the text of the Northern Tribes, and therefore to represent a recension almost as old as the Judæan version, and akin to that popular Bible (a Hebrew Vulgate) which I consider to have been the basis of the Greek translation. It is far anterior to the date you mention ; and in my forthcoming History of the Jews, at which I have been working for many years, I hope to throw some new light on that famous incident mentioned in Ezra. The philological arguments break down as soon as they are no longer examined from a preconceived point of view. And even under the levelling activity of the Massorites, one can distinguish various strata, not only of language, but also of dialects.

Moreover, the compilation of a book like the Law out of mere tatters and fragments would not only be a unique phenomenon in the literary history of the world, but would scarcely be accepted

by a people—and a religious people too—as a basis and fount of inspiration and of religious life and conduct.

Counting you among the workers in the field of our Sacred Law, let me congratulate you on the success which has hitherto attended your labours. May you go from strength to strength!

DISCUSSION.

Prof. H. LANGHORNE ORCHARD, M.A., B.Sc., in moving a vote of thanks to the lecturer, said: Any man purposing to criticise the Holy Scriptures should possess the qualifications of (1) a reverent spirit; (2) detachment from bias; and (3) adequate scholarship. I do not find these three attributes together in any of the sceptical critics. Yet a fourth qualification is important, namely, spirituality, which says: "Oh, how *love* I Thy Law!" The four are all prominent in the Paper before us, —a Paper marked by acuteness in argument, cogency and cumulative force in reasoning, and fairness toward opponents.

I am especially struck with the arguments showing inter-relation of parts and unity of plan; also with those drawn from linguistic considerations and foreign words. The Holy Spirit was the Author of Pentateuch, as of all the Scriptures. Moses was indeed the principal writer. God has spoken to man by His holy prophets from the very earliest times. There has from the beginning been a Revelation, and this Revelation has not been left to the uncertainty and corruption of merely oral tradition. It has been *written* under the "inspiration of God."

Mr. M. L. ROUSE, B.A., B.L.: Before now in such discussions as these I have pointed out that several times in Joshua allusion is made to Deuteronomy, and once or twice in such terms as no forger could have thought of using. The passages are: "As I have said unto Moses, all this land shall be thine;" again, when Joshua rallied the Israelites into two companies to hear the Commandments, he added "as the Lord commanded Moses." Then, in an account of how many nations or cities were left, we read: "for it was the Lord's will to destroy them . . . as the Lord commanded Moses." These passages are witnesses to the fact that Deuteronomy was written earlier than the book of Joshua was. In Job viii, 8, we read:

Inquire, I pray thee, of the former age, and prepare thyself to

the search of their fathers, for we are but of yesterday, and know nothing, because our days upon earth are a shadow. Shall not they teach thee, and tell thee, and utter words out of their heart ? ” and so on. How could one inquire of the former age if the records were not written in a book ?

Mr. E. WALTER MAUNDER, F.R.A.S. : Some years ago a friend of mine, who was very much attracted by the Higher Criticism, wrote me several letters on the subject, and in one of these he referred to the account of the Flood, saying that it resolved itself into two narratives, so distinct that the man who ran could detect them. I wrote back and said, Take Genesis, and give me your analysis of the Story of the Flood, without consulting any critic, and see how your analysis agrees with that of the Higher Critics. I added, I can give you a modern instance to work out. My wife and I brought out a book between us. Will you go through and tell us, how much and which chapters, each of us wrote ? He declined to take up either challenge.

A MEMBER : I cannot imagine David offering up sacrifice or Solomon offering sacrifices at the dedication of the Temple if they knew they were absolutely forbidden to touch such things by the Law ; and why should Hosea (ch. iii) have said there should be no king and no prince and no sacrifice ? Those things are absolutely taboo in the book of Deuteronomy. It certainly helps me to understand the Bible much better if I conceive of the Pentateuch as growing gradually, as the Law grew.

Remarks on the subject were also made by Rev. J. Tuckwell, M.R.A.S.

The vote of thanks, having been seconded by the Rev. Bernard W. Harvey, was carried with acclamation.

LECTURER'S REPLY.

Mr. FINN : The time is short, and I must pass some of the points raised. First, with regard to meekness being found in the Old Testament, I was speaking rather of the general things in the Oriental world as to what meekness might mean. References in Joshua supporting the fact that Deuteronomy was written first, I can accept ; and I also believe that the earlier part of the Pentateuch must have been derived from earlier documents. With regard to the use of

the word *Elohim* with the definite article, I only used that to show that this rather remarkable usage is not confined to one book.

As to David and Solomon offering sacrifices, I know of no passage in the Old Testament that asserts that either of those kings offered sacrifices with their own hands. It says that David builded an altar. Did he do that with his own hands? It says that he gave to the assembly a portion of meat and bread. Did David go round and do that himself? It simply means that he commanded or allowed sacrifices to be offered by the appropriate agent. As to the difference between Kings and Chronicles, the one inspired with the spirit of Deuteronomy and the other with the spirit of Leviticus, modern history is written in exactly the same way: there is the secular and the ecclesiastical point of view.

WRITTEN COMMUNICATIONS.

The Rev. Canon R. B. GIRDLESTONE, M.A.: I have read Mr. Finn's paper with great interest, and agree with his view that the Pentateuch is one and ancient; but whilst the FOUR books may be regarded as authorised by Moses, the *first* was accepted by him as having come down from Patriarchal times. He might be called the inspired Redactor of it, but hardly the author. It was pre-Mosaic, and covers a long period during which we now know that the art of writing was carried on. See the code of Hammurabi (Abraham's contemporary). The whole is a growth, and shows signs of stratification. This is a fascinating subject for the true critic. Why, e.g., do we find the Egyptian name *Abib* for the Paschal month, and in later days *Nisan*?

Mr. Finn has noticed several of these points. In my book on the "Building up of the Old Testament," I have shown that Genesis consists of contemporary historical materials, and is the fountain of formulæ which run through the rest of the books. It is Semitic in language, and monotheistic in teaching throughout, and is the Fountain-head of Promise and the Foundation on which the rest of the Bible is built up.

The Rev. CHANCELLOR LIAS, M.A.: I heartily congratulate the Institute on Mr. Finn's excellent paper—the more so as it is the complement rather than the continuation of the work he mentions

at the outset. In that work he shows exhaustively how unsatisfactory German Biblical criticism is, how full it is of unproved assumptions and *petitiones principii*; and how hopelessly unscientific it is in its axioms, postulates, and definitions. In this paper he gives us the converse of the proposition he has proved in his book, and undertakes to show that the evidence—internal as well as external—points to the conclusion that the Pentateuch is a single work of Mosaic origin.

I ask the reader to note Mr. Finn's words (page 33) on external evidence, and especially to ii. On page 34, I have to remark that I could at any time undertake to produce from the works of historians so graphic and picturesque as Macaulay and Froude, passages as "prosaic and formal" as Wellhausenism produces from the Pentateuch. On page 35, I ask attention to the paragraph beginning, "If all the passages." Page 37 contains a reference to the similarity of character displayed in Exod. xxiii, 20-33; Lev. xxvi, Deut. xxviii; and also in Exod. xxxii, 11-13, 31 (and following verses), Num. xiv, 13-19, and Deut. ix, 26-29. This argument can as easily be tested by anyone entirely ignorant of Hebrew as by the profoundest Hebrew scholar. I have often said that the Wellhausen theory on such points is about as ridiculous as Aaron's excuse that he put the gifts he received from the people in the fire, and "there came out this calf." Note also the remarks under head v on this page. Also in page 38 note the use of the definite article with the plural word *Elohim* (lit. *gods*), showing that the writer was a believer in the Unity of God, whereas Wellhausenism contends that the Israelites were originally worshippers of the gods of Palestine; and in page 39, on the "majestic unity of design" displayed throughout the five books of Moses, and the impossibility of an array of "redactors" contriving to bring so "majestic an unity" about on Wellhausenist assumptions.

As to the word *Torah* (p. 41), I knew something of the Revisers of the Old and New Testament translations, and I am sure that undue and unnecessary deference was paid by many of them to those who were inclined to pay respect to Wellhausenists. Constantly, in the margin of the Revised Version, appears the word "teaching," as alternatives to *Law*, in the text. From Exodus to Malachi, the word *Torah* means Law (see Hos. viii, 12), though not, perhaps,

universally. But the verb from which it is derived means to *fling*, or *cast*, as a command *thrown out* by authority. There are very few passages in the Old Testament where it means anything but a law, and it generally means the Law of Moses. It very seldom means *custom*, and it is not certain whether it ever does mean "teaching." On page 42, I could say a good deal about the occurrence of *naghar* for *nagharah* in Gen. xxxiv, and generally of the Wellhausen division of that chapter into "sources." But I must refrain. I will only remark that it is an example of the resolution of the German critic not to see what he does not want to see. I will only add (see page 46), that the idea of meekness being a "serious difficulty" in the way of the genuineness of the Pentateuch involves a gross anachronism.

596TH ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, FEBRUARY 18TH, 1918,
AT 4.30 P.M.

E. J. SEWELL, ESQ., IN THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The lecture was illustrated throughout by lantern slides.

SUNSPOTS AND SOME OF THEIR PECULIARITIES.

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MY reason for choosing Sunspots for my subject is two-fold. First, the study of the spots upon the sun has been my work for forty-four years; they are the natural objects with which I am best acquainted. Next, though the subject of sunspots occupies but a very small corner of the entire domain of the science of astronomy, and though astronomy is but one out of the large and ever-increasing number of the physical sciences, yet examination of the methods employed in one scientific inquiry may give some rough idea of the principles by which scientific research in general is guided.

It has passed into a proverb that "Science is Measurement"; in other words, the scientific inquirer tries to throw into numerical form the data which he collects from his observation of the phenomena which he studies. There may be much observation of nature, even useful observation, but it cannot rightly be called "scientific" unless it is arranged on a system, is precise in character, and is more or less directed towards numerical expression.

Thousands of years ago, the Chinese observed and recorded the appearance of spots upon the sun, but for us the history of sunspots practically begins with the invention of the telescope

early in the seventeenth century. In 1609, Galileo made his first telescope, and late in 1610, or early in 1611, with one of his improved instruments, he discovered some dark objects on the body of the sun. A little later, a Jesuit Father, Christopher Scheiner, professor of mathematics at Ingolstadt, commenced a regular series of observations of these dark spots, which he termed "*Maculae*," and he also noted that some parts of the sun appeared to be brighter than the rest of the surface, and he, therefore, called them "*Faculae*," a name which is still universally given to them. Though Scheiner was able to show these spots to his pupils, he was at first forbidden to publish his observations, except anonymously, as his superiors were suspicious of his discovery. Thus, when he announced his discovery to the Provincial of his Order, the latter replied: "I have read Aristotle's writings from end to end many times, and I can assure you that nowhere have I found anything similar to what you describe. Go, my son, and tranquillize yourself; be assured that what you take for spots on the sun are the faults of your glasses or of your eyes."

Sunspots, in appearance are, as their name suggests, dark stains on the intensely brilliant surface of the sun. And a sunspot, when fully developed, shows two (or more) grades of darkness; an outer shaded ring known as the *penumbra*, and an inner, much darker, core which we call the *umbra*. The penumbra is generally striated; the umbra in very large spots shows points within itself darker still, which are usually called *nuclei*. It is characteristic of sunspots that they are associated together in *groups*, and these groups tend to conform to a certain type of development. At the first appearance, a pair of very small spots are seen near each other. The two members of the pair appear to be repelled, and they move apart; the two spots increasing in size, and other smaller spots forming between them. The group, therefore, tends to become a *stream* more or less parallel to the sun's equator. The leader spot is generally very well defined in outline, with its umbra dark and distinct; the rear spot is usually not so regular in form, or so dark as the leader, though it often is, for a time, the larger of the two. In the early days of the development of a stream, the leader moves rapidly forward from the rear spot, at the speed of about five miles a minute—that is to say, five or six times the speed of an express train. The photosphere, or bright surface of the sun, appears to be heaped up in front of the leader, and to overflow the small spots

in the middle of the group, soon concealing them from sight. Then the rear spot begins to be engulfed, and many streams of bright matter cross it, forming "bridges," or flow down into it. Finally, the whole stream disappears, with the exception of the leader, which has now become large and circular. In many cases the leader now begins to move backwards towards the region from which it originally sprang; sometimes it breaks up into small fragments, but more often it simply contracts on itself, and so gradually disappears.

Groups of spots differ largely as to their size and duration. The largest group in my experience covered an area of 4000 millions of square miles; a thousand times the area of Australia or of Europe. The smallest spots which would be counted worthy of the name, would cover about a million square miles. Fully-developed circular spots very seldom exceed 600 millions of square miles in area, and more generally run to a quarter or a fifth of that extent. Whatever theory of the constitution of a sunspot is accepted, it remains marvellous that a formation covering hundreds of millions of square miles should be able to plough its way through the solar photosphere at such tremendous speed, without breaking up or suffering deformation of its outline. The differences in the duration of spots are equally marked; many spots only last a few minutes; groups of a hundred million miles or more in area frequently last a fortnight or more; and occasionally a group has been known to persist for half a year.

The nature of sunspots may be briefly explained in the following manner. The general surface of the sun is intensely hot and bright, its temperature being about 6000° Centigrade. It appears mottled in character, minute granules of intensest brilliance being thickly clustered on a slightly less luminous background. The bright granules are supposed by many to be luminous clouds, produced by the condensation of carbon at the sun's surface. Sunspots, then, are areas where these clouds have not been able to form or have been torn asunder; areas which offer a very distant analogy to the storms of our own atmosphere. Thus, in terrestrial storms, we have regions where great differences of atmospheric pressure are striving to adjust themselves; in sunspots, probably, we have regions where great differences of temperature are similarly in action. Consequently, sunspots are areas both of lowered temperature—say, 3500° Centigrade, instead of 6000° —and of unusual heat. The cooling is evidenced by the formation of compounds, the characteristic spectra of

which have been clearly recognised, such as, for instance, titanium oxide, magnesium hydride and water vapour, and the absorption due to these accounts for much of the apparent darkness of the spot. Round the spot the photosphere is noticeably brighter, and in cases of great activity, very brilliant "bridges" flow into the penumbra, and cross the umbra, and the spectroscope shows many of the dark lines strongly reversed over or near the spot; all symptoms of increased temperature.

The peculiarity of sunspots which has inevitably attracted the greatest attention, is the way in which the sun's activity waxes and wanes. Thus, in the year 1913, the sun's disc was free from spots on no fewer than 312 days, and the average daily spotted area for the entire sun was only 8 millions of square miles. In 1917, on the other hand, there were no days upon which no spots were seen, and in August of that year the average daily area under sunspots exceeded 2500 millions of square miles.

This immense change in the extent to which the solar surface is disturbed does not take place capriciously, but appears to follow a progression with many features of regularity. The interval of time from one quiet period to the next, or from one very active period to the next, generally exceeds ten years, and is less than twelve; on the average, the Sunspot Cycle, as it is called, is 11.1 years in length.

When Galileo first noticed sunspots, he was not content with observing their appearance and form, and the changes which they passed through, but he measured their apparent positions on the sun's disc from day to day, and in this way proved that the spots were not dark bodies floating between the earth and the sun, but were actually upon the sun's surface. From this he learned that the sun rotated on an axis, the position of which he soon determined. Then he learned that spots were not equally distributed over the sun's surface, but were found in zones, north and south of the equator; very few, and those but small, being detected at a distance from the equator of more than 40° .

One of the most striking peculiarities of sunspots is that their distribution in latitude varies with the progress of the sunspot cycle. If we were to commence observations of the sun at a time when the solar activity was far advanced in decline, we should find that the spots were practically confined to the zone lying between north latitude 10° and south latitude 10° . Very soon, however, spots would begin to appear at about 30° from the equator, both north and south, and for a time three sunspot

zones would be in evidence—the zone on both sides of the equator which had been first seen, and a zone, the centre of which was about latitude 23° or 24° in the northern hemisphere, and a similar one in the southern. As time went on, spots would increase in number and size in the two zones last named, and would diminish in the equatorial zone, until the latter was left quite free from them, and only the two higher latitude zones would show any spots. In these, however, spots would multiply, but with an increasing tendency to form in lower latitudes. The greatest display of sunspots would take place when the mean latitudes of the spotted areas north and south would lie about 13° or 14° from the equator. After this, the spots would diminish both in size and numbers; their distance also from the equator would decrease, until in eleven years or thereabouts from the first observations practically all spots would be found within a single zone extending about 10° from the equator in both directions. This peculiarity of sunspots is of great interest and importance, as it seems to suggest that the spots must be due to causes lying within the body of the sun itself, and not to any outward influence of planets or combination of planets.

TABLE I.—*Change of the Mean Spotted Area and of its Mean Distance from the Equator during the Progress of the Solar Cycle.*

Cycle 1879–1889.			Cycle 1889–1902.			Cycle 1901–1913.		
Year.	Mean daily sunspot area.	Mean distance from equator.	Year.	Mean daily sunspot area.	Mean distance from equator.	Year.	Mean daily sunspot area.	Mean distance from equator.
		Deg.			Deg.			Deg.
1879	35	23·19	1889	53	22·43	1901	5	20·41
1880	440	19·64	1890	99	21·99	1902	46	23·87
1881	681	18·30	1891	569	20·31	1903	340	19·94
1882	1000	17·81	1892	1214	18·39	1904	488	16·57
1883	1154	13·06	1893	1464	14·49	1905	1191	13·10
1884	1079	11·26	1894	1282	14·18	1906	778	13·99
1885	807	11·77	1895	974	13·54	1907	1082	12·12
1886	381	10·38	1896	543	14·33	1908	697	10·38
1887	179	8·44	1897	514	7·96	1909	692	9·71
1888	89	7·39	1898	375	10·49	1910	264	10·53
1889	26	6·39	1899	111	9·54	1911	64	6·49
			1900	75	7·74	1912	37	8·06
			1901	24	8·49	1913	1	4·43
			1902	16	8·66			

A third peculiarity of sunspots is that a different rotation period for the sun is found according to the latitude of spots under observation. Here on the earth, the same rotation period is obtained whatever be the latitude of the observing station ; it is 23h. 56m. of time from the transit of a star across the meridian one night to its transit on the next night, whether the observation be made at the equator or at the polar circle or anywhere in between. In other words, the earth rotates on its axis like a solid body. The sun, on the other hand, so far as we can observe its rotation by means of its spots, does not rotate as a solid body, the time of rotation being shortest for the equator and lengthening out as we pass from the equator towards the poles. Thus, the mean sidereal rotation period of the sun's equator is 24·65 days, but for latitude 35° it is two days longer.

But these values for the rotation period are *averages* only, obtained by taking the means from an immense number of independent groups. If we take groups in any one particular latitude, and treat them separately, we find that they differ very widely amongst themselves, so that there is nothing unusual in a high latitude group giving a shorter period than an equatorial group at the same time, or in the same group, whatever its latitude, giving quite different values for the rotation period at different times of its life history.

It has been already pointed out that some groups of spots attain amazing dimensions. Thus, the great sunspot group of 1892 February, had a total length of 166,000 miles, the principal spot being 93,000 miles in length. The breadth of the group was 65,000 miles, and its surface was 18 times as great as the superficial area of the entire earth. The sunspot group of 1917 August was even larger. These dimensions are enormous, but when we compare them with those of the sun itself, they appear quite small. The area of the group of 1892 February was only three parts in one thousand of the entire surface of the visible hemisphere of the sun. If the group had been absolutely black, radiating to us no light or heat at all, the sun's light and heat would have been diminished by only three parts in one thousand, but as the penumbra may be taken as being about two-thirds as bright as the disc, and the umbra as one-fourth as bright, the loss of light would be little more than one-part in a thousand. It must further be remembered that not only was the loss of light due to the spot small, but the spot itself only attained its greatest dimensions on one particular day ; it was only visible

for 14 days while crossing the disc, and during the last 45 years there have only been four other spots of the same order of magnitude; of which, as it happens, two formed in the year (1917) just past. It will, therefore, be seen at once that no great power of diminishing the solar radiation can be ascribed to sunspots; it is perfectly true that many spots are large, as compared with the earth, but even the very largest can have but little effect upon the total radiation of the sun.

Further, since the bright markings of the sun—the faculae—which are largely connected with sunspots, are brightest, largest, and most numerous at the very same time when the spots are darkest, largest and most numerous, it follows that any loss of radiation from the sun at the time of sunspot maximum is compensated by the fact that that very time is the time of the maximum of faculae; indeed, the evidence appears to point to an over-compensation, so that the time of maximum sunspot activity would appear to be also the time of maximum radiation.

However great, therefore, the actual scale of the disturbances of which we see the evidence in the outbreaks of spots and faculae, their scale is so small as compared with that of the entire sun itself, that they can but represent a variation in the sun's total output of light and heat which is relatively insignificant. It is, therefore, not a very hopeful task to inquire as to whether we have any evidence of a direct effect upon the earth of these changes in the sun's condition.

Table II., which gives a comparison between the annual rainfall at Greenwich and the sunspot area year by year, shows clearly that there is no intimate connection between these two phenomena, and may be taken as typical of the result of most of these inquiries. Some slight and doubtful evidence has been adduced in favour of a dependence of Indian famines or tropical cyclones upon the spotted area of the sun, but researches on these lines have fallen into disfavour for a good many years past.

But the variations in the sun's spotted area are felt by the earth in one manner at all events. At Greenwich Observatory, for many years, and at many other observatories throughout the world, certain "magnetic needles" are kept in cellars or other suitable chambers, screened as carefully as possible from the sun's light and heat, and these respond sympathetically to the solar changes. For, day by day, there is an oscillation in the intensity of the earth's magnetism, and also in its direction,

TABLE II.

The Sunspot Cycle and Greenwich Rainfall.

Year.	Mean daily sunspot area.	Total annual rainfall.	Year.	Mean daily sunspot area.	Total annual rainfall.	Year.	Mean daily sunspot area.	Total annual rainfall.
Cycle 1843-1856.			Cycle 1856-1867.			Cycle 1867-1878.		
		In.			In.			In.
1843	95	24.47	1856	49	23.27	1867	131	28.46
1844	171	23.20	1857	201	21.16	1868	434	25.15
1845	419	22.34	1858	714	17.70	1869	972	24.02
1846	626	25.29	1859	1404	25.83	1870	2761	18.55
1847	1021	17.61	1860	1172	31.90	1871	2004	22.30
1848	986	30.10	1861	1258	20.45	1872	1462	30.02
1849	765	23.58	1862	1363	26.32	1873	766	23.36
1850	494	19.53	1863	702	19.66	1874	604	19.95
1851	683	23.53	1864	784	16.38	1875	248	27.97
1852	545	34.01	1865	407	28.70	1876	126	24.10
1853	436	29.99	1866	318	30.72	1877	108	27.28
1854	113	19.01	1867	131	28.46	1878	22	28.98
1855	64	23.59						
1856	49	23.27						
Cycle 1878-1889.			Cycle 1889-1901.			Cycle 1901-1913.		
		In.			In.			In.
1878	22	28.98	1889	78	23.28	1901	29	20.29
1879	38	31.36	1890	99	21.86	1902	62	19.34
1880	440	29.68	1891	569	25.04	1903	340	35.54
1881	681	25.72	1892	1214	22.31	1904	488	20.66
1882	1000	25.18	1893	1464	20.12	1905	1191	23.02
1883	1154	21.91	1894	1282	26.89	1906	778	24.74
1884	1079	18.05	1895	974	19.72	1907	1082	22.25
1885	807	24.00	1896	543	22.42	1908	697	23.78
1886	381	24.21	1897	514	22.13	1909	692	25.71
1887	179	19.86	1898	375	18.85	1910	264	28.06
1888	89	27.50	1899	111	22.33	1911	64	23.66
1889	78	23.28	1900	75	22.32	1912	37	24.86
			1901	29	20.29	1913	7	22.44

The sunspot areas are expressed in millionths of the sun's visible hemisphere both in this table and in Table I.

and the amount of this oscillation is, roughly speaking, twice as great during years of great solar activity as it is in years of solar quiescence. As the curves representing the areas of sunspots or of faculæ mount up, so do the curves representing the daily range of the earth's magnetism mount also; as the curves of the solar activity decline, so do the curves of the daily magnetic range.

But this is only a general relationship. There is a particular one, and it fell to my lot to trace it out. My own interest was with sunspots, not with terrestrial magnetism. But in 1882, April, a group of spots appeared on the sun much larger than any that I had seen in nine years' experience, and during its progress across the sun's disc, a remarkable disturbance of the magnetic needles took place, not at Greenwich alone, but at magnetic observatories all over the world. While this great sunspot group was crossing the disc, a second group sprang up, and another great disturbance of the magnetic needles occurred. Then, in the November of the same year, a spot was seen on the sun greater than either of these two, and again a very violent magnetic storm broke out, accompanied by a wonderful display of the aurora borealis. From that time forth, I had no doubt in my own mind that there was a direct connection between these great displays of solar activity and the great displays of activity in the earth's magnetism.

Other similar coincidences were observed; there was, for instance, a great magnetic storm in 1892, February 13, when the great group already referred to was a little past the central meridian of the sun's disc. But though sunspot observers were, in general, convinced that there was a real connection between the two activities, many of the great authorities on terrestrial magnetism took an entirely different view, and Lord Kelvin, in his annual address to the Royal Society in that very year, 1892, laid it down that the great magnetic storm could not possibly be ascribed to any solar action. Dr. Rudolf Wolf, of Zurich, the most indefatigable observer of sunspots then living, replied to the effect that if physicists said that the connection was impossible, he would not dispute it; nevertheless, he could affirm that it existed.

But the connection was not easy to establish. It often happened that a great sunspot would pass across the sun's disc and the magnetic needle would make no sign; it sometimes happened that the magnetic needles would be disturbed and the sun present

a spotless disc; though, on the other hand, there were many striking instances of apparent correspondence. At length I decided that the only possible way of arriving at the solution was to make a complete catalogue of all the magnetic disturbances from 1882 onward (in which year Greenwich Observatory began to publish reproductions of the traces of the chief storms) and to ascertain the condition of the sun at the moment of the commencement of each. To facilitate the comparison, I computed the solar longitude of the centre of the sun's disc for the time of commencement of each storm, and Table III. gives a small extract from it.

TABLE III.

List of Magnetic Disturbances.
1886, September—1887, November.

No.	Character.	Date of Commencement.	Long. of centre of sun's disc.	No. of rotation of sun.	
			d. h.	Deg.	
75	Active ...	1886, September	9 13	124·6	440
76	Active ...	October	6 17	126·0	441
77	Moderate ...	November	2 15	131·2	442
78	Active ...	„	30 13	123·3	443
79	Moderate ...	1887, February	12 18	225·6	446
80	Moderate ...	April	4 14	275·7	448
81	Moderate ...	August	1 11	143·4	452
82	Moderate ...	„	28 20	141·7	453
83	Very active ...	September	25 16	134·2	454
84	Moderate ...	October	22 15	138·5	455

The mystery was solved. Of the ten magnetic disturbances that occurred in the 14 months from 1886, September, to 1887, November, eight fell into two sets of four each, the members of the same set occurring when the same meridian of the sun was near the centre of the disc, that is to say, was fully presented to the earth. When that meridian next came round to the same position, the storm recurred. These two sets each showed a storm occurring four times at intervals of a complete rotation of the sun as seen from the earth. Further examination of the catalogue showed that similar recurrences were a feature of it. In one particular instance, brought to light by a further examination

of the Greenwich magnetic records, a storm was found to have occurred in eight consecutive rotations when the same solar longitude was on the centre of the disc, and no other magnetic disturbances took place in the intervals between them.

A little reflection showed what this implied. Lord Kelvin's objection to the supposed connection between the two activities as cause and effect was based on the assumption that the solar action must, like its emanation of light and heat, be emitted from all points of the solar surface, and be radiated equally in all directions. This would involve an expenditure of energy quite inadmissible.

But the return of magnetic disturbances at the end of a complete rotation of the sun showed that the solar action was not radiative, but of an altogether different kind. Instead of coming from every part of the sun's surface as is the case with its light and heat, it proceeded only from restricted regions; instead of being radiated equally in all directions, it travelled to the earth in certain defined directions. It was due, therefore, to the emission from certain special areas of the sun of minute particles shot out in narrow streams, which, as they rose from certain particular areas and were continually supplied from those same areas, inevitably appeared in their effect to rotate with the sun's rotation. Therefore as the sun, as seen from the earth, appears to rotate in a little over 27 days, the magnetic disturbances tended to be repeated at like intervals of time. The streams of particles from the sun overtook the earth in its orbit, and struck it on that arc of the earth's surface to which the sun was then setting.

It was already known that particles are shot off from the sun in this manner. Photographs of the corona during total solar eclipses had shown straight rays, extending from the sun in several directions, and in the eclipse of 1898, January 22, Mrs. Maunder obtained a pair of very small photographs of the corona on which no fewer than four of these long straight rays were clearly seen. The longest of these was traced to a distance of fully 6,000,000 miles. If, as is most likely, it was foreshortened in its presentation to us, then its actual length must have been so much the greater.

It has been pointed out above that sunspots are very small as compared with the sun, but very large as compared with the earth, and that the influence of spots upon the earth, though perceptible, is not of a pronounced and obvious nature. It

would therefore seem to be absurd to suppose that the earth should have any effect upon sunspots ; yet there is evidence of at least an apparent effect.

Quite early in my work at the Observatory I was impressed with the frequency with which groups of spots appeared to increase in size and compactness as they approached the centre of the disc, and to break up and diminish in size after they had passed it. This was evidently due in part to the fact that spots when near the circumference of the sun are seen edgeways—that is to say, they are not fully presented towards us as they are when they are near the centre of the sun's disc—but are seen foreshortened. But after careful correction for this effect of foreshortening, it was still found that this tendency remained for spots to be largest when east of the central meridian.

The irregularities in the behaviour of groups of spots are so great that it was impossible to come to any safe conclusion on the subject until many years' observations had been accumulated ; but in 1906 and 1907 Mrs. Maunder undertook an investigation of the problem, and found that if the sun's surface be divided into strips corresponding to the distance passed over by a spot in a single day, then, on the whole, taking these strips or "lunes" one by one, and comparing each lune on the east of the meridian of the sun's centre with the corresponding one to the west, the total spotted area in the eastern lune was always greater than that of the corresponding western lune when the totals were taken for a great number of years.

But a much more striking effect is seen when simply the numbers of spot groups and not their areas are taken. If we compare the number of groups found in the corresponding lunes east and west, the eastern lune always shows a greater number of groups than the western. Or, to put the matter a little differently, in the sunspot cycle which lasted from 1889 to 1901, no fewer than 947 groups came round the eastern limb of the sun into view of the earth, but only 777 passed out of sight from the earth at the western limb into the invisible hemisphere. During this period of 12 years, therefore, no fewer than 170 spot groups faded out in the course of their progress across the disc more than came into existence, so that the earth was apparently responsible for the extinction of about 170 groups—that is to say, of more than one-sixth the whole number that came into view at the east limb.

This predominance of east over west is *relatively* much more

obvious when the numbers of spot groups are considered than when the areas are taken, since it is the small groups that die out most easily.

The "prominences" or red flames seen round the circumference of the sun seem to show a slight, yet quite distinct, want of symmetry of the same kind, the eastern prominences being more numerous than the western, except in years when there are very few prominences seen at all.

The earth then has an influence, or, at least, an apparent influence, over the sun, since the groups of spots are, on the whole, considerably more numerous in the eastern half of the sun's disc than they are on the western half, and a similar relation is noticed in the case of prominences and of the total spotted area. Now the central meridian of the sun, dividing the eastern half from the western, is distinguished from any other solar meridian only in this—that it is central as seen from the earth. It is defined entirely by the position of the earth, not by any solar feature. Every part of the sun's surface passes in its turn under that meridian. If then spots and prominences form and dissolve, wax and wane, with some numerical relationship to the central meridian, they do so with a numerical relationship to the position of the earth as such. And that implies a causative relation between the position of the earth and this want of symmetry between the eastern and western segments of the sun as seen from it.

Yet the relation may be merely apparent. First of all, this disproportion between east and west is not very large. It is important therefore to increase—to increase very greatly—the statistics in question before we can be quite sure that we are not dealing with a relationship merely accidental and temporary. It may have held good for the period covered in Mrs. Maunder's inquiry, but may not hold equally good for other periods. Or a different way of dealing with the same statistics might have led to a different conclusion, and such re-examination of the statistics from different points of view must be made, and, no matter how great the labour, will be made when the opportunity serves, to ascertain if the discordance between east and west always holds good or not; and if not, what are the conditions under which it disappears. And if it always holds good, what then? Even in that case, it still may be merely an effect of our standpoint, some effect, if not of perspective, yet of something analogous. But we may not *assume* that this, or its contrary,

is the case; the point must be examined into and the evidence presented. Thus far, at least, all attempts to explain the apparent difference between spot and prominence numbers east and west, as due to any kind of perspective effect, have been unsuccessful. Thus far we are *at present* justified in saying that the earth does appear to have an appreciable influence on the sun in the way of damping down solar disturbances, whether they be spots or prominences.

We make this statement with all the reservations to which I have just alluded, reservations that amount to saying that the evidence, though good so far as it goes, must be increased as much as possible. But there is one reservation we do not make. We do *not* make the reservation that no amount of evidence can establish the earth's influence upon the sun, because it is impossible that so small a world should exercise an influence upon a body so great as the sun, an influence visible to us across the gulf of 93 millions of miles. Still less do we make the reservation that no evidence could establish it, because the fact itself would be morally or theologically wrong. This question, like all the questions with which the physical sciences deal, must be decided upon the evidence, quite apart from any previous assumptions.

May I remind you of the little anecdote which I quoted near the beginning of my paper of the reply of Scheiner's Provincial when he told him of his discovery of sunspots, that there could not be spots on the sun because Aristotle had not mentioned them? Another learned doctor contended that it was impossible that the Eye of the Universe should suffer from ophthalmia. You will see that the present attitude of science towards pre-conceived assumptions has not always prevailed. It does not prevail universally even now. When Mrs. Maunder was pursuing this research, she came across an artisan who was out of work, and knowing him to be a religious man and in need she employed him to carry through a number of simple but lengthy computations for her. After he had completed these, he asked what all these figures were about, and he was unfeignedly distressed when he heard the conclusion of the whole matter. "That is quite impossible," he said, "for the sun is the type of our Lord Jesus Christ, and we cannot conceive that the earth would be permitted to have any effect upon that which is a type of Him." You see, therefore, that the attitude of the Jesuit Father 300 years ago is not unknown amongst some good and pious people

at the present day. I may mention two other instances. A friend once sent me a pamphlet written to prove that the earth was flat. When I told her, as I was bound to do, that it was rubbish, she said: "Oh! I am so sorry to hear you say that; it seemed to me so exactly to agree with the Bible." Again, I have known a Christian minister who objected strongly to the practice of astronomers of assuming in their first calculations of the orbit of a new comet that the orbit was parabolic. "They ought," he said, "to assume that it is circular, because the circle is the perfect figure."

A great many years ago, when I was new to scientific inquiry, a leading biologist, himself a believer in Christianity, the father of one of my schoolfellows, said to me, "Religion has come into conflict with Science three times over; and three times over Science has been the victor. Religion has had to lower her flag, first to astronomy, next to geology, and now to biology." In one respect this venerable old man stated the case wrongly. In none of the three cases was it really a contest between Religion and Science; it was a contest between the Science of the Past and the Science of the Present. But the reputation of Religion suffered enormous loss, because those who stood forth to champion it declared that the Science of the Past derived its sanction, not merely from observation and reasoning, but from the authority of Holy Scripture, and that therefore it was infallible and unchanging.

I will not debate the questions of geology and biology; these are not my branches of science. But there is no doubt that in the case of astronomy 300 years ago those who spoke in the name of Christianity denounced the discoveries of Galileo as contrary to the teaching of Holy Scripture, and the condemnation of Galileo has been made a reproach to Christianity ever since. Well would it have been had they listened to the wise counsel of the greatest doctor of the Church then living—Cardinal Bellarmine—who laid it down that if the facts which Galileo asserted were established they would have to admit—not that Holy Scripture was in error—but that their interpretation of it had been faulty.

Galileo taught that the Earth moved; the Holy Office declared that the opinion of the motion of the earth was contrary to the Holy Scriptures. Really they had learned the doctrine that the earth was immovable from the astronomer Ptolemy, who was a heathen, and not from the Bible at all; but having learned the

doctrine from Ptolemy they proceeded to identify it in the Bible also, and the Holy Congregation of the Index of 300 years ago has faithful analogues even amongst Protestants at the present day.

If any of us believe that the Bible was meant to teach us the physical sciences, and that the most literal interpretation of its words is the most authoritative, then we must admit that there is no scientific fact more plainly taught in it than that the earth is immovable, and that the sun does move round it. But none of us now interpret any passage of Scripture in this sense. If the earth is spoken of as being immovable, it is understood that the sacred writer is simply using the ordinary language of the day without any reference to a scientific controversy at all.

Surely then the Papal authorities of 300 years ago were putting Holy Scripture to a wrong use when they tried to support a theory of physical science not by observation and experiment, but by claiming that the theory was taught in the Bible. The Scriptures never claim such a purpose for themselves, but a different and a far higher one. "All Scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness, that the man of God may be perfect, thoroughly furnished unto all good works."

If we wish to learn about natural objects, we must go for instruction to the natural objects themselves. If we wish to learn of spiritual things, of the things of God, it is to God Himself that we must go for instruction. And He has revealed Himself in His Son and in the Written Word. It is true, not only of the Gospel of St. John, but of all the books of the Bible: "These are written, that ye might believe that Jesus is the Christ, the Son of God, and that believing ye might have life through His Name."

The Meeting adjourned at 6.20 p.m.

THE 597TH ORDINARY GENERAL MEETING.

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL
WESTMINSTER, ON MONDAY, MARCH 4TH, 1918, AT 4.30 P.M.

A. W. OKE, ESQ., B.A., LL.M., TOOK THE CHAIR.

The Minutes of the last Meeting were read and confirmed.

The HON. SECRETARY announced the election of Dr. A. H. Burton, Miss C. Pearce, and the re-election of the Rev. W. D. Sykes as Members; and of Theodore Roberts, Esq., W. Hoste, Esq., M.A., W. Dale, Esq., F.S.A., F. S. Forbes, Esq., J. T. Galathan, Esq., R.E., J. R. Christie, Esq., M.A., and R. Lindley, Esq., as Associates.

The death was reported of Brigadier-General the Hon. F. C. Bridgeman, an Associate.

The CHAIRMAN then called on the Rev. H. J. R. Marston to read his paper on "The Reserved Rights of God."

THE RESERVED RIGHTS OF GOD. By the REV. H. J. R. MARSTON, M.A.

I HAVE no intention of delivering a Theodice. The task attracted both Milton and Leibnitz. We may agree that neither of these great men was very successful in the attempt to "justify the ways of God to men." We may make that concession without for a moment admitting that Voltaire, in his profane and licentious ridicule of the "best possible world," was any more successful than was the philosopher whom he lampooned.

The truth seems to be that Theodice, on formal and set lines, is a task beyond our powers; and may even degenerate into a sort of spiritual impertinence, born of zeal not according to knowledge. The Bible is certainly not friendly to the attempt. The *Book of Job*, though it allows the utmost freedom of speculation and of speech about the ways of God among men, ends in the confession of the Patriarch: "I abhor myself, and repent in dust and ashes"; as if he should say: I abandon my attempt

to justify God, since I have come to learn how deeply I need to be justified myself."

St. Paul, in the *Epistle to the Romans*, having surveyed the course of history and the order of Creation, instead of attempting to justify the enigmas of the world, leads us to contemplate the wonders of Redemption, and to hope for the manifestation of the sons of God, when the Creation shall be liberated from the bondage of corruption, and brought into the liberty of the glory of the redeemed.

It appears from these two samples of Biblical thought that the purpose of the Holy Spirit, alike in the Old and the New Testaments, is rather to point out the way in which God justifies man than to show how man may justify the ways of God.

I aim in this lecture to demonstrate that there are certain rights in God, in virtue of which He withholds from the ken of His intelligent creatures some things which we have a desire to know; that it is possible that those things may never be wholly known to us; and that, in thus withholding this knowledge, He acts conformably to His character. Hence we may rest in that character without feeling any sense of injury, and in a certain measure of what may be called ignorance.

It is quite compatible with Christian confidence in the faithfulness of God to assert that there may be matters which do not come under the consoling assurance, "What I do, thou knowest not now; but thou shalt know hereafter." While the Christian clings, with a tenacity which nothing can move, to St. Paul's declaration, "Now I know in part, but then shall I know even as also I am known"; yet even that future, and that purer knowledge, may be a growing knowledge and may never exhaust all the treasures of wisdom and knowledge that are hidden in Christ.

I shall endeavour, then, to show that there are two rights reserved to Himself by God. The first of these is the right vested in His Omniscience, of limiting the powers, opportunities, and attainments of His creatures in regard to many portions of His dealings with them. The second is the right vested in His Creatorship, of disposing of His creation at will—that is, of course, according to His will, conditioned by His perfections, and not arbitrarily.

This double right in God flows from His Sovereignty. When the New Testament speaks of God as "the blessed (blissful) and only Potentate," as "the King of kings and Lord of lords,"

it does but express a feeling which is indelible in the human breast. Sovereignty is felt to be a constituent in the very idea of God. A God who is dependent, limited, confined within even His own laws, is no God at all. How deeply this thought is ingrained in men's minds may be seen by the testimony of the Attic Drama. Nowhere is it expressed more unmistakably. *Æschylus* and *Sophocles* do, indeed, use the jargon of polytheism, but they are penetrated by a profound conviction that there is somewhere a sovereign something, if not a sovereign someone.

In a noble passage in the *Prometheus* *Æschylus* beautifully expresses this conviction. He says: "Never shall the wills of mortals pass beyond control of Zeus." The same sentiment pervades the spirit of *Virgil*. Even a whimsical and one-sided thinker like *Mr. Wells* attests how deeply men feel the truth of God as sovereign, for he entitles his recent book, "God the Invisible King."

Now, the shrine and oracle of this idea is the Old Testament. The thought of Divine Sovereignty was nursed and developed by the institutions and vocation of the chosen people. The great truth is no soft and sickly exotic transplanted into the soil of Israel from *Babylon* or *Nineveh*; it was deposited in the mind of the people by the hand of God himself, and was unfolded with sacred and salutary richness in the course of their history, and by the very genius of that wonderful race.

The political spirit of the Old Testament is democratic and progressive. Israel's eye of hope looked stedfastly to a golden future, and not wistfully to a golden past. When Israel came out of *Egypt*, and the house of *Judah* from among a strange people, *Moses* became the leader of a rudimentary democracy. *Samuel*, the last of the popular saviours of the tribes, and the founder of the prophetic order, resisted and deplored the coming of a king. *David*, the man after God's own heart, who remains to this day the ideal monarch of Israel, and who is the type of a future Royalty, was anointed and acclaimed by the two sections of his nation "as bone of our bone and flesh of our flesh"; and is described in a glowing passage in the *Psalter* as one "chosen out of the people."

The record of the monarchy in Israel is disappointing. Most of the kings, whether in Israel or in *Judah*, were either weak or bad, or both. *Hezekiah*, the most earnest and dignified of the successors of *Solomon*, deserves his eminence, because he

diligently followed the instructions of Isaiah, not because he pursued a policy recommended by his royal predecessors. The greatness of the soul of Israel was cherished, not by kings, but by prophets, who leaned on the suffrage of the hearts of the believing portion of the community. Isaiah and his beautiful pupil Hosea, Jeremiah and Zechariah did far more to mould the theology and the faith of the nation than did any of the occupants of the throne.

In such conditions did the idea of the Sovereignty of God reach its fruition. In the fulness of time it passed into the teaching of the Lord Jesus Christ, and became a solid part of Christianity itself.

The Sovereignty of God, as delineated in the Bible, contains four constituent elements. The first is *Originality*, or the element of origination. This is the teaching of the first chapter of Genesis. The second is that of *Judiciality*, the element of rectitude, that cannot be corrupted, diverted, intimidated, baffled. This is the teaching involved under the grand dictum of Abraham: "Shall not the Judge of all the earth do right?" The third is *Affinity with the Meek*. This is taught by our Lord when he thanked the Lord of heaven and earth that He had revealed the truths of the Gospel to babes. The fourth is the element of *Fatherhood*, for the same passage reminds us how that the Lord of heaven and earth is also the FATHER.

According, therefore, to Scripture the ideal sovereign may be defined as transcendent personality, possessing to infinite degrees originality, justice, humility and love. To a self-complacent sceptic like Goethe, this idea of God as a sovereign was only one way of conceiving of the Divine being, a way suited to servile natures, seeking for a sort of prop for their own felt weakness. He would have pointed to it as a thought eminently agreeable to the court chaplains of Louis XIV, prone to ascribe to the Almighty the qualities which they lauded in their master, who hired their eloquence to flatter and conceal his crimes. Such a view of sovereignty has in our unhappy day been used to support the wickedness of the supreme war-lord of Prussia, and to excuse his own infamous doctrines of war in spite of every moral law.

These, however, are only travesties of the Biblical truth. They are not Biblical in origin or scope. They are condemned by the very history of that doctrine as I have just traced it in the Old and New Testaments. They excite nowhere so strong

an antipathy as in hearts animated by the spirit and doctrines of the Gospel.

But it is not only the origin and history of this idea in the evolution of Israel which liberated it from defiling admixtures. The idea itself has proved its own purity and force by two notable effects which it has produced in the Christian consciousness. It was on this idea that St. Augustine, amid the world-débâcle that followed the fall of Rome, erected the system of the City of God. For many generations Christian thinkers nursed the hope of the Church on that model. The mediæval system had, indeed, many grievous faults, and inflicted on mankind many grievous evils. Yet it sustained, through ages of barbarism and ignorance, a scheme of things which in due time gave birth to a better state. This mediæval system rested on the doctrine of God as sovereign in grace and government, and from that fountain flowed all that was true and clean in the life of the Church for centuries.

The Reformed Church, when she was menaced by the reactionary sophistries and immoral casuistries of the Jesuits, was saved from dissolution by the genius of Calvin, who gave to it a cohesion and a logical compactness that proved irresistible. The teaching of Calvin, as all men know, was based on the Sovereignty of God. There must be inestimable preciousness in a doctrine which enabled St. Augustine to save Christian society from the deluge, and which enabled Calvin to save for modern democracy the principles of personal liberty. This great doctrine created the nobler parts of the world-embracing Church of the Middle Ages; and from the same doctrine was derived the spirit and the character which produced the United States of America.

It is reasonable, then, to expect from a truth that has been so immensely beneficent, in politics and society, consolation and refreshment in the philosophy of the human heart and mind. In the midst of vast disorders to-day the world is in quest of comfort and interior repose. People ask two questions—What does this all mean? What is this vast upheaval and dislocation for? To what is all this vast cost, endurance, self-sacrifice, energy, invention, directed? Now, it is probable that no one can answer this question so clearly or so completely as to satisfy all minds. Yet to all minds there may come, I think, a certain measure of real repose from the reflection that God knows all. It may or may not be true that some day He

will clear it all up. But He knows the meaning of it all now.

This is not blind-man's buff in the universe. The all-knowing God sees far; all forces are within His ken and His control. The total effect is beyond my arithmetic, but it is not beyond the calculus of Omniscience. The reflection is to some degree an intellectual anchorage amid the depths of the world-flood that threatens to engulf all security of thinking or of trust.

The second question that is in many hearts is this, How can we believe in a Divine Fatherhood at all that can complacently endure the mass of misery—mental, moral, physical, social, national—that now exists in the world. No face, no form of ill, is wanting to the picture. Death, mutilation, outrage, destitution, flight, famine, fire, and wounds, are all horribly familiar. To these are added desolation of heart, irreparable hopelessness, long-drawn suspense, hourly shock and stress of nerves, scarcity of food, and innumerable minor discomforts. Waste in substance, loss in art, diminution of energy, lowering of health, decline of faculty, chaotic change of plan—these are present on top of all the rest.

Again, it must be said that the solution is not with us. Yet, again, it must be said that the truth of the Divine Sovereignty does help us. It appertains to the sovereign God to dispose of the creatures of His hand absolutely at will. That will is a will of sovereign love, but it is the Sovereign Will of one who made all things for itself and for themselves.

Nothing is further from my intention than to offer this answer in the spirit of old-fashioned Calvinism. I believe to the full in the rights of the human heart to question, to mourn, to complain, in the tenor of the psalm. To soothe and mollify hearts tortured by doubt and lacerated by bereavement, one must begin by the sympathy that understands, and the reverence that acknowledges. Yet in administering the consolation which they need, one finds some strength in the doctrine that the God of all is a sovereign and faithful Creator; and that nothing can alter the elemental truth, "It is lawful for Him to do what He wills with His own."

The tempered and balanced view of sovereignty just expressed, will not please some. It involves consequences that do not belong to the present lecture. It is prior to, and independent of, any dealing of God with sin as such. It necessitates a happy issue to all out of their afflictions unless they will not have it so.

It is remote from all stoic indifference to human nature's rights, and to all the brutal socialism of the Prussian war-school. It is sovereign might arrayed on the side of the meek and the kind. But it is sovereignty.

Two ultimate rights then disclose themselves to the reverent student of the Divine Sovereignty, as portrayed in the Bible and imaged in the human heart. The first is *the right of mystery*; the second is *the right of disposal*. Under the former right we see how God withholds from us certain elements in His acting and governing. This does not mean that we are to distrust the findings of reason or of conscience where we are able to exercise these faculties. It does mean that there are situations in which these faculties are not able to pronounce a final verdict. This appears to be the meaning of the noble saying of the Apostle: "Making his home in the light that no man can have access to." The right of mystery is, so to speak, natural to God's Omniscience, and is not a decree morally imposed.

The effect of recognising this right of mystery should be to stimulate inquiry, not to check it, and at the same time to save us from disappointment when we reach the end of our mental tether. He whom we know truly, and who knows all things perfectly, though He has not made us consorts of his omniscience, yet approves all true science, and does not disdain our inevitable nescience.

I close this section with the words of Vinet:—

"If there were no obscurities, the heart would leave all to be done by the mind. To know that we cannot know, is already knowledge."

The saying of our Lord, near the close of the beautiful parable of the Labourers in the Vineyard, most perfectly expresses the right of the Divine disposal. The disposing power, which I have outlined and vindicated, is not an arbitrary decree irrespective of human considerations. It is an absolute prerogative, indeed; but a prerogative always exercised with the fulness of the Divine Philanthropy. "Is it not lawful for Me to do what I will with Mine own?" is an expression of Christ's will to deal largely and sweetly with the least meritorious or fortunate of His labourers. It furnishes the key to the dark saying that there are "first that shall be last, and last that shall be first."

Nothing can divest the Sovereign Will of its proprietary rights. The lowest and meanest of its possessions is under the keeping care of the Supreme Disposer; it remains His own for ever.

That this must throw some blessed and solemn illumination on the problems of ultimate destiny, is certain; even though it remain uncertain what those ultimate things shall be. The preciousness of this right of disposal consists just in this, that **WILL**, not *chance* or *fate*, has the last word in things. That Will, moreover, is the Will of Eternal Love and Divine Proprietorship.

There is a sentiment proper in us toward each of these rights of God. The proper sentiment toward the right of mystery is that of relief. The sentiment proper to the right of disposal is reliance composed of resignation and of hope. The faithful Creator cannot go back on Himself. He is steadfast to His nature, and to His purposes. As He is greater than man, so has He ordained that man shall be the greatest of His creatures, the master, priest and spokesman of them all.

In what has been now advanced, I have made no attempt to offer a complete solution of present difficulties. I have faced them all and fully. Yet I submit that, by frankly acknowledging the sovereignty of God, as it is set out to us in Christ's revelation, we gain a certain vantage ground for the soul, amid the tragical perplexities of the time. We become aware of the greatness of Him with whom we have to do. We come to rest in His character and not in His light alone. We find that He is greater than His ways, and worthy of confidence, even where He cannot be explained. Even if He should never vouchsafe a complete elucidation of Himself at all points, we yet have hope that since He knows all we can afford to remain partly ignorant; and since He owns all He will not let one thing fall to the ground that claims of Him its rights.

A Vote of Thanks to the Lecturer was moved by the CHAIRMAN, and seconded by Dr. SCHOFIELD; and after brief remarks by Professor LANGHORNE ORCHARD, the Revs. JOHN TUCKWELL, G. B. BERRY and J. J. B. COLES, followed by Messrs. M. L. ROUSE and SIDNEY COLLETT, the Resolution was adopted with cordiality.

The Lecturer having briefly acknowledged the vote, the meeting adjourned at 6.10.

598TH ORDINARY GENERAL MEETING,
HELD IN COMMITTEE ROOM B, CENTRAL BUILDINGS,
WESTMINSTER, ON MONDAY, MARCH 18TH, 1918,
AT 4.30 P.M.

DR. A. T. SCHOFIELD IN THE CHAIR.

The Minutes of the previous Meeting were read and confirmed.

The HON. SECRETARY announced the election of the Rev. Thomas Llewellyn Edwards as an Associate, and the deaths of Miss A. R. Habershon and Prof. S. E. O'Dell, Associates.

The CHAIRMAN called on Major W. McAdam Eccles to read his paper, entitled "Why we Die." The paper was illustrated by lantern slides.

WHY WE DIE. By Major W. McADAM ECCLES, M.S. (Lond.),
F.R.C.S.Eng., R.A.M.C., T.

DEATH has always been an enigma, a fascination or a horror. The war has forcibly brought the fact of death into many a household where its appearance was scarcely thought of four years ago, and the question why we die deserves investigation.

THE FACT OF DEATH.

Physical death was a fact long before man's transgression, and cannot in any way be connected therewith. Death of the living is a universal mundane law, and is of the highest utility. Dissolution of the animal body must not be conceived as other than a most beneficent occurrence. The human body dies in order that many another human body may live. Death is a necessary factor in the continuance of life. The sacrifice of life means the maintenance of life.

The circumstances which surround death both in the animal world and human environment may be distressing and in many instances tragic; nevertheless the beneficial purpose of the death still holds good.

The fact of death is often difficult to prove. An animal may consist of a single living cell, as an amoeba; or of a few hundred cells, as an hydra; or of many, many millions of cells, as a man.

When an animal possesses a large number of cells these become differentiated and grouped into tissues, such as skin or muscle, and these tissues are again co-ordinated to form organs, such as the heart.

The more highly developed the cell, the more delicate it is, and the more prone to dissolution it becomes.

All animal cells may roughly be said to require inorganic and organic matter for their existence and growth. The inorganic matters are represented by water, salts, and some elements including oxygen, nitrogen, carbon, phosphorus and sulphur. The organic matters chiefly consist of albumins, such as are found in vegetable and animal tissues, used as foods.

A portion of a highly organized animal body may be separated from the rest and its cells kept alive for some time. Such a circumstance may be indicated by the movements of the excised heart of a frog, by the reflex action of the foot of a frog scratching the irritated side of its body after the removal of its head and therefore brain, or the contraction of muscles in an amputated human limb.

The only reliable sign of death is decomposition, which is the process of the return of the once living and highly developed animal cell to its constituent elements. It will now be seen that death, and its natural consequence dissolution, is beneficial. Therefore death of human beings is necessary in order that others may live; for had no human being died since Adam and Eve appeared, the earth would have become so populated by reproduction that an absolute absence of food would have occurred and universal death would have resulted.

THE CAUSES OF DEATH.

Physical death may be brought about in one of three ways, viz. :—

1. Accident.
2. Simple wearing out.
3. Action of micro-organisms.

Not infrequently two of these may be combined.

DEATH BY ACCIDENT.

The term "accident" is here used in its widest sense. In many instances the circumstances which lead to a human being's death are called accidental when in reality they are due to gross

carelessness. An example is as follows :—A man passes through an open lift-well gate and falls to the bottom of the well, and is killed instantly. His death is said to be from an “accident.” It was, however, occasioned by culpable negligence. The lift-well gate should only be capable of being opened when the lift is level with the gate ; no one should have left the gate open, and the man who passed through the open gate should have looked where he was going.

Therefore, “accident” as a cause of death may be classified as :—

- (a) “An act of God.”
- (b) Unintentional accident.
- (c) Intentional accident.
- (d) Gross carelessness.

DEATH BY “ACT OF GOD.”

Death caused by a so-called “act of God” is said to occur in the circumstances when human lives are lost by a ship foundering in a terrific gale, or when a man is struck dead by lightning. Whether it is right thus to attribute death to the Almighty may be open to dispute, but it is a type of unforeseen death over which finite man has little if any control.

DEATH BY UNINTENTIONAL ACCIDENT.

A certain number of deaths occur in civilian life by unintentional accident, that is, occur purely accidentally. A good example of such a death is from drowning while bathing, cramp seizing the swimmer. But death thus occasioned must be looked upon as being uncommon. In war the number of deaths from this cause goes up by leaps and bounds. A man happens to be in a certain spot and a bullet strikes him dead by traversing his heart ; if he had happened to be ten yards away, he would still be alive. A body of men happen to be over a mine just at the time it is exploded, and half of them are killed, the other half escape. A torpedo strikes a ship ; those actually within the spot struck are killed, all the others on board are saved, and so on. Deaths from wounds may, of course, be dependent upon other causes than the actual missile, as will be discussed later.

DEATH FROM INTENTIONAL ACCIDENT.

This is only another name for suicide. A man deliberately ends his life by a revolver shot. His death is accidental though premeditated. He would not have died then were it not for

the bullet; he might not have died then had it not been that the bullet struck a vital organ. His death was accidental, but it was an intentional accident.

DEATH BY GROSS CARELESSNESS.

This is perhaps the commonest cause of death by "accident" in civilian life. It is the cause which so frequently leads to prosecution or litigation, as it is so often a crime, or an event presumably calling for compensation.

Quite recently damages were awarded to a widow on account of the death of her husband through an "accident" arising from and in the course of his work; but common sense would seem to show that this so-called accident was in reality gross carelessness, not only on the part of the deceased himself but of a second party. The man was a porter in a large warehouse. Another workman had left open the trap-door into a cellar; the deceased, although on several occasions warned not to do so, entered the floor in the dusk, and fell through the trap-door, with fatal consequences. If he had taken heed to his warnings, and his fellow-workman had not been careless about his duty of closing the trap-door, no "accident" would have occurred: thus his death cannot be put down to anything except gross carelessness. One of the most distressing types of this culpable negligence leading to so-called accident is the all-too-frequent instance of a small child burnt so severely as to die, the cause being that the child was left unattended in a room in which was an unprotected fire. Many other such fatal accidents might be instanced, but the above suffice to indicate the need there is for greater care in many departments of life. The "Safety First" campaign shows the necessity for the instruction of the public. Some of the "trite sayings" seen on the 'buses in London are so "topical" as to be remembered easily, and they are having a definite effect in minimising the number of accidents.

DEATH FROM SIMPLE WEARING OUT.

This is a rare cause of death. Probably in many cases the "wearing out" is actually produced by disease, frequently by the toxin formed by a bacterium, and only occasionally by such a process as occurs in a machine when due to friction. The human machine is a very intricate one, and parts of it are constantly at work; and it is marvellous that it lasts so long. Take the heart, for example. This beautiful pump works regularly and without

intermission; if it did not, the whole machine would come to a standstill.

The heart "beats" normally 72 times in each minute, a little more often than once a second. An easy calculation proves that it beats 4320 times an hour, 103,680 times a day, and no less than 37,843,200 times a year! Yet it will go on working for 70 years without wearing out! Of course the heart is a living structure, and unlike an inorganic machine, such as an engine, it is being constantly invigorated by nourishment, which is very different from the extraneous oil lubricating a machine. But the heart, just like an engine, will not stand being tampered with. If grit be allowed to find its way into the delicate parts of an engine, irretrievable damage may ensue. Just so if a poison is continually reaching the heart by the blood its muscle will "wear out." One very common poison to act in this way is alcohol. Taken by the mouth, absorbed into the circulation from the stomach, carried by the veins to the heart, it permeates the delicate muscular fibres, and causes them to "wear out," and to cease working sooner than they otherwise would.

DEATH BY THE ACTION OF MICRO-ORGANISMS.

Another law of Nature is that a dead body shall be resolved into its constituent elements. Such a dissolution is brought about by the action of parasites. From this separation of highly complex animal matter into the elemental material of which it is formed, the growth of other living beings is permitted; and thus again the law of dissolution, like the law of death, is a most beneficent one.

Bacteria.

But there are parasites which actually bring about death before their colleagues can occasion dissolution. These parasites are in the main microscopic living creatures, some of them so minute as to require some of the highest powers of the modern microscope to detect them. The varieties of these organisms are many. Some of them are quite harmless to the human body, while others if they get a foothold will kill in a few days or even a few hours. Many of the pathogenic organisms belong to the vegetable kingdom: are plants, in fact, of the type of fungi, and are termed bacteria. They are three readily differentiated forms:—

1. The coccus. 2. The bacillus. 3. The spirillum. The *coccus* is a minute spheroidal bacterium. It multiplies extra-

ordinarily rapidly by mere division. There are two chief cocci which are pathogenic in man :—

- (a) The taphylococcus, so called because when these cocci divide, the colony formed holds together like a bunch of grapes.
- (b) The streptococcus, so called because when these cocci divide, the colony formed holds together like a string.

The *bacillus* is a minute rod-shaped bacterium. It multiplies either by fission, or by spores. There are many varieties of bacilli which are pathogenic in man, for example :—

- (a) The tubercle bacillus, producing numerous lesions, including phthisis.
- (b) The enteric bacillus, producing enteric or typhoid fever.
- (c) The tetanus bacillus, producing tetanus or “lock-jaw.”

The *spirillum* is really a curved bacillus, and is but rarely pathogenic in man.

All types of bacteria tend to kill their host by the production of toxins. These are specific poisons produced by the bacteria during their life and reproduction in the living tissues. These toxins are either intracellular, remaining closely associated with the bacterium and acting locally, as is the case with the tubercle bacillus, or extracellular, passing into the blood or lymph stream, and acting distantly from the bacterium as is the case with the tetanus bacillus.

There are two ways in which the human tissues are able in many cases to withstand the onslaught of bacteria.

The tissues, especially the white cells of the blood, actually kill the bacteria ; it is, in fact, a pitched battle between cell and parasite. Or there is produced in the blood an anti-toxin which neutralises the toxin, just as in chemistry an alkali neutralises an acid. An antitoxin can be artificially prepared outside the body ; and on being injected it often serves its purpose, and renders the toxin harmless.

THE WAR AGAINST BACTERIA.

It is wonderful, seeing the multitude of bacteria that surround the human being, that the tissues are able to withstand them. It is only when the phagocytes—the special white cells of the blood—are fit, and therefore able to do their duty efficiently, that the blood is able to overcome the bacterial invasion. Any condition which makes these cells feeble, is a menace to the human

organism. One of the most interesting poisons which makes the action of the phagocytes inefficient is alcohol, and what appears to be a very small amount (0·1 per cent.) of this drug actually in the circulation is sufficient. In a recent official pronouncement* the following occurs :—“ The relation of alcohol to infective disease is of a somewhat similar kind : the chronic poisoning, by devitalising the tissues, lowers the defences of the body against microbial invasion : consequently, specific germs, such as those which cause pneumonia and tuberculosis, as well as the ordinary microbes of septic inflammation and blood-poisoning, find a suitable soil. A slight general depressing influence—a chill or a local injury—which would have no harmful effect upon a healthy individual, even if the micro-organisms were present, because the vital reaction of the living tissue would prevent a general infection, may be most dangerous to a chronic alcoholic. It has also been suggested that resistance to infective disease may be prejudicially affected by alcohol when taken in even moderate and occasional doses ; but the experimental researches by which it has been sought to establish this view have not given any clear results. On the other hand, there is no evidence for the popular belief which attributes to such doses of alcohol a protective value in cases of exposure to infection.”

IMMUNITY.

There is another extraordinarily interesting question in relation to the action of organisms in producing disease, and possibly fatal disease in the human being—the question of immunity. It is well known that certain animals are immune against the effects of certain pathogenic micro-organisms, while others are not ; that is, an organism which would cause no ill-effects when introduced into the circulation of a horse would kill a man. Immunity is a subject about which little is really known, but the fact that the human being can be rendered immune against pathogenic micro-organisms is one of intense practical importance. Here are some statistics which put this matter very forcibly, especially as they bear upon the present war. In the Napoleonic Wars, just one hundred years ago, the percentage of deaths from disease—mostly preventable disease—was 97, and from death on the battle-field 3. In the South African War there was an average

* *Alcohol : Its Action on the Human Organism.* London : H.M. Stationery Office, 1918.

strength of 265,000 men in the British Force. There were 22,450 deaths from disease, of which typhoid fever caused 7991, or more than one-third. Only 8590 were killed by the enemy, so that more than two and a half times as many men died of disease than were killed by missiles.

In the present War, in France, the incidence of disease has been extraordinarily low, and that of typhoid fever almost negligible. This remarkable absence of typhoid among the troops on the Western Front, that is, in France, where typhoid is by no means infrequent in the civil population, is almost entirely due to protective vaccination.

Among the Expeditionary Force in France and Belgium about 98 per cent. have been protected by anti-typhoid vaccination. Up to October 25th, 1917, the annual typhoid admission-ratio per 1000 has been nineteen times greater among the non-protected than the protected. Among the non-protected, it has been 9.4 per 1000, while among the protected only 0.5 per 1000. The death-ratio is 84 times greater. Among the non-protected, it has been 1.69 per 1000, while among the protected only 0.2 per 1000. Such figures are illuminating, and bear out fully the fact that specific vaccination is not only the most powerful prophylactic measure against the incidence of typhoid fever, but the most potent preventive of death therefrom.

A similar condition obtains, and has been in force for many a year now, in the ordinary vaccination against small-pox. There are other reasons, such as improved sanitary measures, better housing, and greater care in preventing contact with infected persons; but giving all these their due weight, no unbiased observer can ignore the tremendous influence of vaccination in both lessening the incidence of the disease and fatal results therefrom.

WOUND INFECTION.

While the soldier has been so wonderfully protected against enteric fever, he has been exposed, particularly in France, to infection of his wounds by the numerous bacteria which exist in the highly manured and cultivated soil in which the trenches have been dug. Imagination does not need to be great to understand how, when a missile strikes a soldier, it will carry in with it "dirt" from the air, ground, clothing, and skin, so that bacteria—part of this "dirt"—are introduced into the man's living tissues. The bullet may strike a vital part, and the combatant is killed at once; this is death by accident. The shrapnel may

lodge in the muscles of the thigh, and the pathogenic organisms introduced induce septicæmia—blood-poisoning—and death results. This is the death by the action of micro-organisms, or perhaps, strictly speaking, it is a death by both accident and the action of micro-organisms.

An attempt is made by the man immediately after he is hit to prevent infection by applying a spirit solution of iodine to the area of the wound, and covering the aperture with an antiseptic dressing. Every soldier carries this antiseptic and this field dressing. Unfortunately only a comparatively small proportion of cases are either sterile from the first, or are rendered so by the first-aid application. At the casualty clearing station, behind the regimental aid post, many wounds are excised, and in this way the actual infected tissue is removed.

There are three chief types of organisms which infect wounds and lead to fatal issues. They are: streptococci, the bacillus producing "gas gangrene," and the bacillus of tetanus.

(a) *Streptococcus*, or the coccus which forms chains when it multiplies, is very virulent. Introduced into the tissues, these cocci multiply very rapidly, and pass into the circulation. They are capable of producing very potent toxins, so that the delicate muscular tissue of the heart, and the sensitive nervous tissue of the nerve centres, are quickly poisoned; and ceasing to work, death ensues.

There is always a high temperature, and a quick pulse, with increasing exhaustion. Once these minute vegetable parasites get a hold it is very difficult indeed to cope with them.

(b) *Bacillus aerogenes capsulatus*, or the bacillus which is the chief agent in the production of "gas gangrene," is also very virulent. Unlike the streptococcus, this bacillus grows and multiplies best in the absence of oxygen, and therefore of air. Hence its rapid and fatal activity when pent up in the tissues. Within a few hours gangrene has occurred and the patient is so poisoned as to become moribund. Fortunately easier and more thorough treatment in the way of wound-cleansing has led to a great diminution of gas gangrene.

(c) *Bacillus tetani*, often called the "drum stick" bacillus, is the cause of tetanus, or lock-jaw. It is an interesting point that it is found chiefly in garden mould, especially when this has been richly manured, and in road sweepings. Hence the great liability for wounds received by men in trenches to become infected. The clothing of the soldier very commonly holds these

bacilli ; he is struck by a piece of shrapnel, this and some clothing enter his tissues, and the wound is infected. In the early days of the War, tetanus was all too frequent and deaths therefrom numerous.

Now the disease is comparatively rare, and this although the men are fighting under the same conditions of trench warfare as they were in France and Flanders in 1915. What has caused this great diminution of incidence of, and therefore mortality from, tetanus ? It is undoubtedly the fact that every wounded man now receives a protective injection of antitetanus serum, and most a second dose about seven days later. As a result of these, the bacilli fail to multiply, and no lock-jaw occurs. Anyone who has seen the spasms of tetanus, and the terrible death which closes the scene, will be ready to bless the marvellous effects of these prophylactic doses of serum.

CONCLUSION.

Enough has been said to show that the intricate machine—the human body—withstands a great deal which should cause its activity to cease. Its powers of resistance, its capabilities for recovery, and its response to external help, all tend to prolong its life. But a sudden, unforeseen catastrophe may overtake it, and its vital parts are affected, and it stops its functions and disintegrates—it has died by accident. Three-score years and ten go by, and gradually there seems to be a failure in the perfect movement, and in the nice co-ordination of parts, and the functions slow down until they stop : the body has worn out, death has occurred from old-age, from wearing out. These two causes of dissolution, however, only account for a small proportion of deaths. It is to the action of parasites, vegetable or animal, that the bodily economy has so often to surrender.

The fight may be short and sharp, and the defeat rapid ; or the struggle may be prolonged and suffering great ; but the same beneficent law holds sway, and the being dies and his tissues resolve into their elements, and another rises in his place.

“ Except a corn of wheat fall into the ground and die, it abideth alone : but if it die, it bringeth forth much fruit.”
“ O death, where is thy sting ? O grave, where is thy victory ? ”

DISCUSSION.

The CHAIRMAN: Major Eccles has raised in the title of his Paper a most important question—a question which he certainly has not answered. This is no reflection upon the lecturer, who well knows that the ultimate “*why*” of anything can never be answered scientifically; and the question “Why we die?” has never been answered outside the Bible. I have a standard work on “Death,” by Carrington, of nearly 600 pages, in which it is shown that the author asked the question “Why we die?” of every scientist he could refer to, from St. Petersburg to New York, and was himself surprised at the entire lack of all knowledge on the subject. The only suggestion he got was that perhaps we die from *habit*!

The problem, of course, is that in man, growth, when the anabolic exceeds the katabolic, has a fixed period, say, of twenty-five years. For, say, forty years, apart from accident or disease, there succeeds a spell of adjustment between katabolism and anabolism—decay and repair; but after that, for some unknown reason, decay gradually exceeds repair and brings death. No scientific reason is known for this.

I speak here only of natural death. Major Eccles has shown that the vast majority of deaths are not natural, but due to accident or disease; but in England one in nine, and in Ireland one in eleven, still die of old age, which he calls “wearing out”—for which process the lecturer has given no reason. To me it always seems that at birth each individual receives a varying amount of life-force, according to his heredity, and like a clock is constructed to last a certain time and no longer. An eight-day clock will live eight days if no one stops the pendulum, and a man will live out his days if no accident or disease cuts them short.

This unaccountable mystery, death, seems to prevail everywhere over life, although indeed an interesting question has been raised as to fishes. In them growth has no term, and inasmuch as the more vital cartilage never hardens into the more mineral tooth, it is stated that no death from old age has yet been recorded; in other words, there seems a possibility that natural death is unknown amongst them.

The fact, however, remains that outside Scripture, to the question

“Why we die?” there is no answer. I find that the first object of this Society is “To investigate in a reverent spirit, important questions of Philosophy and Science, especially those bearing upon Holy Scripture;” and I suggest that no more suitable philosophical and physiological question could be raised than “Why we die?”—and that the final reply, “Because of sin,” is the only one as yet given—a reply that is at any rate sufficient for all believers.

In conclusion, the CHAIRMAN moved a cordial vote of thanks to the lecturer; and this having been duly seconded, was carried with acclamation.

MR. J. O. CORRIE, B.A., F.R.A.S., parried the thrust which the thought of the overcrowding of the earth with deathless human beings might make on the credibility of the Bible. He quoted Luke xxiv, 39 (R.V.); Acts i, 9; 1 Cor. xv, 44, 51, 59; 1 Thess. iv, 17; Gen. v, 24; and Heb. xi, 5, as bearing upon a life free from material limitations, and proceeded: It is a modern scientific speculative possibility (if I understand it correctly) that matter, as we know it, is a ponderous condition only, of that which could exist as an interaction of electricity and ether. To quote Mr. Balfour’s phrase in his presidential address to the British Association, “Matter is thus not merely explained; it is explained away.” This view admits of the supposition that, if humanity had had neither fall nor death, men’s bodies, etherealized after the will of God had been done through them upon earth, might have passed through space to other planets, revolving round other suns. And no limit can be assigned, either to space, or to its contents. We know that, for Christ’s true disciples, there are reserved “many mansions,” or abiding places (John xiv, 2).

Modern physical science, then, seems to interpose no bar to the thought of the “change” of the natural body into that which St. Paul calls “a spiritual body,” which has no need to occupy space upon earth. Such, on the other hand, may, rather, be regarded as potential in humanity. But even elementary mathematics gives us evidence of the existence of what, for distinction from the *real*, we call the “imaginary” or the “impossible.” The symbol $\sqrt{-1}$ denotes something which, first operating upon unity, and then upon the result of that operation, produces -1 ; just as unity taken three times, and the result three times, produces nine. But $\sqrt{-1}$

cannot exist in the known universe. Yet, by its means, we obtain expressions from which sines and cosines are calculated with any required degree of accuracy. And these, when tabulated, enable us to measure distances, whether accessible or not, even those of the heavenly bodies ; also to sail the oceans, to use big guns, etc.

The science of Mathematics, which has so humble a mundane origin in common facts of number and space, enforces our recognition of the existence of transcendental entities, mysteriously connected with common fact. This may ease the thought of a spiritual body, which St. Paul says that "there is." And it helps the mind to encounter the tremendous cogency of the evidence of the facts of experience.

Mr. M. L. ROUSE, B.A., B.L. : Does not the lecturer's theory that men would have died physically (although not spiritually), even if Adam had not sinned, conflict with the statement of Holy Scripture in Romans v, 13, 14 : "Until the law sin was in the world : but sin is not imputed when there is no law. Nevertheless death reigned from Adam until Moses, even over them that had not sinned after the likeness of Adam's transgression." Surely a distinction is drawn there between the punishment of a person's actual sins and his physical death, and this death is said to have befallen everyone as a result of Adam's transgression (including even infants who have never actually sinned).

In answer to the contention that physical death was needful in order to prevent the overpeopling of the Earth, a previous speaker has suggested what was already in my mind, that the Creator could easily from time to time have transferred portions of the vast human family to other worlds. Mr. Maunder did, indeed, on a former occasion prove that Mars and all the outer planets of our Solar System are unfit for human habitation, and gave us some reason to think that the inner ones were unfit also. But it is safe to assume that the hundreds of millions of suns which we call stars have planets revolving around them, and that very many of these are suited to be our dwelling place, and perhaps are only waiting to receive believers after resurrection. Yet the Earth might never have become too full of people up to the present time ; since it is quite certain that if our huge tropical forests were thinned, our deserts irrigated with artesian wells, and the soil deeply dug and well manured,

it could support many thousand times as many people as it does now.

Even in England now where the soil is turned to account, wheat by more intensive tillage yields 27 bushels to the acre against 16 in North America. But it was found by Lawes and Gilbert that whereas land which had remained without manure for 20 years had a residual fertility of 13 bushels to the acre, land that received an ordinary dressing of manure yielded 30 bushels to the acre; and if the additional production be availed of to feed more cattle, it is manifest that, with the application of the resulting manure, an increase of five or ten bushels will be obtained at the end of the next four years' rotation of crops, and at the end of the second rotation another such increase at compound interest, and so on until 55 or 60 bushels of corn is reached. But the soil if further enriched would be too rank, you will say. Not if, instead of stirring it to a depth of five or even seven inches, you stir it to one, two, and even three feet as has been done. It was my privilege—in his very old age—to visit Sir Arthur Cotton, the first great English irrigator, who had made the region round the lower Godavery river support ten times the population that it had supported before; and upon retiring to Dorking he had the soil of his little estate analysed and valued, and it was found to be worth 15 per cent. less than the average for the district; yet when I visited him, it had for upwards of twenty years yielded enormous crops, the success being due to no special manuring but entirely to deep digging, his practice being to dig down three feet and then turn the two upper spits (or foot depths) completely over, and the lowest over upon itself. At my first visit, in early spring, Sir Arthur drove his stick straight down into the bare soil until it was buried to the crook; at my second visit, in summer, I counted the stalks of two or three plants of wheat, and upon each there were upwards of 100, while in a tiny barn stacked with other huge plants I counted upon one 104 ears, while in each ear there were at least 40 grains, as I proved. This would make one grain to be the parent in one generation of 4160 grains. But it must be borne in mind that Sir Arthur's practice was to sow the grains in clumps at even distances apart, three grains going to every clump, and later to remove the two weaker plants, leaving the choicest one, which makes the multiplication $1386\frac{2}{3}$; and further,

the beds were protected from the birds by a high network, which through keeping off many breeding butterflies, moths and beetles, may have halved the tribute usually paid to insects. Without this protection, according to farming traditions, he would have lost $\frac{2}{3}$, or one-half more, or his total produce would have been 694 grains from a single one. On the other hand, if he had systematically used manure, he would have multiplied this at least four times over, and thus have obtained a 2776 fold return for his sowing.

Mr. SIDNEY COLLETT: If I understand the Scriptures aright, the connection between sin and death, as cause and effect, is one of the great fundamental doctrines of the Word of God, *e.g.*, "The wages of sin is death" (Rom. vi, 23); "Sin, when it is finished, bringeth forth death" (James i, 15); "As by one man sin entered into the world, and *death by sin*" (Rom. v, 12). Surely there can be no mistaking such passages as these, whether we have in mind physical or spiritual death. Indeed, the Bible seems to teach most clearly that had there been no sin, there would have been no death.

The lecturer has really dealt with the *immediate* causes of death, and has ignored altogether what is far more important, *viz.*, the original cause. What would be thought of a man who attributed the motion of a train of railway carriages solely to the link that connected it with the engine, claiming that it had nothing whatever to do with the complex machinery of the engine, the power of the steam, the fire that generated the steam, or the intelligent mind of the engine driver, whose hand controlled its entire movements? Dr. Eccles tells us that the causes of death are three, *viz.*, accidents, wearing out, and deadly parasites. He also speaks of war, carelessness, and suicide. But, I ask, would any of these things ever have been possible, *but for sin*? Surely they are the very products of sin!

Mr. W. HOSTE, B.A.: Is physical death in man the result of his transgression? If so, in what sense? Spiritually, Adam died the day he sinned: he was then and there separated from God. Physically he survived for some nine hundred years. It is noteworthy that to ensure his physical death, in addition to the spiritual, God took an additional precaution. He hedged him off from the tree of life, by driving him out of the garden: "Now lest he put forth his hand, and take *also* of the tree of life (that *also* forbids

confusion between the tree of life and the tree of the knowledge of good and evil) and live for ever," etc. (Gen. iii, 22). What, then, was this "life for ever" ? not a renewal of spiritual life, for the leaves of a tree could not atone for transgression, but a continued physical existence in a condition of sin. May not the fruit of that tree have contained the elements, in the form of some essential tonic, necessary to the preservation of man's physical being in ideal health ? in other words, to hold the perfect balance between waste and renewal of tissue, the katabolism and anabolism of which our Chairman spoke. (See Rev. xxii, 2.) Spiritual and physical death in man, then, are both the results of sin, but while the former is the direct result, the latter is the indirect.

LECTURER'S REPLY.

In the course of his reply to the remarks made upon his Paper, Major ECCLES said he thought no one's faith in God and the Bible could be stronger than his ; and yet he held, on grounds that satisfied his own judgment, that man's transgression had nothing to do with physical death. Many questions had been raised with which it was not possible to deal in a brief statement. When, however, we consider the problem of food, as Mr. Rouse had done, we must remember that food comes from matter that was once living and had died.

The meeting adjourned at 6.10 p.m.

599TH ORDINARY GENERAL MEETING,
HELD IN COMMITTEE ROOM B, CENTRAL BUILDINGS,
WESTMINSTER, ON MONDAY, APRIL 15TH, 1918,
AT 4.30 P.M.

THE REV. H. J. R. MARSTON, M.A., IN THE CHAIR.

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

The HON. SECRETARY announced the election as Associates of the Rev. Dr. M. G. Kyle and Edward P. Vining, Esq., LL.D.

The rules regulating the discussion following the papers were read; and in the absence of the Rev. Dr. MacCulloch the Chairman requested the Secretary to read the Canon's paper on "The Gnostic Conception of the Cross."

THE Gnostic CONCEPTION OF THE CROSS. By Canon J. A. MACCULLOCH, D.D., Rector of S. Saviour's, Bridge of Allan.

IN its original form Gnosticism may be described as an extra-Christian, and doubtless also a pre-Christian, religious syncretism, which aimed at enlightening men through esoteric means and ritual. Later, its prominent teachers laid hold of Christian doctrines, especially those relating to the Person of Christ, adapting these freely to their own views, and thus presenting a misleading likeness to Christianity. A preliminary sketch of their Christology is essential to our purpose.

I.

All material substance was regarded as evil. With this, some elements of the Divine world had become intermixed. In some men—Gnostics, elect, *πνευματικοί*, there is a spark of this Divine element. In most men there is only a gross material nature impossible of redemption and doomed to perish. Some Gnostics admitted a third element in man or a third class of men. This was the psychic element, and men who possessed it might rise or fall. These were ordinary Christians; unless there was also in them the Divine spark they never could be

Gnostics. The great purpose of redemption was the freeing of the Divine element from the gross matter with which it had been mingled, so that the Gnostic might be free from, and rise superior to, the material body. All bodily substance being evil, a true Incarnation was an impossibility in Gnostic belief. The Gnostic Christ was originally a pagan Saviour or Deliverer. When this original pagan Deliverer was identified with the Christ of the Church, the Gnostic evaded Incarnation in different ways. He made his Christ dualistic, possessing a true body with which the Divine Æon Christ was temporarily associated, usually from the moment of baptism until just before the Crucifixion. Or the solution was docetic, and that in two separate ways: (a) The body was not material but psychical or dispensational, so that it might appear visible, tangible, and capable of suffering, yet in a different manner from a true human body. It was specially formed in the higher region, and was born of the Virgin, though not of her substance. With it the Æon Christ was united. Or (b) the bodily form in which the Divine Christ appeared was purely phantasmal and had no material substance.

Similarly, since the Crucifixion, on which the Church based her atonement doctrine, was an historic fact, the Gnostics skilfully evaded the idea of suffering being attributed to a Divine Being by these means also. They also assumed that the Crucifixion was the result of the hostility of the Demiurge to Christ.

In the first of these views the bodily Jesus suffered, but His sufferings were a mere episode and had no atoning value; since the Æon Christ had forsaken Jesus. This was the view of Cerinthus, and of certain Ophite groups.

In the second view, that entertained by Valentinus, the psychic, dispensational body, after being deserted by the Æon Soter, suffered crucifixion, but in a non-human, non-bodily sense. This suffering was in no sense redemptive, but, as we shall see, a symbol of certain heavenly events.*

In the third view, the body being purely phantasmal, though it was extended on the Cross, could not really suffer. This was the theory of Simon Magus, of Marcion, to some extent, and, in a curious form, of Basilides, or rather of some of his followers, as reported by Irenæus. According to them, Jesus caused His appearance to be borne by Simon of Cyrene, who was therefore crucified for Him, Jesus Himself taking Simon's form

* Irenæus, *Adv. Hæreses* (ed. Massuet) i, 7, 1; iii, 16, 1.

and deriding His persecutors. "For being an incorporeal power and the Mind of the unborn Father, He transfigured Himself as He pleased." Hence it is unnecessary to confess Him Who was crucified, and he who does so is still a slave to the powers of the world.*

The system of Basilides himself, as described by Hippolytus, differs radically from this, and must be considered by itself. Jesus was purely human, with a real body, as well as a psychic and a pneumatic part, corresponding to the three grades of existence in Basilides' system. No Æon descended on Him, for ascent, not descent, is the law of the universe. But enlightenment passes from the highest to the lowest spheres, as naphtha is lit by a flame, and thus it reached Jesus. His sufferings were real, not apparent, but not on account of sin committed by Him. He suffered "as the child which seems not to have sinned would suffer."† The three grades of existence were now separated from each other by His death. Jesus was the first-fruits of this separation. His bodily nature was resolved into formlessness, while the higher elements were restored to their respective spheres at Christ's Ascension. This process is repeated in all spiritual men or Gnostics in their ascent to the Father. This view is nearer the Catholic atonement doctrine than that of other Gnostics, though differing from it still in essential points.‡

A true atonement doctrine was unnecessary to the Gnostic, really because of his peculiar views regarding matter and spirit, views reproduced in the popular Christian Science of to-day, which has been accepted so eagerly by people inexperienced in either Christian doctrine or Christian practice. Matter was evil; spirit was good—a spark of the Divine. Though entangled in matter, it could not be tainted with evil, but yet was alienated from the higher powers, an exile from its true sphere. All that was necessary for its recovery was the knowledge (*γνώσις*) of how freedom from matter was to be obtained, of how man could rise superior to it even in this life, and discard it finally at death. That knowledge, enlightenment, or illumination was the work of the Saviour, but not in any real sense because of His Crucifixion. The Gnostic redemption lay elsewhere: the Cross was a stumbling-block which, in allying itself with the

* Irenæus, *Adv. Haer.*, i, 24, 4.

† Clement, *Stromateis*, iv, 12.

‡ Hippolytus, *Refut. omn. haer.*, vii, 14.

Christian scheme, Gnosticism required to evade, as has just been seen. That knowledge was conveyed to the Gnostic by esoteric means, acquaintance with spiritual mysteries supposed to have been revealed secretly by Christ, or through a mystical experience. The Gnostic's superiority to matter was gained by sacraments, initiations, and other rites.

Enlightenment, or Gnosis, as the esoteric revelation of mysteries hid from ordinary men, is well seen in the Gnostic *Acts of Thomas*. In these *Acts* God, Christ, and the Holy Spirit are called "hidden," and the apostle reveals them and their mysteries. Christ is the "hidden Rest" or the "hidden Light," and there is a "hidden mystery" of the oil used in initiation. How remote is all this from the New Testament idea of Christ as the Light enlightening all men!

The conception of enlightenment or of mysteries revealed by Christ secretly to the apostles, usually after the Resurrection, is extensively shown in the Coptic *Book of the Saviour* and similar works. The Gnostic view of the universe is detailed by Christ. He explains the meaning and purpose of mystic sacraments, which bring the soul into the light of lights; He also gives them the mysteries by which the ascending soul may pass through the gates of the spheres, the seals and master-words by which the Archons may be confounded.*

Further, Christ's revelation delivered men from the slavery of Fate—in practice the bondage to the power of the planetary Archons or World-rulers, including or additional to the Demiurge, or God of the world of matter. The escape was brought about by the knowledge of magic formulæ, charms, and sacraments imparted by the Saviour, as has just been seen. These were to be used by the soul on its ascent through the heavens of the Archons to the Pleroma after death.†

This Gnosis was impossible for men of the material type; only the Gnostic, the *πνευματικός*, was destined to it. Psychical men might or might not reach a certain salvation, but they could never obtain Gnosis with all the rich destiny which attended on it.

* See these works in K. Schmidt, *Kopt.-gnost. Schriften*, Leipzig, 1905, and in G. R. S. Mead, *Pistis Sophia, a Coptic Gnostic Gospel*, London, 1896.

† See W. Anz, *Zur Frage nach dem Ursprung des Gnostizismus*, in *Texte und Untersuchungen*, xv, 4, Leipzig, 1897.

II.

A truly suffering Saviour was not admissible, and the Cross was explained away, either as a symbol of events, or rather personages, in the higher world, whose actions were the counterpart of man's redemption on earth—redemption in both cases being spiritual enlightenment. The Cross, transferred to the heavenly sphere, was then a person who enlightened. In this world man was cast headlong into matter: the Crucifixion reversed this position, since the head was upward. Hence it could be used as a symbol of the process of enlightenment, and the Gnostic in accepting the enlightenment could be said to have ascended the Cross and to have reverted to his true position—upright, and the Left no longer usurping the place of the Right; Left symbolizing matter, the Demiurge, all that was earthy; Right the spirit, the heavenly—symbolism probably borrowed from Pythagoreanism. This is curiously illustrated by a passage in the *Travels of Peter*, who was crucified head downwards. Peter says that the first man sank his being in the earth, and even in birth we are all brought forth as if poured into the earth, so that Right is Left and Left is Right. This is also represented by his position on the Cross, whereas Christ, by His position, made these present things into the Left, and what appeared to be the Left into the Right, into eternal things, and Below into Above. "In exaltation of the Right, He has changed all the signs into their proper nature, considering as good those thought not good, and those which men thought malign as most benign. Whence in a mystery the Lord hath said, 'If ye make not the Right like as the Left, and the Left like as the Right, Above as Below, Before as Behind, ye shall not know God's Kingdom.' This saying have I made manifest in myself, my brothers; this is the way in which your eyes behold me hanging. It is the way of the first man. . . . The Word is symbolized by that straight stem on which I hang The cross-piece is thought to figure forth that Human Nature which suffered the fault of change in the first man, but by the help of God and man then received again its real mind. Right in the centre joining twain in one is set the nail of discipline, conversion, and repentance."

Documents and passages such as this, either originating in Gnostic circles or full of Gnostic ideas, probably circulated among the orthodox also, with these ideas so far adapted to Catholic thought. Something of that seems apparent in the work

just cited, though the Gnostic phraseology and conceptions are still evident. It was always possible to interpret such phraseology from a Catholic point of view, but as used by Gnostics it was purely symbolic of enlightenment. The Gnostics, in fact, exhausted language in praise of the Cross, while at the same time robbing it of all its value.

III.

The Crucifixion as a symbol of heavenly events is best considered in the light of the teaching of Valentinus and of his school. But first we may premise that, as the heavenly Æon, who unites artificially with the human Jesus, in most of the Gnostic systems, is rooted in the mythology of the pre-Christian Gnosticism and the religions from which it was formed, so Christ and the Cross of the Christian scheme are further subjected to a mythologizing process both in heaven and on earth.

In the Valentinian system the Æon Sophia, as a result of her "fall," *i.e.*, her passionate desire for union with or understanding of the unsearchable God, or in her desire to emulate His power of self-generation, was in danger of absorption into His absolute essence, when the Æon Horos, who prevents such an absorption, induced her to lay aside her design (personified as a female, Ἐνθύμησις), as well as her "passion." By him she was purified and established, and her Enthumesis with its passion—an amorphous yet spiritual being—was led outside the Pleroma. This is a primary fall and redemption in the heavenly sphere.* Horos is also called Stauros (Cross), Lytrotēs (Redeemer), etc., and was produced by the Father by means of the Æon Monogenēs, who now produces Christ and Holy Spirit. Christ instructed all the Æons with respect to the Father and Himself, and in pity for Enthumesis (also called Achamoth or the Lower Sophia) outside the Pleroma, extended Himself through and beyond Stauros, the boundary of the Pleroma, and imparted form to her. Then He withdrew, leaving "the odour of immortality" with

* Irenæus, i, 1, 2. Cf. Mansel, *Gnostic Heresies of the First and Second Centuries*, p. 182: "The emanation of the relative from the Absolute, of the many from the One, though it be but the manifestation of God Himself, under various attributes, is regarded in some sort as a Fall, typical of the lower Fall which gave existence to the material world; and the recognition of the real unity and indifference of these various manifestations, as in some sort a redemption, typical of the redemption of the lower world."

her. She strained herself to discover him, but Horos prevented her further progress by uttering the mystic name Iao. Now began her passion, from which she was saved by another Æon, Christ or Soter, sent forth to her aid by the Higher Christ. This Lower Christ afterwards descended on the earthly, phantasmal Christ at His baptism, forsaking Him before the Crucifixion. The phantasmal Christ suffered in order that Achamoth might exhibit through Him a type of the Christ above, viz., of Him who isolated himself from the Pleroma by extending Himself through Stauros for her aid. "For," says Irenæus, "they say that all these transactions were counterparts of what took place above."*

In this sentence we obtain a clue to the problem of these three personalities, Stauros or Horos, the Higher Christ, and the Lower Christ. If Horos, according to one reading, is the product of all the Æons, so also is the Lower Christ. All three perform a work of redemption, while their functions and various names have much in common. In the same way the mystic Cross, in a fragment of the *Acts of John*, has many names. Thus it can hardly be doubted that the Æon Stauros is also the two-fold Christ, while in the system as reported by Epiphanius there is but one Saviour, called Horos, Soter, and Christ.† The three beings are reduplications of one redeeming spirit, just as those redeemed in the heavenly sphere—the upper and the lower Sophia, are duplicates. Having redeemed them, Stauros or Christ proceeds to redeem men on earth. Horos and Stauros, in Valentinian thought, symbolized two important elements in the redemptive process, Horos that of separating, i.e., separating all admixture from each form of existence; Stauros that of supporting, i.e., supporting every existence thus purified. But the two functions were in fact interchangeable. Horos as Stauros supported Sophia; as Horos he separated her Enthumesis from her. Similarly Christ, while supporting and giving form to Achamoth, separated her passion from her.

Thus in the Valentinian system, though the idea of emanation as in some sense a "fall," followed by some kind of enlightenment, may have been a non-Christian philosophic idea, the terminology applied to it is derived from the Cross. On the other hand, redemption as mere Gnosis or enlightenment takes the place of the Christian redemption. The Cross had to be accepted, but it became a symbol of, and gave a name to, a Divine Person, who,

* Irenæus, i. 1, ff.

† Epiphanius, *Contra Hæreses*, xxxi. 4.

in heaven, enlightens Divine Æons who have fallen. Theodotus says: "The Cross is a symbol of the boundary (Horos) of the Pleroma, for it separates the faithful from the unfaithful, as Horos separated the Cosmos from the Pleroma."* The Cross to the Gnostic symbolized Divine events, and was a badge of his own enlightenment. Redemption in Heaven and on earth was enlightenment and nothing more. The Crucifixion was thus a mystery expressing the great enlightenment, as is seen from a formula of benediction in the *Acts of Philip*—"The mystery of Him Who hung in the midst of heaven and earth be with you." This may at once refer to Christ as crucified or to Horos-Stauros as one standing between the Pleroma and the lower world. So, too, in Gnostic baptismal and anointing formulæ, both being acts of initiation producing enlightenment, there is a reference to the enlightening mystery of the Cross, *i.e.*, to Christ the Enlightener, of whom the Cross is the mystery form—"Holy oil which was given us for unction, and hidden mystery of the Cross which is seen through it." †

IV.

The Valentinians made the Redeemer Himself Stauros (Cross), but there is evidence that most of the Gnostics mystically identified Christ with the Cross, whether the actual Cross or a phantasmal, mystic one, which was now Himself, now a kind of double of Him.

This is illustrated from some curious passages in the Apocryphal Acts and other documents, which, though probably circulating among Catholics, bear clear traces of Gnostic ideas. First may be cited a passage from the *Encomiasta Anonyma* on S. Andrew: "Rejoicing I come to thee, O life-giving Cross, which I know as my own. I recognize thy mystery, because thou art planted in the world to establish the unstable. Thy head stretches to heaven to point out the heavenly Logos. . . . Thy middle points are as hands stretched out to right, and left to put to flight the opposing power of the evil one and to gather the dispersed together. Thy lower part is fastened in the earth . . . that those lying under the earth, and held fast there, may be brought up and united to the heavenly. . . . Thou who led back the worthy to God through knowledge (*ἐπίγνωσις*), and

* *Excerpta ex Theodoto*, § 42.

† W. Wright, *Apocryphal Acts of Apostles*, ii, 258.

called back those in sins through repentance, disdain not henceforth to receive me also." * Souls are here to be restored to the Pleroma by the Cross, not by an atonement but by knowledge, and the Cross is figured as of an immense size.

In the Fragment of the *Acts of John*, Christ, the heavenly Æon who left the body on the Cross, appears to John in a cave on the Mount of Olives, and shows him a cross of light about which is a great multitude, with one form and likeness, and on it another multitude not having one form, and above the Cross the Lord Himself, not having any shape but only a voice. Christ says: "This Cross is sometimes called the Word by Me for your sakes, sometimes Jesus, or Christ, or Door, or Way, or Bread, or Seed, or Resurrection, or Son, or Father, or Spirit, or Life, or Truth, or Faith, or Grace. It is called these as towards men, but in itself it is the marking off of all things, the firm necessity of those things that were fixed and were unsettled. . . . This is not the Cross of wood which thou wilt see when thou hast descended, nor am I He that is upon the Cross. . . . The multitude of one aspect about the Cross is the lower Nature. Those on the Cross, if they have not one form, it is because not yet hath every limb of Him that came down been gathered together. But when the upper nature shall be taken up, and the race which is repairing to Me in obedience to My voice, then that which as yet hears Me not shall become as thou art . . . above them of the world, even as I am now. . . . Nothing of the things which they will say of Me have I suffered." †

Here the actual Cross is robbed of all significance and is a mere symbol of a mystery cross—Stauros or Horos separating and establishing. The Cross is one with the Redeemer Who is only a Voice. The symbolism of the arms and head of the Cross is much the same as in the *Encomiasta Anonyma*. On either side are the forces of evil whom it puts to flight. The head in one case reaches to heaven and points out the Logos; in the other case the Logos is above it. The interpretation of the multitude on the Cross as meaning that not yet has every limb of Him Who came down been gathered together, is suggestive. Christ and this multitude (the Πνευματικοί) are one, just as Christ and Cross are one. The Spiritual, the Gnostics, are really parts of the

* R. A. Lipsius, *Die Apokryphen Apostelgeschichten*, Braunschweig, 1883-90, i, 596.

† *Acta Johannis*, ed. Zahn, Erlangen, 1880, p. 221.

Divine, lost in the world, but now to be restored. Christ is not complete till all are brought together and established in Him, the Stauros, Who purifies and sustains. According to the *Acts of Thomas*, Christ overthrows the Demiurge and collects all of one nature with Himself into one place.

The same thought underlies the formula used by the ascending soul to the Archons in the Gospel of Philip: "I have gathered together my limbs which were scattered abroad."* Probably the soul identifies itself with Christ Who gathers together His elect. But in both cases there would appear to be some influence from the Egyptian myth of the gathering together of the scattered members of Osiris, and to the mystery in which his various aspects as dead, dismembered, and reconstructed was shown.† It is well known that in Egyptian theology the soul of the dead is constantly identified with Osiris. More and more do we find how great was the influence of Egyptian religion and myth upon both Gnosticism and popular Christianity in the early centuries.

In the *Gospel of Peter* the resurrection is seen by the soldiers in the following manner: "They see coming forth from the tomb three men, and the two supporting the One, and a Cross following them. And of the two the head reached to heaven, but the head of Him that was led by them overpassed the heavens. And they heard a voice from the heavens, saying, 'Hast Thou preached to them that slept?' And an answer was heard from the Cross, 'Yea.'" Here the Cross is a duplicate of Christ, and answers for Him respecting the mission in Hades.‡

A similar reduplication occurs in the *Acts of Philip*. Philip caused the earth to swallow his pagan opponents. As they descend to Hades they confess the Crucified, and say, "Behold the Cross illumines us," and pray Christ to manifest Himself to them. Christ appears and upbraids Philip; then with His hand He marks a Cross in the air, coming down from above, even

* Epiphanius, xxvi, 13.

† See J. G. Frazer, *Attis, Adonis, and Osiris*, p. 259.

‡ The great size of Christ corresponds to that of the Cross reaching to heaven in the *Encomiasta Anonyma* (cited above) and in the *Acts of Philip* (see below). In the *Wanderings of the Apostles*, Christ is said to have appeared in various forms, sometimes very large, so that at times his head reached even to heaven. Cf. *Shepherd of Hermas, Simil.*, ix, 6, 1, Christ is so tall that He surpassed the tower in height. In the *Passio Perpetuae*, § 10, Christ is a Man of marvellous greatness, so as to overpass the top of the amphitheatre. In the opinion of the Rabbins, Adam before the Fall had a vast stature.

to the abyss, full of light and in the form of a ladder. On this luminous Cross the multitude ascend from the abyss.*

Another reduplication is found in the *Acts of Matthew*. When his coffin was cast into the sea by the pagan king, the Bishop Plato saw Matthew standing on the waters, with two men in shining garments, and in front of them a beautiful boy (viz., Christ in that form). Out of the sea rose a Cross, at the end of which was the coffin with the body of Matthew, which the boy carried to the palace.†

The oneness of Christ and the Cross is still more evident in the account of the translation of the body of S. Philip, in which a shining Cross is seen beside his glorified form. Some Athenian philosophers carried it to Hierapolis, guided by Jesus in the form of Philip. They found the city gate closed, but one of them appealed to the Cross to open it. This was done, and at the same time the city was lit with light from the Cross. The people rushed out, and heard a voice bidding them look to the right, where they see a Cross reaching to heaven, and bidding them come to it and be enlightened. A shining form, that of Philip, was seen beside the Cross, which was now taken upwards. As it went, it cried to Philip, "Behold the place of thy rest, until I come in the glory of My Father and awake thee."‡ Again, in the *Acts of Xantippe* she sees on the wall a Cross of light through which appears a beautiful youth, and under Him a path of light on which He walks. Then he takes the form of S. Paul and raises her up.§ This change of form (and also of stature) on the part of Christ, or sometimes of His Apostles, is one of the most curious episodes of Christian apocryphal literature. It originated in the Docetic views of the Gnostics: "For since He was an incorporeal form, He transformed Himself just as He pleased," according to the Basilideans.|| As the heavenly Æon Christ assumed a different form in each of the heavens through which He descended to earth, it is not surprising that on earth similar transformations take place. This also throws light upon this conception which we are now studying, that the Cross is a double

* *Acta Apost. Apoc.*, ed. Lipsius and Bonnet, ii, 2, 64.

† *The Apocryphal Gospels, Acts, and Apocalypses*, Edinburgh, 1870, p. 385.

‡ *Texts and Studies*, Cambridge, ii, 3, 158 f.

§ *Ibid.*, ii, 3, 68.

|| *Irenæus*, i, 19, 2.

of Christ. The luminosity of the Cross is, of course, a symbol of the enlightenment which Christ gives to the Gnostic.

Such ideas as these may also have been current in popular Christianity, where also arose a great reverence for the Cross as a holy mystery. In a Coptic fragment the star in the east appears in the form of a wheel, its figure being like a Cross sending forth flashes of light. Letters are written upon the Cross: "This is Jesus, the Son of God." * In another fragment, part of a sermon on the festival of the Cross, ascribed to S. Cyril, the Cross is said to have been buried in the tomb of Christ after His resurrection. Rufus, son of Cleopas, was buried near by, and his father mourned, saying that Jesus could have raised him up had He been alive. At that moment the Cross comes forth from the tomb, rests on the grave of Rufus, who is restored to life, while Cleopas is cured of disease in the feet.† The Gnostic view of Christ and His Cross as doubles may have influenced Christian art, in which, when the Trinity was to be represented, a Cross without the crucified Saviour is placed beside the Father and the Holy Spirit. "In Christian iconography Christ is actually present under the form and semblance of the Cross."‡

In connexion with the passage cited from the *Gospel of Peter*, in which Christ after His resurrection is followed by the Cross, which speaks in His name, it is worth noting that in one Latin version of the *Gospel of Nicodemus*, at the request of the saints Christ sets up His Cross in Hades, and leaves it there as a sign of victory and that the lords of Hades might not retain any whom he had absolved. Again, in the curious *Narrative of Joseph of Arimathea*, the penitent robber goes to Paradise with the undefiled Cross shining like lightning. Later, he reappeared on earth with Christ, and was "like a king in great power, having on him the Cross." In the Greek *Gospel of Nicodemus*, the robber was seen at the gate of Paradise with the Cross on his shoulder; and the flaming sword, seeing the Cross, opened the gate to him. Here, the Cross, if not a double of Christ, is invested with all His power.

* *Texts and Studies*, Cambridge, "Coptic Apocryphal Gospels," iv, 2, 165.

† *Ibid.*, iv, 2, 185.

‡ A. N. Didron, *Christian Iconography*, 1886, i, 369.

V.

Another curious doctrine of the Cross connected it with the Tree of Life, or with an oil-tree in Paradise, and so with the use of oil in baptismal and initiatory ceremonies. This was not exclusively Gnostic, but it fitted in with Gnostic ideas. The source of the doctrine of the Oil Tree must be sought in Jewish tradition, which apparently still regarded the Paradise from which Adam was exiled as lying on the confines of the world, or as existing in one of the heavens, perhaps in the belief that men had been ejected from a Paradise in heaven to this earth. In that Paradise was still the Tree of Life. In the Slavonic version of the *Book of the Secrets of Enoch*, the Tree grows in Paradise in the third heaven, and God rests on it when He comes there. Four streams—of honey, milk, wine, and oil—flow from its roots. There is also an olive-tree, always distilling oil.* In the Ethiopian version of the *Book of Enoch*, the marvels of the tree are fully described, and its fruit is to be given to the righteous after the judgment.† These are Jewish notions, as we see from 4 Ezra viii, 52: “For unto you is Paradise opened and the Tree of Life is planted”; but they also occur in the *Apocalypse*, where the Tree of Life grows in the Paradise of God, its leaves for the healing of the nations, itself a reward for the righteous.‡ Christian apocryphal literature followed this tradition, and the presence of this glorious tree in Paradise is constantly asserted in the visions of the Other-world.§ A curious tradition is that found in the *Gospel of Nicodemus*, where Adam bids Seth go to the gates of Paradise, and beg oil from the Tree of Mercy to anoint him in his sickness. But this cannot be given him till 5500 years have passed, when Christ will anoint both Adam and all believers with this oil of His mercy, and Adam will be led into Paradise to the tree.|| There is an obvious reference here to the use of oil in baptism, and to the current tradition of a mystic connection of the oil with the Tree. In the *Clementine Recognitions*, the Son of God is said to be called Christ because he was anointed with oil from the Tree of Life, and He now anoints with similar

* Ed. R. H. Charles and W. R. Morfill, Oxford, 1896, viii, 1 f.

† Ed. R. H. Charles, Oxford, 1893, ch. 24, 25.

‡ *Apoc.*, ii, 7, xxii, 2, 14, 19.

§ See my *Early Christian Visions of the Other World*, *passim*.

|| A similar tradition is found in the *Apocalypse of Moses*, and in *Vita Adae*, 36 f.

oil all who inherit His kingdom. Aaron and others were anointed with chrism after the pattern of the spiritual ointment; if then the temporal grace had such efficacy, how potent was that ointment extracted by God from a branch of the Tree of Life! With this eternal ointment made by God Adam was anointed.*

These are pseudo-mystical ideas, but in Gnostic circles the oil used at initiations was connected with the Tree of Life. In the formula of the Ophites, the candidate said, "I have been anointed with white ointment from the Tree of Life."† But now the Gnostics connected the Tree of Paradise distilling oil with the Cross, the duplicate of Christ. This is seen from the prayers at the anointing in the *Acts of Thomas*: "Beautiful fruit, more beautiful than all other fruit; . . . most compassionate, Power of the Tree with which men clothe themselves and thus conquer their foes. Thou Who crownest the victors and offerest them the symbol of joy! Thou Who hast proclaimed to men their salvation! . . . O Jesu, may its conquering force dwell in this oil, as also dwelt its force on the Tree related to it."‡ Tree and Cross are mystically related, and the oil drops from both. The strength of Christ is invited to descend on the oil as He or it dwelt on the Cross. This is more clearly seen in another formula in the same *Acts*: "Holy oil, given us for unction; hidden mystery in which the Cross is revealed to us."§ Some Gnostics regard the anointing at initiation as itself the redemption, the oil being a type of that sweet odour which is above all things.|| There may also be some reference to these ideas in the citations of Hippolytus from the account of the initiation of the Naassenes: "In the third gate we celebrate the mystery, and are anointed with the unspeakable chrism."¶ Just before this, he has referred to enlightenment as equivalent to a blind man's receiving sight, and seeing a Paradise with every kind of tree, and water coming from them, while from the same water the olive draws its oil, the vine the wine, and so forth.

The oil of initiation, with all its enlightening and supporting power, comes from the Tree of Paradise, which is also the Tree

* *Clem. Recog.*, i, 45, 47.

† Origen, *Contra Celsum*, vi, 27. In the system of the Gnostic Justin the angels created by Elohim and Edem are allegorically the Trees of the Garden of Eden, Hippolytus, *Refut. omn. Haer.*, v, 21.

‡ *Acts of Thomas*, § 157.

§ *Ibid.*, § 121.

|| Irenæus, i, 21, 3, 4.

¶ Hippolytus, *Refut. omn. Haer.*, v, 4.

of the Cross ; in other words, Christ Himself, Who is called the Tree of Life in the *Acts of Matthew*.^{*} Its powers may be compared with those of the immortal food of the Zoroastrian heaven, the holy oil of the blessed, as described in the *Avesta*.[†] Celsus, perhaps quite properly, reported these Gnostic views when he said that the Gnostic writings refer to a Tree of Life and a resurrection of the flesh by means of the Tree, "because I imagine their Teacher was nailed to a Cross," although Origen says that he mistook the symbolical expression : "through the Tree came death and through the Tree comes life, because death was in Adam and life in Christ."[‡] Celsus was perhaps quoting from some Gnostic document in which Christ was identified with the Tree of the Cross, the Tree of Life. Orthodox writers could indeed use the same ideas, though doubtless in a less realistic manner. Hippolytus, *e.g.*, says that the Tree of Life is Christ, because He has brought forth fruits of knowledge and virtue like a tree, whereof they that eat receive eternal life, and shall enjoy the Tree of Life in Paradise with Adam and all the righteous.[§] Gnostic and Catholic spoke much the same language, though their purpose was different.

The symbolic identity of the Tree of Life, the Cross, and Christ, held by the Gnostics, was connected with a legend which was widespread in the Middle Ages. Seth planted on Adam's grave a branch of the Tree of Life. A beam of this tree was thrown by Solomon into the Pool of Bethesda, which now had healing powers. At the time of the Passion this beam floated up and from it the Cross was made, the relics of it afterwards performing innumerable miracles. This story is given in full detail in the *Golden Legend* of Jacobus de Voragine, so popular in the Middle Ages.

VI.

Out of their extreme veneration for the Cross, the Gnostics shared with the Catholics the custom of using the sign of the

^{*} A. S. Lewis, *Mythological Acts of the Apostles*, p. 105.

[†] L. H. Mills, *Avesta Eschatology*, p. 30.

[‡] Origen, *Contra Celsum*, vi, 34.

[§] Hippolytus, *Comm. on Proverbs*, in Mai, *Bib. nova Patrum*, vii, 2, 71. Cf. S. Ignatius, *ad Ephes.* 17, "For this cause did the Lord suffer the ointment to be poured on His head, that He might breathe the breath of immortality into His Church."

Cross, whether in particular rites such as baptism and anointing, or in daily life as a protective sign, and it is not impossible that they may have given a greater impulse to its use as a mere magical charm among orthodox Christians. Tertullian, from the orthodox side, already refers early in the third century to the common use of the sign as efficacious against demons and as a general protective power: "At every forward step and movement, at every going in and out, when we put on our clothes and shoes, when we bathe, when we sit at table, when we light the lamps, in all the ordinary acts of daily life, we trace the sign upon the forehead." * In the Apocryphal Acts there are copious references to its use, which are in most cases witnesses to the Gnostic custom. Demons who saw the invisible "seal" made in baptism on the forehead were afraid and would not approach. In the Syriac *History of John*, the apostle says: "I will sign for you with His Cross, the sign of life, and I will place a seal on your foreheads. that when the devil sees that they are the asylum of the Lord, he may flee." † When demons are near, the apostles and others "seal their faces," and they flee away. ‡ Or demoniacs are signed with the Cross to expel the invading demons. § The sign was also used before any important undertaking, especially in the performance of a miracle. S. John made the sign over a dead boy. || S. Thomas signs the young man who had killed his mistress, before sending him to raise her again. ¶ Thecla made the sign before ascending the pile of faggots on which she was to suffer martyrdom. ** S. John sealed himself all over his body before his death; this was done also by S. Matthew on rising at dawn, and by a Christian maiden of Corinth, rescued by a pious youth from a house of ill-fame whence she had been consigned by a pagan judge—"signing herself entirely with the mystery of the Cross." †† Gates flew open when marked with the sacred sign, or when the Cross itself was appealed to. †† Storms

* Tertullian, *De Corona Militis*, 3, cf. *Adv. Marcionem*, iii, 18.

† W. Wright, *Apocr. Acts of the Apostles*, 1871, ii, 37.

‡ Lipsius and Bonnet, *op. cit.*, ii, 1, 107.

§ R. A. Lipsius, *Die Apokryphen Apostelgeschichten*, i, 619; Lewis, *op. cit.*, p. 67.

|| Lewis, p. 44.

¶ *The Apocryphal Gospels, Acts, and Apocalypses*, Edinburgh, 1870, p. 418.

** Lipsius and Bonnet, i, 250.

†† *Ibid.*, ii, 1, 215, Lewis, p. 171; *Apocr. Gospels, Acts, etc.*, p. 377; Palladius, *Hist. Laus.*, cxlix.

†† Lipsius, *op. cit.*, i, 583; *Acts of Philip in Texts and Studies*, ii, 3, § 2.

were calmed by the same sign, and even a dog bound by a chain had its bonds loosed when the sign was made over it.*

In the *Gospel of Nicodemus* Christ signs Adam and all the others rescued from Hades with a Cross on their foreheads, and the two sons of Simeon, who narrate the story of Christ's descent, made the sign on their faces (or, in the Latin version, on their tongues) before beginning.

The use of crosses of wood is also referred to in these Apocryphal writings. In the *History of John* we learn how he wore such a Cross round his neck. Occasionally he brought it out and kissed it, or with it he signed the congregation, saying: "I have made this Cross a bulwark for you, that Satan may not come and assemble his demons, and make sleep enter into you or heedlessness of mind." This Cross was found on his body at death, and from it fiery tongues broke forth, when the pagan onlookers would touch it, and burned their hands.† He had also a Cross which he planted in the ground before him at Ephesus.‡ He also set up a Cross and lit the lamps with it.§ The *Acts of Xantippe* tell how she made a Cross of wood, and in the same *Acts* the servants of the man to whom Polyxena was entrusted went forth to meet the hosts who came against them, saying: "Let us go forth to meet them, raising the sign of the Cross." "Then raising the precious Cross they went forth, about thirty men, and slew five thousand." The Coptic *Legend of Bartholomew* describes how the apostle took three vines, and fastened them in the form of a Cross to a tree, when they gave forth valuable fruit.

Orthodox Christians had to defend themselves against the pagan taunt that they worshipped the Cross as an idol. Minucius Felix expressly denies such a worship. There is little doubt, however, that something very like such a worship, and certainly invocation of the Cross, was practised by Gnostics, as appears from passages in the Apocryphal Acts. S. Matthew is said by his persecutors to have called upon Christ and to have invoked His Cross, and so to have put out the fires kindled for his martyrdom. While this might be a pagan misunderstanding, other passages show that such an invocation was a usual practice

* Lipsius and Bonnet, ii, 2, 92; Lewis, p. 21.

† Lipsius, *op. cit.*, i, 437.

‡ Lewis, p. 157.

§ Wright, ii, 32.

with Gnostics. In the *Acts and Martyrdom of the Holy Apostle Andrew*, the apostle cries before being fastened to the Cross: "Rejoice, O Cross, which has been consecrated by the body of Christ and adorned by His limbs as if with pearls. Assuredly before my Lord went up on thee, thou hadst much earthly fear; but now, invested with heavenly longing, thou art set up according to my prayer. . . . O good Cross, which hast received comeliness and beauty from the limbs of the Lord; O much longed for, and earnestly desired, and fervently sought after, and already prepared beforehand for my soul longing for thee, take me away from men, and restore me to my Master, in order that through thee He may accept me, who through thee hast redeemed me."*

In this passage the Cross upon which the apostle is to suffer appears to be identified with that of Christ Himself. If it might be susceptible of an orthodox interpretation, or if it has been toned down to more orthodox methods of thought, it is obviously of Gnostic origin. A more or less parallel passage in the *Encomiasta Anonyma* of the same apostle—a document already cited in another connexion, shows the Gnostic method of invocation and the Gnostic conception of the Cross quite distinctly: "O Cross, ingenious implement of the salvation wrought for men by the Highest! O Cross, unvanquished trophy of the victory of Christ over the enemy! O Cross, life-bringing wood, planted in the earth, but the fruit treasured up in heaven! O venerable Cross, sweet object, sweet name, O adorable Cross, which has carried the Master, the true vine, as a cluster, and hast borne the robber as fruit, faith blossoming through confession. Thou who led back the worthy to God through knowledge (*ἐπίγνωσις*), and called back those in sins through repentance, disdain not henceforth to receive me also! But how long do I loiter saying these things and delay to let myself be fastened to the Cross, that I may be made living through it and discharge gloriously the death debt through it! Therefore, come, ministers of my joy and servants of the proconsul, fulfil the will of both, and bind the lamb to the tree, bringing the Form [*i.e.*, the flesh] to the Demiurge, and the soul to the Giver."†

The Gnostic conceptions of the Cross as a double of Christ, of salvation as knowledge, and of matter and spirit, as well as

* *Apocr. Gospels, Acts, and Revelations*, p. 341 f.

† Lipsius, *op. cit.*, i, 596.

the symbolic glorification of the Cross, are all to be found in this remarkable passage.

Among the orthodox the use of the sign of the Cross was general at a comparatively early period, both in public ritual—Baptism, Confirmation, etc.—as well as in private custom, covering the whole field of human life and action.* The sign was believed to be an effective remedy against demons and diseases, and many phrases, whether used literally or metaphorically, show a growing reverence for the Cross. It was a “trophy against demons,” “a healer of diseases,” “a purifier of leprosies,” “a victory over the devil,” “a destroyer of altars,” “a demolisher of temples.” The sacred symbol was seen everywhere in nature and in art—in the human face, in a ship with sails, in a hammer; and it was discovered in certain passages of the Old Testament through the method of allegorical interpretation.† S. Ignatius speaks curiously of Christians as stones prepared by the Father for His temple, drawn up on high by the Cross of Christ as by an engine, the Holy Ghost being the rope to which they are attached.‡ How soon actual crosses began to be used is uncertain, but Cassian, towards the end of the fourth century, ridicules certain monks who carried wooden crosses around their necks, as a literal “taking up the Cross and following Christ.”§ A portable Cross, found in a Christian tomb at Rome, bears the inscription, “The Cross is life to me; death, O enemy, to thee.” More and more, however, the Cross tended to be regarded in a superstitious way, and many miracles were attributed to the use of the sign of the Cross by saints. This increasing superstitious veneration of the Cross was no doubt natural where the spiritual values of Christianity were but dimly understood, but there can hardly be any doubt that here both Gnostic belief and practice exercised a strong influence upon popular Christianity. The popularity of the Apocryphal Acts, in which this veneration is so marked, among Christian readers, suggests one means by which this influence might be exerted.

* Cyril of Jerusalem, *Catechesis*, xiii, 36.

† Cf. *Ep. of Barnabas*, 8, 9, 12; Justin, *Dialogue with Trypho*, 97; *Apology*, i, 55.

‡ Ignatius, *Ad Ephes.*, 9.

§ Cassian, *Collat.*, viii, 3.

VII.

To conclude. Unexpected as the Gnostic reverence for the Cross may be, because of their idea that Jesus Christ was in no sense a real human being, and that He could not possibly suffer, the explanation of it is found in the fact of its identification with Christ. Metaphorical though this might be, it easily passed over into a real identification. It is found again in the fact that the Cross symbolized the "redemption" of heavenly beings in a higher sphere by the heavenly *Stauros* or Saviour. They were separated from the state into which they had fallen. Hence the Cross symbolized a cosmic process of redemption, a restoration of all to their proper spheres, begun in the highest regions, reproduced on earth, and consummated once more in the highest when all the spiritual were restored to the *Pleroma*. It is found also in the fact that the Cross was made a symbol of that esoteric enlightenment or *Gnosis*, so dear to the Gnostics, and in which their conception of redemption is to be looked for. Stretched on the Cross, the human Jesus, deserted by the heavenly *Æon*, or the phantasmal Christ, symbolized once more by his upright position the ascent to the *Pleroma*, and by His outstretched arms the restoration of things to their proper states—Left to Right, Right to Left. Historical fact and reality, which at first sight might appear the veriest stumbling-block to the Gnostic, was thus evaded through symbolism, and a whole new series of values was given to what, for the Christian, possessed values of a quite different kind. The Cross of Christ was made of none effect in the Christian sense, by the Gnostics, but they found in a fact which they could not evade new effects which suited their own outlook upon the universe, once that fact was robbed of all its reality. In view of modern tendencies of the same kind, we learn from this the need of a constant appeal to the historic facts of our faith, as facts, as well as to the eternal realities which lie behind them.

DISCUSSION.

Prof. H. LANGHORNE ORCHARD, M.A., B.Sc., moved a vote of thanks to the author for an able and scholarly Paper. He said:—

In his opening sentence the author speaks of Gnosticism as extra-Christian and pre-Christian. He might have added that it is also anti-Christian. It was not for nothing that St. Paul warned Timothy

against the "oppositions of false-named *Gnosis*." It was not for nothing that St. John wrote that the spirit which denies that "Jesus Christ is come in the flesh" is not of God, but is the spirit of *Anti-Christ*.

Although not devoid of beauty, and possessing a certain allure-ment, Gnosticism is one of the most poisonous heresies that has attacked the life of Christianity. Affirming that all Matter is evil; that Redemption, or Freedom, is freedom from the Body; that God has not been "manifest in the flesh"; that Christ has never suffered for us and borne our sins in His Own body on the tree; this subtle heresy is rooted in threefold error—error philosophical and moral. There are misconceptions regarding *God*, regarding *Sin*, regarding *Matter*. It is taught that God did not create all things, that man's body was not created and given to him by God, but by the Demiurge, an enemy of God; that a Divine Being cannot suffer. Since inseparably connected with matter, and therefore with the body, Sin was regarded rather as a misfortune than as a spiritual offence and disobedience to God. Matter, being an evil, sinful thing, was supposed to be endowed with free-will, since Sin consists in disobedience to some command of God, and disobedience postulates free-will.

In the Gnostic conception of the Cross, the mental process appears to have consisted in erecting a suggestive emblem into a representative symbol, and then identifying this imaginary representation with the real Person. The Cross of Christ was an emblem suggestive of Him, lifted up between heaven and earth as Mediator between God, the Holy, and man, the sinful; as made a curse for us because made sin for us, since "cursed is everyone that hangeth on a tree." Then, afterwards, the Cross was viewed as representing Him, not in this aspect only, but completely and altogether, in every one of His offices. Finally, it came to be identified with Him, and received the honour and praise due to Him Who was slain, and redeemed us to God by His Blood. We shall agree with the author that "we learn from this the need of a constant appeal to the historic facts of our faith, as facts," and to bow all undisciplined imaginations before the Word of God.

Mr. M. L. ROUSE, B.A., B.L., in seconding the vote of thanks, said: I would pay tribute to the intense labour of research and analysis

that it must have cost to produce a full and clear handling of so recondite a subject. The lecturer is probably right in his inference that the Gnostic idea of Christ's gathering His limbs together on the Cross is derived from the Egyptian myth of Osiris ; and, in keeping with the Egyptian element in Gnosticism, I have seen at the British Museum a Gnostic gem consisting of Christ's haloed face carved on the back of a beetle. As the Egyptian beetle rolls together the ball of earth in which it has laid its egg, so, it was supposed, had a beetle once rolled together the ball of the sun ; and hence Egyptian kings called themselves Sun-Beetles—Aa-khepru-Ra, Men-kheper-Ra, and the like : Christ was put on the same level by these dreamers.

The CHAIRMAN, in closing the discussion, said that, while fully agreeing with the proposal to thank the lecturer very cordially for his research and labour, he doubted how far it was worth while to go so fully into what he might call the pathology of Christianity. Gnosticism was a system so wholly void of reason, method, and aim, that it defied real analysis, and led us only farther and farther into the mire and the dark.

Was such a farrago of capricious and arbitrary notions really worth serious and prolonged study? The Cross was beyond all dispute the core and centre of vital Christianity. It was more than an emblem : it was a symbol of the last realities of the Gospel. The Gnostic vagaries about the Cross were merely idle and irrelevant fancies, without power or purpose. It was remarkable that St. Paul, the great exponent of the Cross, did not even mention the Cross or crucifixion in the greatest of all his epistles—that to the Romans.

The resolution was cordially carried.

WRITTEN COMMUNICATION.

Rev. D. M. MCINTYRE, of Glasgow, wrote :—

The Gnostic identification of the Cross with Christ may be due to the fact that from a very early period a cross (rectangular, usually, with equal arms), representing a star, was the symbol of Deity. According to Professor Sayce, the cross appears in Ancient Chaldea, on cylinders of the Kassite dynasty, evidently the ideogram for divinity. And Sir Arthur Evans writes with reference to a small marble cross which he found in a central place in the shrine of the Cretan goddess-mother : " It must be borne in mind that the equal-

limbed Eastern cross retains the symbolic form of the primitive star sign, as we see it attached to the service of the Minoan divinities."

This identification throws light on many passages of Scripture. Balaam, the prophet from Mesopotamia, for example, speaks of the Coming One: "There shall come forth a star out of Jacob, and a sceptre shall rise out of Israel." More than a thousand years later, wise men from the East came to worship the infant Christ, saying, "We have seen His star in the East." And in the Apocalypse our Lord, foretelling His return as King, testifies: "I am the bright, the morning star." Again, In Ezek. ix, 4, the "mark" spoken of is "tav," the last letter in the Hebrew alphabet, which, in the ancient script, was a cross. In the Apocalypse there is a cluster of texts, evidently based upon this vision of Ezekiel, which speak of the seal of the living God, which is itself the Name of God (vii, 3; ix, 4; xiv, 1; etc.)

The Gnostic appellation of the Cross—"Horos," boundary—may recall the landmarks and waymarks which were put under the direct care of the Deity, and were, no doubt, often stamped with His name or symbol; just as the Celtic missionaries were accustomed to write, α , ω (*alpha* and *omega*) on the menhirs and dolmens of paganism.

600TH ORDINARY GENERAL MEETING,
HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, MAY 13TH, 1918,
AT 4.30 P.M.

SIR FRANK W. DYSON, F.R.S., The Astronomer Royal,
IN THE CHAIR.

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

The SECRETARY announced the death of the Rev. H. A. Crosbie, an Associate of the Institute.

The CHAIRMAN then called on Dr. Sydney Chapman to read his paper on "Terrestrial Magnetism," which was illustrated by lantern slides.

TERRESTRIAL MAGNETISM. By SYDNEY CHAPMAN,
Esq., M.A., D.Sc.

THE history of our subject for this afternoon began when men, long ages ago, discovered the power of attraction exercised towards iron by the mineral called lodestone. This property is mentioned in the writings of Thales (640-546 B.C.), so that it has been known for two thousand five hundred years or more. According to Lucretius (99-55 B.C.), the stone received the name of *magnet* from the place whence it was obtained, among the hills of Magnesia. From this the terms magnetism, magnetic force, and so on, are naturally derived.

As the attractive property of the lodestone was gradually investigated, it appeared that small pieces of iron are specially attracted by two particular parts of the lodestone, which, in a stone of regular shape, are opposite to one another. These are called the poles of the magnet, and the stone is said to be magnetized in the direction of the line joining them.

The next great discovery in magnetism related to the *directive* property of the lodestone. If a small magnet is mounted on a floating card or board, it is observed that the float and magnet will turn on the water till the magnetic axis, or line of poles, lies along a particular direction. Once the stone has assumed this direction, the tendency to motion ceases—there is no force on

it tending to move it bodily. In early days the direction of the axis was supposed to be truly north and south, but it is now known that in most parts of the earth this is only approximately the case. This directive property of magnets was probably discovered independently among the Eastern and the Western nations, becoming known in Europe about the twelfth century of our era, and earlier still in China and Japan.

This second discovery was of great practical importance and was soon turned to use in navigation. The magnet points sufficiently nearly to true north for it to be of great value to mariners, since it provided a means, which had hitherto been wanting, of indicating direction when out of sight of land or through cloudiness of sky—of the heavenly bodies. Thus the ship's compass was invented, the early forms consisting of a small needle-shaped magnet attached to a floating bowl or card, on which, later on, the points of the compass began to be marked. Many improvements in construction have been introduced in the course of centuries, and the use of iron in the structure of modern ships has necessitated the addition of special auxiliary devices to compensate for the disturbing effects on the compass. Fundamentally, however, the compass remains the same, and is still one of the most important aids to seamanship—and, it is becoming possible to say, of airmanship also.

In time it was found that the peculiar properties of the natural magnet could be communicated, by rubbing, to pieces of iron, and that, if the iron was not too soft, the magnetization is retained for a considerable period. It thus became possible to prepare artificial magnets and compass needles. The first European treatise on the magnet seems to have been written in 1269 by Petrus Peregrinus, a Frenchman, and a disciple of Roger Bacon. He made precise experiments on the magnetic aura or sphere of influence surrounding a magnet, to which its properties were generally referred; in the language of modern science, this is termed "a field of magnetic force," but without any essential difference of meaning. Peregrinus thus clearly describes how the direction of force at the surface of a magnet can be mapped out and its poles determined: "The stone is to be made in globular form and polished in the same way as are crystals and other stones. Thus it is caused to conform in shape to the celestial sphere. Now place upon it a needle or elongated piece of iron, and draw a line in the direction of the needle, dividing the stone in two. Then put the needle in another

place on the stone, and draw another line in the same way. This may be repeated with the needle in other positions. All of the lines thus drawn will run together in two points, just as all the meridian circles of the world run together in two opposite poles of the world." The direction of the magnetic force, however, is not to be supposed to lie along the surface of the magnet. Indeed, Peregrinus observed that a small needle stands perpendicularly to the surface of the stone at the poles, where the magnetic force also is strongest.

A simple way of illustrating the distribution of magnetic force, not only on the surface but also in the space surrounding a magnet, is that of sprinkling iron filings over a sheet of paper or glass laid over or in the neighbourhood of the body. The little pieces of iron themselves become temporary magnets owing to the magnetic force surrounding the stone, and if the paper is lightly tapped they arrange themselves end to end so as to make the directions of the lines of magnetic force clearly apparent.

By analogy with a spherical lodestone such as Peregrinus used, our illustrious countryman, William Gilbert, Physician to Queen Elizabeth, was led to the conclusion that the earth itself is a great magnet. In his famous treatise *De Magnete* (1600) he describes the earth as being a great round lodestone, the magnetic poles of which were supposed to be coincident with the poles of rotation. Some years earlier, in 1581, Robert Norman, an instrument maker of London, and formerly a seaman, had announced that, as in Peregrinus' lodestone, the magnetic force of the earth does not lie along its surface, *i.e.*, it is not horizontal, but has also a vertical component. Ordinary compass needles are pivoted and weighted so as to swing horizontally, but if perfectly balanced before magnetization, after they are magnetized they will exhibit a tendency to dip; in the northern hemisphere the north-seeking, and in the southern hemisphere the south-seeking end is the one which dips. The natural angle of the dip in London is in round figures 65° measured from the horizontal. This was discovered by Norman in 1576, and is a salient feature in the analogy between the earth and a spherical lodestone. Norman himself undoubtedly had some inkling of the idea which Gilbert afterwards clearly stated; he perceived that the dipping of the needle indicates that the point or source of force which the needle "respects" is in the earth and not in the heavens.

In earlier times the North Star was usually regarded as the point to which the compass was directed.

When Gilbert's treatise was written, it was well known that the compass does not usually point true north, as, on his hypothesis of the earth as a spherical magnet with its poles on the axis of rotation, it should do. The error or *declination* of the compass first claimed serious attention among Western navigators at the time of Columbus' first voyage to the New World in 1492. At that time the error of the compass in Europe was not great, and if noticed was probably thought to be due to an imperfection of the instrument. A few days' voyage out from the Canary Islands, however, the ship's pilot discovered that the needle varied to the west of north by a whole point of the compass ($11\frac{1}{4}^{\circ}$). The seamen were thrown into terror and dismay, probably feeling that if the compass no longer remained faithful to the Northern Star, "all their foundations were out of joint." Columbus, who was troubled by no such fears, on learning the cause of their disquiet successfully allayed the distress by telling them that the needle truly pointed north, but that the Pole Star had a motion of its own. His great authority in astronomical learning caused this fictitious explanation to be accepted, but he seems also to have secretly altered the compass card so that the needle appeared to have become true once more. Columbus himself recognized the incident as the discovery of a new fact of nature, *viz.*, that the compass diverges from true north by an amount which varies from place to place. In crossing from Europe to America he had gone from places of slight easterly declination to regions where the compass pointed west of north.

This fact took some time to become generally known, after which it was apparent that, if the compass was to retain its full value in navigation, the error in its direction at different places must be ascertained and allowed for. Voyagers began to make observations of the compass declination at various points on their course, when the sun and stars made it possible to determine astronomically the direction of true north. Chart-makers also began to enter these observations at the corresponding points on their maps, for the benefit of later navigators in those regions, who might be compelled, by cloudy weather to rely solely on their compass for direction. A better way of indicating the declination on maps was afterwards introduced, the first person to apply the method being Halley, the second Astronomer Royal (1720-1742).

For more than a century after Columbus' discovery, and beyond the time of publication of Gilbert's treatise, it remained unknown that not only does the direction of the compass vary from place to place, but also from time to time. This further important fact was first perceived by Gellibrand, a Gresham professor of mathematics, in 1634, on comparing an observation of declination then made by him, at Deptford, with earlier observations made in 1580 and 1622. The change of declination in the longer interval was about 7° . A new complication was thus introduced into the practical utilization of the magnetic properties of the earth, not only in navigation, but also in land and mine surveying. A chart or survey directed by the compass will not remain true, as judged by the compass, for many years. The fact is one of considerable economic importance, because in many countries old maps and surveyors' plans were drawn by compass rather than by astronomical directions. The magnitude of the change of compass declination, over a long period, is very great. Between 1580 and 1810 the declination at London changed from 11° E. to 24° W., a total variation of 35° . The compass now points about 14° west of north, in London, and is still diminishing, at present at the rate of 1° in six or seven years. These remarkable changes in the direction of the horizontal component of the earth's magnetic force are associated with changes in the magnetic dip, and also (as is now known) in the magnitude as well as direction of the force. They are manifestations of mysterious and far-reaching changes in the earth itself, but magnetic science has not yet succeeded in either explaining or predicting these secular variations. Their existence, however, renders it necessary for magnetic charts to be revised from time to time, at intervals of a few years, indeed, if they are to remain of value in navigation.

Halley, the author of the first chart of magnetic declination, aroused interest in the study of the earth's magnetism by the publication (in 1683) of a theory intended to explain the secular changes in the compass declination. He saw that the distribution of declination (at any one time) was too complicated for it to be supposed that the earth was a uniformly magnetized sphere with two poles, even if these were not regarded as coincident with the poles of the axis of rotation. He suggested that there were, on the contrary, four magnetic poles, "near each pole of the equator two," and he tried to explain the peculiar nature of the secular changes of declination by assigning different

motions to the two magnetic axes. Even such a modification, it is now known, is insufficient to account for the irregularities of the actual distribution and changes of the earth's magnetic field.

The desirability of further observations was, however, brought into prominence by Halley's treatise of 1683, and in consequence the Government of King William III was induced to provide a ship on which, under Halley's command, observations of declination were to be made wherever possible in the north and south Atlantic ocean. On his return, after two years' continual voyaging (1698-1700), Halley embodied his and other observations on the first chart of lines of equal magnetic declination. This chart embraced mainly the Atlantic Ocean and the regions bordering upon it; about a year later, in 1702, he prepared a further chart covering the whole world, as far as the available observations allowed. These charts gained a wide popularity, and were frequently republished, and, later on, revised, as the secular change made this necessary.

The principle underlying their construction was very simple. Points at which the declination has a given value, say 5° west, are joined by a continuous line, different lines referring to different values of the declination, at intervals of 1° . At points between these lines the declination is gauged approximately by interpolation. It is not necessary, of course, to have observations of the compass "error" at all points of the lines of equal declination, these lines being drawn by a consideration of whatever observations are actually available.

The same principle can evidently be applied in the representation of the distribution of magnetic dip and intensity of magnetic force; this is, in fact, now done as part of the regular work of the hydrographic departments of various national governments. Since Halley's time, and especially during the nineteenth and present centuries, the magnetic field at the earth's surface, both by sea and land, has been the subject of much attention. The British Association initiated the first general magnetic survey of a whole country when, in 1836, Sabine, Ross, and others of its members combined to survey Great Britain from this aspect. The United Kingdom has been re-surveyed three or four times since then, and there are few, if any, civilized countries where at least one magnetic survey has not been made. At sea naval and other vessels frequently make magnetic observations, and many polar expeditions have been specially equipped for the investigation of the earth's magnetism in arctic and

antarctic regions. The north and south magnetic poles, where a freely suspended needle assumes the vertical position, have thus been located, though not, it appears, actually reached. These poles slowly change their position, in correspondence with the general secular changes of the earth's magnetism; the motion, however, has not yet been ascertained with precision.

During the present century a great advance has been made towards the survey of the whole earth, within a comparatively limited period, partly by official action leading to modern surveys in India, America, Egypt, Japan, and elsewhere, and partly by the establishment of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington. The latter body has not only surveyed many land regions where magnetic observations were scanty, but has also made a remarkably extensive oceanic survey embracing the whole globe, during the years 1910-1917. For this purpose a specially non-magnetic ship, the "Carnegie," has been constructed, whereby magnetic determinations at sea have been rendered far more accurate and speedy than is possible in ordinary ships. The work of this institution has materially improved the accuracy of recent magnetic charts of the world.

The magnetic maps so far referred to, while they are in the form most useful for navigation, do not give a good picture of the actual direction of the earth's lines of magnetic force. As regards the direction of horizontal force, which is what the compass shows, maps such as Duperrey's (as on the lantern slide), which give the lines of force themselves, afford the best idea. They converge to the magnetic poles in the two hemispheres, and their direction differs most from that of the meridians in polar regions.

Why the earth is a magnet, and why its magnetism changes from year to year, are mysteries which have as yet hardly at all yielded to attempts at explanation. One fact, however, concerning the *seat* of its magnetism, has been surely established. All except possibly a small fraction of the whole is known to have its origin *within* the earth, and not in the atmosphere, nor in extra-atmospheric regions. It has been conjectured, with some probability, that the rotation of the earth is the prime cause of its magnetization, and that any large rotating body would probably be likewise magnetic. The fact that the sun also appears to be a magnet, and one having its magnetization, on the whole, similarly related to the axis and direction of rotation, tends to support this theory of the origin of the earth's

magnetism. But the laws which, on such a theory, connect the size and speed of rotation of a body with its degree of magnetization are quite unknown, nor has it been explained why, in the case of the earth, the magnetic axis diverges from, and moves relatively to, the axis of rotation. The great secular changes in the earth's magnetism confront us with the fact that the inner history of our planet is by no means concluded, and that within the interior, to the knowledge of which we have so few means of access, profound changes are still being wrought by agents as powerful as they are mysterious.

The earth's magnetism is also affected, more transiently and, in the long run, to a smaller degree, by causes into the nature of which we have gained more insight. At every station on the earth's surface the magnetic "elements," declination, dip, and intensity of force, show regular variations characteristic of the place, dependent partly on the time of day (or position of the sun), and partly on the position of the moon. These changes are found to have their origin above the earth's surface, in high layers of the atmosphere to which we have as little chance of direct access as we have to great depths within the earth. In the case of the variations depending upon the position of the moon, the primary cause seems to consist in a lunar tidal motion of the atmosphere. Living, as we do, at the bottom of the great aerial ocean which envelopes the earth, we are yet quite unconscious of this lunar tide, more unconscious, perhaps, as far as our physical sensations are concerned, than marine organisms at deep sea levels are of the ordinary ocean tides. Nevertheless the lunar atmospheric tide exists, and the air currents associated with it produce minute but ascertainable variations in the height of the barometer (or the pressure of the air), having maxima and minima each twice in a lunar day. These air currents extend up to high regions of the atmosphere, and it is in a layer perhaps 30 or 40 miles above the surface that conditions prove to be favourable to the production, by the air currents, of the magnetic variations in question. The motion of the air, in the presence of the earth's field of magnetic force, has results similar to those proceeding from the motion of the armature between the magnetic poles of a dynamo—there arises a tendency for electric currents to flow. This is the case at all levels, but at the earth's surface, and in other layers, the electrical resistance of the air is too great for the tendency to have much actual effect. There is evidence, however, independent

of magnetic observation, indicating that at some high level the air is in a peculiar electrical condition, in which its resistance to the flow of currents is largely broken down. The air is said to be ionized, and another result of this is the production of ozone, which is known to exist in the upper atmosphere. The absorption of very blue (or, rather, ultra-violet) light from the sun seems to be the cause of the ionization of the air, so that, as we might expect, the atmosphere in the sunlit or "day" hemisphere of the earth is much more affected than that over the dark hemisphere. Thus the lunar tidal action produces most result over the former, which accounts for the observed fact that the aforesaid magnetic variations (and the electric currents in the upper air of which these variations are a direct result), while governed, as to type, by the position of the moon, are yet of greater intensity during the hours of solar day than of night.

The magnetic variations which depend solely on the position of the sun are produced in a similar manner, except that the atmospheric motions also are in this case governed by the sun, as well as the ionization. The atmospheric motions are due partly to thermal and partly to tidal action on the part of the sun. The two sets of electric currents, due to moon and sun, flow in the same ionized layer, and undergo similar modifications owing to the seasonal changes of ionization resulting from the varying incidence of the solar rays throughout the year.

A further connection between the earth's magnetism and the sun is revealed by the increase or decrease in the amount of these magnetic variations with the increase or decrease in the disturbance of the solar surface, as indicated by the number of spots and prominences visible upon it. This solar disturbance shows a fairly regular cycle of variation, with a period of about 11 years; the spots and prominences are probably not to be regarded as the main form of disturbance, but as merely symptomatic of great changes affecting the whole of the upper strata of the sun. The emission of heat and light from our luminary possibly shows small variations corresponding to the 11-year period, but these are negligible in comparison with the great variations which appear to occur in the emission of the ultra-violet rays which ionize the earth's upper atmosphere. At times of sunspot maximum the conducting power of the ionized layer seems to be about double that at sunspot minimum, so that the same atmospheric motions produce much larger magnetic variations at the one epoch than at the other.

Another circumstance connected with these daily magnetic variations deserves mention. A variable system of electric currents, wherever situated, tends to produce associated currents in neighbouring bodies, and will do so in so far as these are capable of conducting electricity. In the present case the electric currents produced in the upper air, in the manner described, vary regularly throughout the day, as the rotating earth carries its different parts through successive stages of light and darkness. There is consequently a tendency for a daily varying system of currents to flow within the earth itself, and the magnetic variations indicate that this tendency takes effect. There is some flow of current, indeed, within the first few miles beneath the surface, where the oceans and permeable strata are moderately good conductors. The evidence of the magnetic changes is, however, such as to indicate that the bulk of the internal currents flow within the central core of the earth, beyond a depth of about 1000 kilometres. Apart from the layers quite near the surface, the upper 1000 kilometres of the earth's substance seem to be badly conducting: beneath that the conductivity appears to be of about the same order as that of sea water.

One further important class of magnetic variations remains to be dealt with. Besides the regular daily variations the causes of which have just been referred to, and besides the slow but powerful secular changes, there are frequent irregular disturbances of a fleeting character. Sometimes they are of small intensity, but occasionally their magnitude is great and the fluctuations in magnetic force rapid—disturbances of this kind are called magnetic *storms*: They commonly commence with great suddenness, at times breaking out at a time of apparent magnetic calm. The commencement is simultaneous, to within a fraction of a minute, over the whole earth, and their effects are world wide. Auroral phenomena, both boreal and austral, are usually associated with them, and are visible in regions much less removed from the equator than those in which these lights are generally to be seen. Powerful earth currents also accompany magnetic storms, and are sometimes of such intensity and irregularity as to produce a temporary derangement in the telegraphic communications of this and other countries. At magnetic observatories, where the magnetic force is continuously registered photographically, the records show rapid and relatively intense fluctuations in the amount and direction of the force. Variations in the direction of the compass, for instance, which as a

result of the slow secular change would take several years to produce, may occur and be reversed many times during a few hours of a magnetic storm. The disturbed condition may extend over one or more days. The intensity and irregularity of the disturbance is greatest in the high-latitude zones where auroral phenomena are most frequent.

There is a close connection between magnetic storms and solar disturbance, storms being frequent when the sun's surface is much spotted, and *vice versa*. They are consequently most numerous at times of sunspot maximum. Again, the sun rotates on its axis in a period which, as viewed from the earth, is between 27 and 28 days. Mr. Maunder has shown that there is a marked tendency for magnetic storms to recur after one or more such intervals of time. This indicates the sun as the source of the initiating factor in the production of magnetic storms, and suggests that this factor is communicated to the earth along narrow streams proceeding from, and apparently rotating with, the sun. As I conceive it, the action is somewhat as follows: The sun ejects electric particles from disturbed regions on its surface, and these particles travel outwards in limited streams which, on account of the great speed of ejection, seem to revolve with the sun. When such a stream happens to be directed towards the earth, many of the particles are precipitated into the earth's atmosphere, their paths being deflected to some extent, however, by the earth's own magnetic force. The bombardment of the upper atmosphere by these particles produces another ionized layer, like that due to the ultra-violet light from the sun, except that the former extends all over the earth. This layer, however, is not only ionized but electrically charged, and the entangled charges, when thus brought to comparative rest in our atmosphere, exercise a strong mutual repulsion. This results in an upward expansion of the air (the action resembling that of an electrically charged soap bubble, which, owing to the same cause, expands until either it bursts or the tension balances the repulsion). In this way the charge is enabled to escape, perhaps carrying away with it a portion of the atmosphere itself. Some of the most characteristic features of magnetic storms are explicable as consequences of these actions.

Before concluding, I would add a few words relating to magnetic observation. This is usually divided under two heads, observations of the first kind comprising those of which the object is to determine the value of one of the elements of magnetic

force (declination, dip, or intensity) at a particular place and time. All observations at sea, and those made in the course of magnetic surveys on land, are of this class. The instruments employed are set up at the chosen station, the observation is made, and the instruments are then transported to the next station.

The observations of the other class are made at fixed observatories, and consist of a continuous photographic registration of the *variations* of the magnetic elements. The dark chamber in which this is carried on is usually carefully maintained at a nearly constant temperature, either by being built in the ground as a cellar, or by having thick double walls and internal temperature control. At such observatories absolute observations are also made, usually several times a week, in order to standardize the magnetic registers. These registers are the source of our knowledge of the daily and irregular magnetic variations, including magnetic storms. The absolute observations, at observatories and elsewhere, provide our information as to the main distribution of magnetic force over the earth, and as to its slow secular changes.

The facts thus obtained are, as I have endeavoured to show, both interesting in themselves and of considerable practical importance. Beyond this, however, lies the question of their significance and interpretation; the search after prior causes is one from which our minds, as constituted, are unable to refrain. In the case of terrestrial magnetism the results of the search, so far as it has been successful, are of great variety and interest. A comparatively few magnetic observations at the earth's surface have, even in the course of the present brief sketch of the subject, led our thoughts to strange and inaccessible regions. We have considered the tidal action of the moon upon the rarefied gases in high atmospheric layers, the mechanical effects of solar heat in these regions, and likewise the electrical consequences of a portion of the sun's radiation which never penetrates to the earth's surface. The Auroral Lights in arctic skies, no less than electric currents within the earth's crust, and at great depths in the intensely compressed and heated core, have claimed our attention, and continually we have had to refer to the varied emissions from the ever disturbed surface of the sun. Nevertheless, though much has been explained, further and great mysteries remain to be unfolded. Chief among these is the

mystery of why the earth is a great "lodestone" or magnet at all, and why its magnetism is subject to changes so profound, in a period which, to the geologist at least, is but brief. Difficult as the problem may seem, we cannot but believe that in this, as in matters of greater and deeper import, honest and patient enquiry will in time find the solution. Happy is the man to whom it falls, first of his race, to think one—even the least—of "God's thoughts after Him."

DISCUSSION.

The CHAIRMAN asked leave to tell once again the familiar story of Faraday. A visitor to his laboratory once asked : "What is the use of all these things ?" to which he gave the immortal reply : "What is the use of a baby ?" "These things,"—the electric batteries, the coils and cables—have now become part of our life. It is interesting to see how long the baby, which has been the subject of Dr. Chapman's address, took to grow. It began with Thales, 2500 years ago ; the next step was taken in the Middle Ages ; to-day we have its practical application to navigation and to all our electrical appliances.

This is typical of the other physical sciences. They appeal to two different classes of people ; one class asked : "To what use can we turn it ?" ; the other class, which appealed more to his own mind, consisted of those who tried to explain what they saw. But this word "explain" is not appropriate, since men of science cannot "explain" anything, but they can only place observed facts in their right relationship to one another.

In the particular subject to which Dr. Chapman had called their attention, a connection had been traced between movements of the magnetic needle and the condition of the sun as shown by sunspots. Dr. Chapman had given more time and thought than most men to this subject, and the task of extracting the kernel of truth from a great mass of facts had fallen largely to his share. He (the Chairman) had great pleasure in proposing a hearty vote of thanks to Dr. Chapman for his address, and would call upon Mr. Maunder to second it.

Mr. E. WALTER MAUNDER said that, with the Chairman's

permission, he would like to say how privileged he felt himself to have been in having spent much the greater part of his life as a member of the staff of Greenwich Observatory. One thought which had often been on his mind had been emphasized by Dr. Chapman's paper, namely, the continuity of the work of Greenwich Observatory.

It was more than 240 years since John Flamsteed became the first Astronomer Royal, with full permission to provide himself with what instruments he thought necessary at his own expense. Amongst those instruments was a magnetic needle, the forerunner of the magnetic observatory that was established by Airy 80 years ago. Halley, the second Astronomer Royal, as Dr. Chapman had told them, was one of the great founders of the science of terrestrial magnetism; he was the first to make a magnetic chart of the world, undertaking several voyages for that purpose. The latest magnetic chart of the world was that to which, since the War began, Dr. Chapman had devoted himself at Greenwich Observatory.

Airy had founded the magnetic department for the study of magnetic variation, but when iron ships superseded those of wood, and steamers the sailing vessels, fresh problems had to be solved. The best way of dealing with the disturbance of the mariner's compass—due to the presence in ships of great masses of iron, and of powerful machinery in rapid motion—had to be sought out, and Airy took a leading part in that work. Now when seamen had learnt to rely upon the performance of their chronometers as the simplest way of determining their longitude at sea, fresh difficulties had arisen, for electric dynamos were part of the equipment of modern vessels, and the magnetization of a chronometer or watch might seriously affect its performance.

When Dr. Chapman first came to the Observatory, seven years ago, this had become a practical question: "What intensity of magnetic field would alter the rate of a chronometer by one second a day?" and Dr. Chapman at once set to work to obtain the answer, and he succeeded. His work at Greenwich Observatory had therefore been entirely on the lines of its historic continuity, and had been of great practical importance to the nation. And that afternoon he had given in short compass a complete review, admirably clear and simple, of a wide subject, some branches of which were quite new, and in which, moreover, he has himself been one of the

leaders. On these and many other grounds, he (Mr. Maunder) begged to second the resolution.

The resolution was duly carried.

Several members asked questions of the lecturer, Colonel ALVES inquiring "Is there any idea as to the approximate depth of the magnetic poles beneath the surface of the earth? As far as is known are there, as supposed by Dr. Halley, two magnetic poles in each hemisphere—four in all—or only one?" Mr. W. HOSTE asked "How is it accounted for that the northern and southern magnetic poles are not exactly opposite, but are actually in the same hemisphere, seeing that the earth is of regular shape? Is there a tendency for this relative position to vary, and for the two poles to become opposite eventually?"

LECTURER'S REPLY.

The LECTURER replied: "The term 'magnetic pole' usually denotes a point on the earth's surface at which the dip needle becomes vertical. The poles roughly located by Ross and other polar explorers were of this kind. By definition, these lie at no depth, but on the surface. The word "pole" is also used in reference to the "foci" or points of maximum magnetic force, such as that in Siberia. It cannot at present be stated at what depth these local irregularities in the earth's magnetism have their origin.

"Halley's conception of the earth's magnetism, as resulting from the combination of magnetizations in two directions resulting in there being two magnetic poles in each hemisphere, is now known to be too simple to represent the actual facts. It is indeed hardly correct to speak of the earth as possessing a definite magnetic axis and magnetic poles at all, except in the sense above defined.

"The precise positions of the northern and southern magnetic poles are not of fundamental importance in the theory of the earth's magnetism, as they are determined partly by local irregularities in the earth's field. Why the main direction of magnetization of the earth is inclined to the geographical axis, however, and why there are such pronounced irregularities in the surface magnetic force, cannot yet be explained. Similarly it is at present impossible to say whether the poles will in time become opposite to one another.

There is no reason to suppose that this condition, even if attained, would long persist."

THANKS TO THE ASTRONOMER ROYAL.

Lieut.-Colonel MACKINLAY proposed a vote of thanks to the Astronomer Royal for presiding. He said: We have heard how much the Royal Observatory has helped our Navy: it has also very greatly helped the Victoria Institute, for at the present moment three of its most distinguished members are prominently doing so. I have had the temerity to make some observations on the Royal Observatory. I have observed, not only its great and continuous progress, but also the longevity of the successive Astronomers Royal. I venture to think there is some connection between these two facts. I am sure we all unite in expressing a hope that the present Astronomer Royal will maintain the high standard of his predecessors in this, as he does in all other respects; and that he will long occupy his distinguished position, allotting some of the time before him to presiding on future occasions at Meetings of the Victoria Institute.

Having been duly seconded, this resolution was also carried, and duly acknowledged.

601ST ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, JUNE 3RD, 1918, AT 4.30 P.M.

The Chair was taken by Professor H. LANGHORNE ORCHARD, M.A., B.Sc., who explained the absence of Professor Margoliouth, and that the Council had requested him to take the Chair instead of Professor Margoliouth.

The Minutes of the Meeting held on May 13th, 1918, were read, confirmed, and signed.

The CHAIRMAN explained that, though Chancellor Lias was present, the paper would be read by Mr. F. J. Lias, son of the Chancellor.

“GERMANISM.” By the Rev. Chancellor LIAS, M.A.

I HAVE asked leave of the Council to read a paper on Germanism generally. I do not propose to make it altogether a scientific paper, but largely a literary one. That is to say, I shall not aim throughout at a categorical proof of what I say, but simply give some general impressions of the facts drawn from a long experience and not a little study.

I have long felt that the way in which Germany has, during my own recollection, been elbowed, or has elbowed herself, into the front rank, and her taking the place in literature which, in my younger days, was given to Italy, has not been altogether a gain, and demands some explanation. I could not but feel that the country of Dante, Petrarch, Tasso, Ariosto, Boccaccio, and others too numerous to mention, could boast of a language and literature far superior to that of Germany, though I have not, unfortunately for myself, been able to give so much attention to Italian as to German literature.

I ought not to leave the subject without mentioning the vast superiority of Dante, in breadth of thought, in intense religious and moral tone, in knowledge of history and fact, in power of imaginative detail, combined with wondrous simplicity of language, and in thorough independence of spirit, to any German author I have come across. Tasso, again, although coming

far behind Dante in intellectual power, has so finished a style, and so keen an appreciation of beauty, that he cannot be denied a very high place in literature. Even Boccaccio, offensive in moral principle as he often is, has great literary merits, and a strong sense of humour. In ability, however, though not in the moral sense, he must, I think, be held to surpass even Cervantes. I cannot deny that the predominance which Italian music enjoyed over German music in my younger days was not merited, and that the superiority of German music over that of every other nation cannot for a moment be disputed. The favourites of my youth, Rossini, Donizetti, Bellini, Verdi, were frivolous when compared with Bach, Handel, Haydn, Mozart, Beethoven, Weber, and even Meyerbeer, to say nothing of the most recent idol, Wagner. In the sister arts of painting and sculpture, France and England have, I must think, unquestionably surpassed Germany more even than Germany has surpassed them in music.

For a good many years I could not at all understand the substitution of German for Italian literature in the estimation of the inhabitants of this country. But attention has lately been called to the fact that it was chiefly due to Carlyle, who first "boomed," as the Americans say, German literature into the first rank, and then, having influenced English opinion in that direction by his *Hero Worship*, elevated the most morally contemptible and unprincipled of the great men of the world, Frederick the Great—for he really *was* a great man as a soldier and a statesman—into the first rank of the world's heroes. I must say that Carlyle never carried me away by his enthusiasm. I remained in the same mind as I was when I read, as a boy, Canning's *Rovers of Weimar*, and felt not a little contempt for German sentiment and German intellect as there burlesqued. Carlyle's earlier style, a clear and manly English one, was much superior—at least so I thought—to the artificial mannerisms into which his German proclivities led him. I did not like his heroes very much, and when I embarked in his *Life of Frederick the Great*, I fairly stuck fast. I could appreciate Greek history, or Latin history, or English history, or French history, because they are written by and for reasonable beings. But I absolutely failed to tolerate the eccentric style in which Carlyle's *Frederick the Great* was written, though I must admit that Ranke, Mommsen, and Neander are a triad of historians of whom any nation might be proud. As to Jean Paul Richter,

and other men of his stamp whom Carlyle tried hard to “boom,” I must confess that, even as depicted by Carlyle himself, they appeared to me to be rather “dull dogs.”

One other country threatened for a time to wrest literary supremacy even from England herself, and might have done so, were it not for Shakespeare, whose superiority in knowledge of mankind seems to me greater every year I live. Cervantes and Lope de Vega, in the sixteenth century, reached a high level, from which the former can never be deposed; yet I have, I confess, always doubted whether Cervantes intended to express sorrow for the disappearance of knight-errantry from the world, or whether he only meant to cover with the most felicitous ridicule the disappearance of what he regarded as an exaggerated and false moral and spiritual ideal. But Spain lost her literary predominance contemporaneously with her political and martial supremacy of late years, and has made no attempt to regain it.

Of France, in the matter of literature, not much need be said. Her literature is not so much the literature of thought, as of expression. The institution of the French Academy has compelled French authors to express themselves clearly and in scholarly fashion, and to take great care to use words in their proper senses, and to construct their sentences according to laws laid down by authority. Germany, on the other hand, has sanctioned sentences of the most involved character, and has cultivated a style, or an absence of style, which obscures the author's meaning, and often leads him to mistake slovenliness and unintelligibility for profundity. Unfortunately for ourselves, we are just now parting with the natural grace and elegance of our own diction, without adding any strength to our powers of expression. The involved sentences of the German, the slang and cant expressions of the American, the haste with which we think and study, and the still greater haste with which we compose, make too many articles and books of the day a strange conglomeration of false concords, of ungrammatical treatment of words derived from other languages, and of the imposition of an altogether new sense on words with which we have long been familiar.

But this by the way. German literature is generally supposed to be superior in depth of thought to that of other countries, and Germany to be the home of science and the parent of research. That the German is wondrously industrious and ingenious, cannot be disputed. But that the scientists of Germany are superior to

those of other countries, is simply not the fact. Germany, indeed, comes decidedly behind other countries in many branches of science. Kepler, for instance, guessed the true meaning of the periodic times of the planets of our system, but Newton *proved the laws* which governed their motions. Millions of calculations based on his discoveries have been made, and proved correct. And in many branches of research, medical science in particular, Germany has speculated and theorised, while England and other countries have made discoveries. Of Germany as the home of metaphysics, I shall speak presently. I will now briefly conclude my review of her claims to superiority in literature.

As I have already said, we have only to point to Shakespeare to make it clear that our literature is second to none. And intellectual giants such as Milton, Dryden, Gray, Wordsworth, Tennyson, Hobbes, Locke, Berkeley in the domain of poetry and philosophy, support our claim to the first place in modern literature. In the novel, Walter Scott, Dickens, Thackeray, and George Eliot have no superiors, and, I must think, few equals, in foreign countries, and some of Bulwer Lytton's works are quite on a level with the best productions of those already named. I have not met with any German name worthy to be mentioned beside theirs. And they are supported by a crowd of poets, historians, orators, and general thinkers, which may also claim the first place in their respective spheres. Goethe and Schiller are the most prominent writers in German literature. The *Faust* of the former stands first among his works. I fear I can scarcely accord to him so high a place as he has of late occupied in English eyes. That sin has been the unsuspected cause of all the higher morality of mankind, by necessitating resistance to temptation and triumph over evil, and by enhancing the glory of sacrifice, is, I think, undoubted. Yet I have always felt that, though the sin which is the leading feature in *Faust* must be included in the general law just enunciated, it is about the very worst instance of that law which could be selected for illustration. To corrupt the virtue of a trustful young girl is about the basest form of sin which can be conceived, especially when it is the work of a man of experience. And the second part of *Faust* has always seemed to me a welter of confusion. That, however, may be my own fault. I have *read*, but I confess I have not *studied* it. *Wilhelm Meister* filled me with disgust at the cold-blooded and cynical indifference to morality displayed by the hero, as well as the childish imbecility of some of the

details to which the author allows himself to descend. *Egmont* is not a bad play by any means. But to provide a father of a family with a *fiancée*, as Goethe does, in violation of history, is simply a confession of failure. One feels how Shakespeare would have risen to the level of his hero, and provided us with another portraiture, rivalling, if not excelling, his *Othello*, *Macbeth*, *Hamlet*, and *Lear*. As to Schiller, he does not seem to me to rise to a high dramatic level. There is something theatrical rather than dramatic about his heroes, and Max and Thekla, in particular, are sentiment personified. The *Lager* seems to me far the best in the Wallenstein trilogy. It is truly a wondrous photograph, if I may so say, of war and its evils and miseries.

It is, however, to her philosophy that Germany owes her pre-eminence. The long list of philosophers she can produce far outweighs those of any other country. And yet, though I shall be accused of prejudice in saying so, I must believe that her credit in this sphere has been very seriously over-rated. Metaphysics has been called a science, but I contend that, strictly speaking, it has no right to that appellation. Only those forms of research which can be tested by observation and experience—or experiments—deserve the name of "science," because the correspondence between theory and fact, displayed in endless successions of applied tests, enables the inquirer to arrive at practical certainty that his theory is true. But metaphysical investigation does not conform to this rule. A *philosophy* it may fairly be termed, because it is, no doubt, a genuine search after truth. But a science, I believe, it is not, *because there is no testing of results*. Its postulates may be true, or they may not; but there is no certainty about the matter. Sometimes these postulates approach very near the truth, but still they are only guesses. The ancient philosophers could only speculate more or less wisely. Some of them *did* speculate, very wisely and very well. Plato especially. Aristotle did even accumulate facts; but he did not test his theories by comparison with results. His explanations of facts were therefore arbitrary, and not infrequently absurd. Modern psychology may some day grow into a science. But it is as yet little more than a philosophy. Only when its theories arise out of the facts, and are systematically tested by comparison with facts, can they be regarded as demonstrated. One blemish among German metaphysicians is the habit of glorifying formulæ of classification into living realities.

They have revived the Realists of the Middle Ages, who contended for the actual existence of abstract ideas. Their opponents, the Nominalists, contended that abstract ideas were simply formulæ of classification—attempts of thinkers, that is, to distinguish between one class of phenomena or ideas and another. So the Germans and their followers began to talk pompously about the True, the Ideal, the Beautiful, and the like, and clever young Englishmen like Bulwer Lytton were carried away by the fascination of novelty, and plentifully besprinkled their pages with these abstract formulæ. Thackeray (I think it was), on the other hand, made very merry with these would-be philosophers, with their “the Beautiful, with a big B,” “the True, with a big T,” and “the Good, with a big G.” It was often little more than a cheap way of gaining a reputation for intellect. Meanwhile, our English philosophers, the Cambridge Platonists, Hobbes, Locke, and our great Bishop Butler, plodded on their weary way trying to arrange and co-ordinate simple facts in matters purely intellectual or spiritual, and deduce from them a system, without any attempt to soar into an empyrean of metaphysics. Bacon, too, laid the foundations of physical—indeed of *all*—science, and Newton and the mathematicians built on them. From his day to our own, physical science has been making one long stride in its translation of the unknown into the sphere of the known, which we call science. Berkeley avoided falling into one inconsistency by falling into another. He denied the existence of matter, and argued that ideas, and ideas alone, had a real existence. But he overlooked the fact that the word *matter* as much involved one set of phenomena as *mind* did another.

But to return to German metaphysics. That it did lead to some advance in our conceptions of facts outside the realm of nature, cannot be denied. But the value of its contributions to that end have been much exaggerated. When it pretends to arrive at conclusions by isolating phenomena instead of relating them, and imagines that by so doing it adds to our knowledge of things unseen, it makes a serious mistake. And so the speculations of the various German leaders of philosophic thought, as well as their various definitions, were quite as often barriers to progress as they were progress itself. In theology this is very evident. God, we were told, was “the Infinite,” “the Absolute,” and “the Unconditioned.” Now, each of these statements is directly contrary to fact. They strip the God of Scripture and

of the Christian, not of His Attributes and His Prerogatives, but of His Personality, and propound bare negations instead of Him. The God in Whom we Christians believe cannot be "the Infinite," because *no evil whatever* is included in His Being. He cannot be "the Absolute," because the word in its exact sense means that which has *no connexion with anything else*, and we are only able to conceive of God as our Creator and Preserver, and can know of Him only through His relations to His creatures. Once more, He is not "the Unconditioned," because in that case He could have no Attributes of any kind, but merely such negatives as have been mentioned, which make one shiver, and which are utterly irreconcilable with the Love which the Christian scheme represents as the first and greatest Attribute of Deity. Imagine yourself asked to love and adore "the Infinite," the Absolute," or "the Unconditioned," or all three together! And if He be "all three together," then "there be three gods or three lords." Surely any rational conception of God involves the fact that He lives under conditions necessary to His Being. Not only Christianity, but even some other religions and philosophies, have believed Him to be Greatness, Goodness, Wisdom, Knowledge, Life, and Love, or at least Beneficence. The belief of the Christian regards Him as conditioned in these and many other ways. There is, to put it mildly, a very great deal to be said in favour of that belief. And if German philosophy offers us no better solution of the Universe than one which demands the denial of the first conditions of a Creator and Preserver of all things, the sooner we dismiss German metaphysics and German theology the better.

It is true, no doubt, that some metaphysicians—Dean Mansel, for instance, explained "the Absolute" as that which had "no necessary relation" with other beings or ideas.* But that was only an attempt to wriggle out of a difficulty, and a very unsuccessful one withal. For "Absolute" either means unrelated or it has no definite meaning whatever. That the God we worship is neither "the Infinite," "the Unconditioned," nor "the Absolute" has already been shown. I was rather blamed years ago, at a meeting of this Institute, for speaking with approval of Dean Mansel's Bampton Lectures, which adopt these conceptions. I defended myself in my paper of 1883, just referred to. I will, therefore, only point out now that Dean Mansel, great

* I must refer to my paper read on February 5th, 1883, for my authorities.

thinker though he was, was involved in a serious inconsistency by the deference he paid to the German metaphysicians, and that Mr. Herbert Spencer made use of that inconsistency to bolster up his proof that God was "unthinkable" and "unknowable." Yet some of Dean Mansel's points in his Bampton Lectures were incontrovertible, and magnificently put. The fact, however unfortunate, that his undue deference to German metaphysicians enabled Mr. Spencer to make use of him as a champion of Agnosticism, does not destroy the value of his other work. It is on this ground that I was able to rescue his memory from that reproach in my paper of 1883. For Mr. Spencer not only showed that, on the abstract idea principle, God was "unthinkable," but he delivered himself up to be smitten "hip and thigh" by his antagonists by adding that a "First Cause," and not only a First Cause, but space, time, matter, motion, force, and consciousness, were also "unthinkable." It is quite clear that, whether all these ideas are "unthinkable" or not, we *do* "think" a good deal about them, and should be madmen if we did not do so. Nor is it difficult to show that it is not unreasonable to think about things of which we do not know *everything*. Though we do not know everything about a great many things, it is still absolute folly to refuse to know as much about them as we can. Moreover, what Mr. Spencer meant was, not that his category of facts was altogether "unthinkable," but only *ultimately* unthinkable, which is a very different thing. So I ventured to point out that, as with space, time, matter, motion, and the rest, if we could not know *all* about them, we could at least know *something*. And if we cannot know all about God, we can at least know enough about Him, to enable us to honour and obey Him; and this is a good deal. I further suggested that the reason why all these other facts were ultimately unthinkable was because each of them, if pursued to its source, ran up into the mystery which enshrouds the Ultimate Being of Him Who created them.* Dean

* I did not fall in, until much later than my papers to which I have referred, with a passage from that wise, honest, and far-seeing Divine of the fifth century A.D., Theodoret, who sums up the whole Agnostic controversy in a few lines. "Do you know God?" says the Anomœan to the Orthodox. "Yes," replies the Orthodox. The dialogue goes on. "A.—Do you know Him as He knows Himself? O.—No. A.—Then you do not know Him. O.—I know Him as it is possible for one in the nature of man to know Him. A.—Then you know Him in one way and He knows

Mansel also stirred up the indignation of my old master, F. D. Maurice, whose lectures on English Literature and Modern History I attended for three years at King's College, London. Mr. Maurice showed unusual warmth in this controversy, doubtless because Dean Mansel had substituted a colourless metaphysical abstraction for the God Whose first attribute is Love, whom Maurice, with all the intensity of his being, had made the centre of his religious belief. To turn the God of the Bible, the Creator and Preserver of the Universe and all that is in it, the All Father, Whose surname is Love, into a mass of negatives, which included sin, crime and folly within their scope, would have been, in my old preceptor's eyes, to have deprived him and all the rest of mankind of the only belief which makes life worth living.

I will not go through the various phases of Immanuel Kant's metaphysics. Enough has been said already to show what absurdities it includes, and I may touch on one or two which are marked by a slovenliness which is the very opposite of the careful, precise, if very often narrow-minded and one-sided methods which usually characterise German philosophical thought. He regards the primal conception of God as *ens originarium* and *ens summum*. He confesses that his definition does not involve a determination of the relation of this Being to other beings, and therefore “leaves us in perfect ignorance as to the existence of a Being of such superlative excellence.” And he goes on to say that “the concept of God, in its transcendental sense, is the concept of the highest reality as one, simple, all-sufficient, eternal, *et cætera*.”* Surely this is a very unsatisfactory way of treating the greatest of all subjects! On another failure of Kant's metaphysics I have said some severe things in my paper of 1902. His attempt to reduce all speculative ideas to abstract conceptions is inadmissible. I have already shown how utterly such an attempt fails when applied to the Being of God, Who enfolds so many qualities and so many facts within His all-embracing Personality. I may point out also how both Mind and Matter reject the abstract method of investigation. Apply it to Mind, and you find endless conceptions which are multiform, not simple.

Himself in another way. O.—Certainly.” Some have doubted whether the dialogue is Theodoret's, but at least it shows the same clearness of vision as enabled him to steer his way through the intricacies of the Nestorian and Monophysite controversies.

* I have quoted from Dr. Max Müller's Translation, Part 2, pp. 498, 499.

Apply it to Matter, and again you are confronted with complex substances whose various characteristics you must take into account. Even the adjectives Objective and Subjective, so often used by persons entirely unacquainted with their meaning, were, I believe, originally used in precisely the opposite senses to those which they now bear, so that what we now call Objective meant what Subjective now means, and *vice versa*. Nor, so far as I am aware, has any reason been given for preferring one form of expression to the other. For a discussion of the *ding an sich* I must refer the reader to what I have said in my 1883 paper, on the attempt to reduce *composite* conceptions to abstract ones. I might fill pages with the enumeration of the slovenliness and ineptitude of Kant's metaphysics. The worst of them all is his neglect of definitions, which deprives his philosophy, useful as it is in the way of suggestion, of the title to belong to the exact sciences.*

To pass to other philosophers: the erratic treatment of the first of all subjects is to be found in Fichte's representation of God as the "moral order of the universe and nothing more," and as "beyond origin" and therefore non-existent, because "existence implies origin." Schelling again says that the "Unconditioned," by which he means God—a very large assumption surely—"can be found neither in the subject nor the object, but only in the Absolute Ich." This, he goes on to say, "is conceived of because it is conceived of," and adds that His existence is as incapable of being proved as our own.† This reminds me of the story told of our own Browning, that when asked what he meant by a certain passage, replied that when it was written there were two who knew what it meant, the Almighty and Robert Browning, but that now only God Almighty knew. Hegel is famous for his supposed discovery that to be and not to be are identical. But it is not generally known that he was anticipated in this discovery by the Gnostic Basilides, who lived early in the second century A.D., and taught that "pure being was pure nothing."‡ I once (in 1856) met a Prussian gentleman who corrected my ideas about Hegel's teaching. "By identical," he said, "Hegel did not mean

* If I mistake not, Schiller, his friend and pupil, complained of his carelessness in philosophical inquiry.

† For reference, see my 1883 paper.

‡ He taught that God was absolute non-existence, because "all idea of Being involved limitation."

‘the same,’ but simply ‘*in the same category.*’” But Hegel goes further than this, and even when he laid down his postulate, he was either talking downright nonsense or enunciating the simplest of truisms. I may leave this part of my paper by saying that, if this is the best German philosophy can give us on the most important and most fundamental of all subjects, what security can we feel in its power to touch the heart and guide the conscience on any subject whatever?

The real truth is that if we take German criticism and German theology for generations past, we find no real breadth of view, no genuine discovery, but only one-sided research and negative theology.* The true scientific critic of Scripture must *start with facts*. He must admit, for example, that the Bible, though written by many authors, and at various times, is, and has long been, the Book of all books. No other can approach it, far less surpass it. Its literary merits are as varied and remarkable as its moral power, and only the extreme dexterity with which the German critic can divert his readers from these facts, by throwing dust into his neighbours’ eyes, can keep him above water any longer. Nor can he prevent us from seeing, if we care to look for it, the fact that there is *one message* throughout

* Mr. Harold Wiener, whose voice has been heard in our discussions, has lately said, “The documentary and evolutionary theories of German criticism,”—he is speaking of the Old Testament—“were based on three main props, indifference to the facts of textual history, the scantiness of the archæological materials, and absence of the most rudimentary training in legal methods.” The one point bearing on religion in which Germans have done their best work has been the textual criticism of the New Testament. It is just the point where German unwearied patience and minute attention to detail is likely to tell. But even there, Tischendorf’s partiality for the MS. which he himself discovered, as well as the craving for novelty in which the German Professor so often indulges, has injured his reputation. The “Western text,” which he and his followers brought into vogue, is now thought over here to have been the text generally accepted throughout the world, until a new departure took place about the time of the Nicene controversy. It will be found, I believe, that at both the Ancient Universities a considerable, though by no means slavish, reaction is taking place in the direction of the *Textus Receptus*. It is only fair to add that philology owes Grimm’s Law to the care and diligence of the Germans in matters of detail. What was mere guess work, and as such ridiculed by the wits, became, after this discovery of the wearing down of certain consonants in language through long periods of time, a science, because it was compared with the facts, and found to correspond with them. This is an instance where attention to detail was not inconsistent with principles capable of broad application. It is in a *clear insight into principles* that Germans are so often at fault.

its pages, ever growing in moral and spiritual intensity, until He came, in Whom it all centres. Neither can we fail to see that there is a marked difference between the Bible and all the other religious books of the world. Even now, its contents strike in quite unique fashion the heart of all who are striving to "find out God," as the records of the Bible Society prove to this very hour. In spite of the mistakes of Christian believers, in spite of the bitterness of religious controversy, the influence of the Bible is still growing, its empire wider than ever. The German critic, unlike David, goes out with his weapons unproved. He has never tested his powers of dividing his authors into "sources," by inquiring whether his canons will work when applied, for instance, to Beaumont and Fletcher, Shakespeare and Fletcher, Dickens and Wilkie Collins, Ereckmann and Chatrian. The Baconian theory of Shakesperean authorship, though run on German lines, has broken down. For German methods are essentially one-sided, and have to be revised according to the object the critic proposes to himself.* All the learned and honest treatises on the Evidences of Religion and the genuineness of the Scriptures are flung aside by the Germans as mere trash, and all the interesting, and to most minds convincing, arguments from undesigned coincidences are similarly treated. The argument from prophecy, especially unfulfilled prophecy—far more irresistible still—is never confuted, is not even approached. It is thought sufficient to treat with contempt the astounding correspondence between prophecy and fulfilment. Yet the manifold attempts of the German school to attach any rational meaning to the passages which, from Genesis iii to Malachi, have testified throughout the ages to the Promised Redeemer, are not worth the paper on which they are written.†

And what is the result? The entire disappearance from Germany, not only of belief in revealed religion, but of the most elementary morality of Western nations. Crimes so atrocious that not only Christian but heathen nations have emphatically condemned them, are systematically practised, without the

* Thus, when the Priestly Code (P) becomes the latest instead of the earliest of the "sources," all Knobel's careful and ingenious division of Deuteronomy between "JE" and "P" has to be thoroughly revised.

† Germanized Oxford has published text-books in which the whole argument from prophecy sanctioned by the Lord and His Apostles has been systematically ignored.

slightest condemnation, even from ministers of religion.* We are apt to think Homer's Achilles was a downright brute, but what would he, or any other of the Homeric heroes, have thought of the dastardly cowardice and refinement of cruelty combined in sending women, children, old men, and captives in war to go before their valiant (!) soldiers as a cover from the enemy's weapons? What would they have thought of aeroplane expeditions to undefended towns, and the slaughter of defenceless persons and even babies in their cots? What would they have thought of sinking unarmed vessels, full of unarmed men, women, and children, and leaving the helpless creatures to struggle for hours in the benumbing waters? What would they have thought of sinking hospital ships, full, not only of wounded soldiers, but of doctors and nurses ministering to their needs? And, to go no further in the hideous catalogue of horrors, what would the Homeric champions have thought of cutting down the fruit trees in the land out of which they were about to be flung, and which they ought never to have entered, in order to revenge themselves on the poorer class of inhabitants who had never done them any harm? Has not the Creator of heaven and earth warned us that “a tree is known by its fruits”? Yes, this terrific demoralization of what was once, with all its faults, a great people; this degradation, in time of war, of the methods of conducting it for centuries by peoples calling themselves Christian; this appalling downward plunge, even in times of peace, into depths of vice and crime long unheard of, which Germany has undeniably experienced—all this, and more beside, is due to the belittling

* The Professors of Theology at Berlin, Munich, Halle, Hamburg, Göttingen, Frankfort, and elsewhere (including the famous Professor Harnack, so long idolized by our Germanizers here, and before whose unproved *dicta* English scholars have for some years been content to prostrate themselves) have addressed a document to “Evangelical Christians” which defends the atrocious and indescribably inhuman conduct displayed by the Kaiser and his minions toward those under their heels. The organ of the Swiss “Old Catholics,” some little time back, quoted a Roman Catholic publication in England, which insisted that “the Kaiserism and Militarism of Prussia stands in open hostility to the Spirit of Christ,” that “the German method of carrying on warfare is in direct opposition to the teaching of Christ,” and that “its philosophy directly springs from the divisive tendencies of the teaching of Luther.” Unfortunately, Austria, now the “eldest son of the Church,” is as much concerned in this anti-Christian outbreak as Germany, and the Pope himself dare not contradict the savage ethics of the German Kaiser.

of the historical, intellectual, moral and spiritual authority of the one Book, a practice which originated in Germany, but has found far too many advocates in our own country. Let us be warned in time. German critical methods undoubtedly display great ingenuity and great industry; but they have neither solid foundation, nor sense of proportion, nor *common* sense; and they attain their end by the critic resolutely shutting his eyes to what he does not want to see. A German professor must in these days obtain his position by saying something which nobody has ever said before; and in ninety-nine cases out of a hundred, to say what is new at this stage of the world's history is to say what is not true. Historical research confirms former discoveries: it does not ridicule them. And it never rejects them without giving reasons for doing so. Physical science corrects, but never ignores them.

Among other illustrations of the character of German thought may be mentioned the emphasis it at one time laid on the *Zeitgeist*, or spirit of the age. The progressive advance of mankind in knowledge and morality, from this point of view, was not supposed to result from the building on the foundations laid for us by the discoveries rather than the mistakes of our forefathers, but on the flinging aside in each age of the conclusions of the last, and starting afresh on the road to perfection. Fifty years ago our submissive English followers of German Kultur were prattling merrily about the *Zeitgeist* and the duty of listening to its voice. Mr. Matthew Arnold was among the foremost of these, and he was unsparing of his ridicule of those silly Bishops of the Church of England who imagined that God was a Person, and in his admiration of the criticism which had "conclusively proved" that St. John's Gospel was compiled "by the yard" out of writings of Philo by a Christian writer of the second half of the second century. This conclusion has been abandoned by the German critics of to-day, and Professor Harnack, the most famous among them, has candidly owned that the Fourth Gospel was written either during the lifetime of St. John, or within ten years of his decease. While, as to the *Zeitgeist*, the recognised Christian teachers of Matthew Arnold's day, and for many years afterwards, were almost unanimous in their warnings against the anti-Christian teaching prevalent in their time. But their warnings were disregarded, and the present century opened with a chorus of Germanizers who greeted its coming with a pæan of rejoicing over the new era, which was to cast behind it

all the worn-out ideas of their ignorant and bigoted forefathers, especially in matters of religion, and to inaugurate the new era by flinging aside all the first principles which Christians had revered before, and in laying down a new set of them of which those same ignorant and bigoted forefathers had never heard!

In conclusion, I will add one or two specimens of the above-mentioned “first principles” of Christian evidence, which the Christian Churches of the past agreed to recognise, but which the German critics and their English admirers believe themselves justified in ignoring altogether. They may be multiplied to an indefinite extent.

1. The German critics have represented the book of Deuteronomy as having been written by some unknown person, who—he must have been very sanguine—left his book about in the Temple in the hope that it might some day be found in the Temple, and be supposed to be the work of Moses. But Deuteronomy betrays none of the anxious effort of the forger to make it evident that it was what it represented itself to be. I may appeal to any man of impartial mind as to whether it does not ring with truth all the way through.* No writer of the Old Testament but Isaiah displays such splendid touches of eloquence, anxiety, and deep feeling. No man in the position of a forger could have written so well or so freely. He would have feared detection dogging his steps every moment, and would display embarrassment at every turn. And as for his book being “found” in the Temple, it was doubtless built into its fabric. Such has been recently discovered to be the Egyptian custom in the age of Moses and before it, and the tone is most emphatically that of a man who has set a very high and holy standard of conduct before a nation, and fears their defection from it. Deuteronomy, moreover, like Genesis, betrays an acquaintance with Egyptian literature, which suggests a Mosaic origin for both books.†

2. The Germanizing critic assigns certain passages of the Pentateuch to the “Priestly Code,” a work assumed to be written either during the Captivity or after the Return. He gives no proof for this, but practically lays claim to an infallible instinct. But there is by no means agreement enough among

* Note also the occasional annotations of a later writer which occur are distinct proofs of its antiquity. See chapters ii-iv.

† I have shown this elsewhere.

the critics to justify this claim.* The "conservative" critic maintains that this Priestly Code displays a miraculous insight into the Divine Scheme of Propitiation, as revealed by the Saviour in His Redeeming work. As the "Code" in question was demonstrably not written later than the Crucifixion, it is certainly for the Germanizing critic to explain the marvellous prevision of its author. The prevision was shown in the fact that the sacrifices appointed were (1) An offering of the *whole victim* (Lev. i), typifying an offering of the whole life and being of One consumed by a Divine Power of Love; (2) (Lev. iii) of a peace or thanksgiving sacrifice in which only a part of the victim was offered and which was partaken of by the offerer; (3) (Lev. iv-vii, 10) of a sin or trespass offering, one peculiar feature of which was the burning of the body of the victim outside the camp, typifying the *destruction* of the sin to be atoned for; (4) (Exod. xii) the sacrifice of a lamb without blemish and eating the flesh of the sacrifice; (5) (Lev. ii) a meal offering, which seems to indicate that sacrifices were either acceptable to God, or necessary, or both, which *did not involve the death of a victim*. *All these various views of the Sacrifice of Propitiation offered by their Master, are found combined in the writings of the contemporary disciples of the Lord, and included in the authoritative books handed down in the Church from the beginning.*

3. In the *second* of two letters addressed by St. Paul to the first Church to which he ever wrote, the following words occur: † "But we ought to thank God always about you, brethren beloved by the Lord, because God took you from the beginning unto salvation (or, *safety*), in sanctification of spirit (or, the Spirit), and faith of truth (which may mean trust that the Apostle's message was true), unto which he also called us through our Gospel, unto an acquisition (Gr., anything *acquired by a process*) of the glory of our Lord Jesus Christ. Well, then, brethren, stand, and hold fast the traditions which ye were taught, either by word or our Epistle; but may the Lord Jesus Christ Himself, and God our Father, Who loved us and gave us eternal encouragement and a good hope in favour (*i.e.*, the favour in which the genuine members of the visible Church

* See Professor Orr, *The Bible Under Trial*, IV. "Settled Results" in Criticism.

† I translate them from the original, as they are so remarkable there.

stand by virtue of the calling which God and Christ have been pleased to give them), encourage your hearts and establish you in every good work and word.”*

This passage was written to a body of persons with whom the Apostle St. Paul had been staying for about three weeks. It can hardly be denied that the words are quite astonishing, and that they could hardly have been written unless under the conviction that some very great and mysterious power lay behind them. This conviction has proved to be well founded. When we add that some 1850 years have taken place since these words were written, and that a congregation of persons still exists at the place who claim that the passage refers as completely to them as to those to whom they were originally addressed, the fact seems still more significant. If we add the further fact that for some four or five centuries Thessalonica, or as we now call it, Salonica, was conquered and held by a heathen nation, and that it only returned to a Christian ruler about four years ago, the tone of confidence displayed by the author of the Epistle in his extraordinary statement seems more significant still.

The chief point in each of these lines of argument is this. The proofs are *scientific*; and in spite of many—too many by a great deal—asseverations to the contrary, by the German School, the German methods are *not* scientific. As we have seen, the three requisites of scientific discovery are (1) that the hypotheses used to discover a law should be suggested by observation; (2) that the results of the hypotheses should be compared with observed facts; and (3) that if, and *only* if, they agree with the observed facts they may be regarded as truths.

The first case involves a psychological problem. Can the German School present us with a single instance of a deliberate forgery which is so glowing with moral energy, so full of the deepest conviction, so replete with moral excellence, and so thoroughly permeated by holy desires and purposes, as is the book of Deuteronomy throughout? If there is little *direct* evidence that Deuteronomy was written by Moses, there is none whatever against it. But we have also the direct evidence that the book of Deuteronomy has been regarded as the work of Moses for at least 2500 years, and possibly for nearly a thousand years more. There is also another difficulty to be overcome, the

* 2 Thess. ii, 13-15. Many copies have “word and work.”

demonstrably great difficulty of grafting a new religion on an old one.

The second and third cases involve a complete scientific demonstration. The Mosaic Law, whether given to the world five or fifteen hundred years before Christ, contained a system of sacrifices *every single idea in which* is developed in the Christian Scriptures, which, from the first century of the Christian era to the twentieth, have been handed down in the whole Christian congregation—to quote the words of one of the writers—as the work of “eye-witnesses and ministers of the word.”* Such testimony, *in such a society*, may be easily pooh-pooed, no doubt; but with intelligent men it is not easily invalidated. In the second case we have in the rites of a religion professedly preparatory for another, the adumbration of a great and necessary Truth—that of Propitiation; as well as the acceptance of its principles when the religion so clearly prophesied and foreshadowed actually appeared. These characteristics of the Lord’s Atonement have remained a striking feature in the Christian system for nearly two thousand years. In the third case, we have the most prominent propagator of a new religion speaking with the utmost confidence at a very early period of his ministry, yet in language which—humanly speaking—it was quite impossible to expect those to whom he had proclaimed the religion of his Master either to understand or believe. Yet this congregation has subsisted from the first century of Christianity to the twentieth; has passed through some most painful and prolonged experiences and persecutions, and has, some three or four years ago, become once more a part of a Christian nation. Surely a reasonable man has a right to infer that a religion so long hoped for and prepared for before it was revealed—so long an embodiment of the truths proclaimed by its Master—must have come down, as it claims to have come down, from the Lord in heaven. Nor must we forget that not merely these three instances of an abiding fact, but one hundred times as many,

* The fact that there were doubts in regard to one or two of them does not materially affect this general statement. The Christian advocate has been too sensitive about objections. In cases similar to this the general consent of the whole community would be regarded as evidence enough. Nor is the objection that the Apostolic age was an “uncritical” age, a sound one. That age was one of high civilization, and no more inclined to credulity than the age of the German critic.

or even more than that, can be found by a careful study of the Scriptures of the Old and New Covenants.

One thing I cannot help saying before I conclude. It is rather a serious reproach on our Christianity that interest in Christian Evidence is so slight. Christians in all ages have been attracted to the religion of Christ from different standpoints. Some have been drawn to it from its emotional or spiritual side, which appeals to the affections. Others are influenced by its lofty tone of morality, which appeals to their consciences. Others, again, are most drawn to it by its evidences. These last, in early days, were supposed to consist chiefly of miracles. Nicodemus, for instance (John iii, 2), seems to have been most struck by these. In later days the argument from miracles retires into the background, and the steady growth of Christianity and the moral elevation attained by Christian communities has largely taken its place. We hardly pay sufficient attention to the fact that Christian societies, in proportion to the purity of their Christian teaching, are a "power which makes for righteousness" greater than any other the world has ever known. The third class of believers has not received the help which it ought to have received from the other two classes. The study of Christian Evidence has therefore become an expensive luxury, which men and women of an inquiring mind cannot always afford. Books *against* Christianity are eagerly bought by persons desirous of novelty. Books and other publications in its defence are not sought after save by Christians who have the time, the inclination, and the means to study them. But the Christians who are such, by their home training, or from attraction to the beauty of Christ's character, or the soundness of his moral teaching, should take care that their less fortunate brethren are not debarred from the study of the Evidences of Christianity. Books on those Evidences, and for the genuineness of the accounts of God's dealings with mankind as contained in the Scriptures do not sell, because in these days few people ever hear of them or recommend them. And no serial publications at present exist in this country devoted to the study of Christian Evidence, or to the support of the authority of its credentials. Even this Institute, which has for more than half a century done such yeoman service for our holy religion, has been forced seriously to contract its work for Christ and His people, ever since this terrible and most anti-Christian war began.

Is it too much to hope that, at least at the conclusion of this

desolating plague in our midst, we shall see believers of every type vying with each other in the great work of enabling every Christian, whatever his station and opportunities, to "give a *reason* for the hope that is in him" ? Scepticism has for some time been gaining ground among us. It is not a time for us to neglect any means of furthering the cause of our holy religion. It is our duty to maintain Institutes such as this, and any other of the aids which we need in order to "fight the good fight of faith" in the way the Christian Church ought to fight it, until the voice of detraction against the grandest of all books is reduced to silence. It is forty years ago since I read my first paper here. I am not likely to contribute another. I shall be pleased if my last-recorded words in its Proceedings are a plea for the hearty support of an Association which has done so much to maintain the ascendancy of Christianity in an age of astounding discoveries and much unsettlement of men's faith.

DISCUSSION.

Lieut.-Colonel ALVES : We should all be grateful to Chancellor Lias for helping to tear away from Germanism the mask which has for so long and by so many been considered as a revelation of Deity. For an idea to be German was quite enough : it was certainly the best, and probably the only good one.

Germany has undoubtedly produced some very great musical composers, though Haydn, Mozart (of Jewish origin), and Schubert were Austrians. But it must never be forgotten that in the formation of the great classical school in which all, up to and including Beethoven, were trained, Germany had no hand : it was Anglo-Italian. Moreover, Handel and Haydn received their great training in Italy itself. Beethoven, trained in this school, was the first, and incomparably the greatest, of the romantic, or sentimental school.

Musical decadence began in Germany. Owing to his classical training, Beethoven never could have sunk to its greatest depth.

Adverting to p. 141 of the paper, I ask : What are metaphysics ? Is not Christianity *the* great metaphysical science ? and is it not emphasized in Scripture, and borne out by early Church history, that Christian life and Christian brotherly love were evidences to the scientific nature of what we may call "Christian metaphysics" or

“the life science” ? Christian evidences (see p. 155) are generally too abstruse for the hard-worked “man in the street,” not over-trained to reason ; and such faculties as he has are too often paralyzed by conventional theology.

Mr. THEODORE ROBERTS : We must be careful that patriotism does not bias our judgment ; but, after making every allowance for this, I think it must be admitted that never since the civilised world was Christianized, has there been such a lack of morality in the conduct of any war. It must be remembered that in Germany Professors hold a much more important place in public opinion than they do in this country, and the dictum of a Professor is on a par with the judgment of a High Court Judge here. It is recorded that Lord Palmerston once outraged Queen Victoria’s feelings by saying that Prussia was a land of damned Professors, and I think that in this, his blunt common-sense instinctively led him to a right judgment.

In countries like Spain and France the priests have in the past kept the Bible from the people, but it is a much more serious thing to suggest that it is worthless—the outcome of the Higher Critical method. One is to poison a man’s food, while the other is merely to keep it from him. If the authority of the Scriptures be destroyed in the minds of the people, there is no restraint left, as it is only by the Bible that we have any definite voice from God.

The Rev. Prebendary Fox said that a peculiar feature of the mentality of German criticism, and that of those elsewhere who followed it, was its one-sidedness. Too often facts which stood in the way of their conclusions were ignored or “re-interpreted” to fit in with the results said to be already assured. In illustration of the pseudo-critical treatment of Deuteronomy, he referred to the disregard of evidence given to its authority in the record of the Temptation of Jesus Christ, the historic character of which is not seriously disputed by any competent and impartial scholar. Had that book been a pious fraud, as commonly asserted, no being on earth was less likely to be ignorant of such a fact, or less likely to lose the advantage of his knowledge, than the Tempter. The only escape of the hostile critic from the dilemma is, to shut his eyes, as he is accustomed, to the evidence which conflicts with his theories.

Some remarks having been made by Dr. Schofield, Rev. J. Tuckwell, and Mr. S. Collett,

The CHAIRMAN said : We recognise in the Paper, not only ability, thoughtfulness, learning, but also a real endeavour to be fair to that great nation with whom we are unhappily at war. There is no reasonable doubt as to Germany's high place in music and history. To music and history should be added philosophy. Kant (the German Plato) has a three-fold claim upon our gratitude by (a) his *ethical* proof of GOD's existence as our moral Governor and Judge ; (b) his insistence on the *supreme* authority of conscience ; (c) his doctrine that the moral *end* is the production of the good *will* ; thus rightly placing morality upon a religious basis.

With regard to the question : " Can we describe GOD as ' The Absolute,' ' The Infinite,' ' The Unconditioned,' without destroying ' His Personality,' and propounding ' bare negations,' the reader of page 143 of the Paper may perhaps be unconvinced by the argument employed, or may be disposed to think that the terms are not used in their usual sense. But we shall thoroughly agree with the Author's masterly demolition, on page 144 of Spencer's " unthinkable " argument, and with his splendid criticism of the dominant school of the Germanizing Higher Critics. By undermining the faith of many in the authority of the Bible, these critics prepared the way for Nietzscheism, which undermined the authority of Conscience, so leading to the atrocities and horrors of War.

Votes of thanks having been accorded, the meeting closed at 6.10 p.m.

THE 602ND ORDINARY MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, JUNE 17TH, 1918, AT 4.30 P.M.

THE RIGHT HON. LORD HALSBURY, F.R.S. (*President*),
IN THE CHAIR.

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

He also announced the election of Mr. F. J. Lias as a Life Associate.

THE FUTURE OF EDUCATION: A SURVEY OF RECENT EDUCATIONAL THEORY. By D. S. MARGOLIOUTH, D.Litt., F.B.A. (Chairman of Council of Cherwell Hall Training College, and Milham Ford Secondary School).

“**E** DUCATION, a great thing, a very great thing! I never had any,”—these words are put by Dickens in the mouth of a man who, starting with nothing, had become not only a successful merchant, but besides a pattern of all the virtues. And indeed one who endeavoured to learn human nature from the tales of this novelist would gather that the wild human plant produces more fragrant flowers and more wholesome fruit than that which is nurtured in a conservatory; the former in his romances is apt to display not only astuteness and self-reliance, but serenity of temper, fidelity and self-sacrifice; the latter resembles a derelict, incapable of maintaining a course, and a danger to navigation until it is submerged. In spite of this experience—for we must suppose his fictions to be based on observation of actual occurrences—Dickens recommended compulsory education as a panacea for crime; though his eminent contemporary Alison, whose *History of Europe* is a sermon in eighteen volumes against democracy, pointed to the fact that in Prussia no less than twelve times as many crimes were committed

in proportion to the population as in France, where education was not diffused to a third of its extent in Prussia, and declared that this demonstrated equally with the experience of every other country the sedulous care which it is indispensable to take before that great instrument of power is put into the hands of the people.* Whereas, then, according to the representation of Dickens, education makes people stupid and helpless, according to Alison it is likely to render them actually criminal. Another contemporary, the learned and mighty thinker Buckle, scornfully pointed to State control of education as a symptom and a cause of political incapacity in France.† The government of this country has taken these risks, and since the time of these great writers has been devoting more and more attention to organising and enforcing education; our expert Minister of Education admits‡ that his far-reaching scheme represents the continuation and development of his predecessors' plans. Far-reaching as it is, it has already been outstripped by the demand of the Labour Party§ that every boy and girl and every adult should be within reach of all the training of which he or she is capable without class distinctions or privileges. This demand is perhaps best interpreted by the propositions which are put forward in explanation of the formula "Equality of Educational Opportunity" by the Editor of the volume devoted by the American Academy of Political and Social Science to Educational questions:—

1. There should be an efficient school reasonably accessible to every child who may profit by its ministry.
2. The school system should be so organised and conducted as to minister with equal diligence to the needs of pupils of each of the several grades of natural ability.
3. The programme of school studies and activities should be so many-sided as to show equal deference to the tastes and interests and needs—vocational and cultural—of all.
4. The school system should be so organized as not to encourage or permit the segregation of social classes, and should be so conducted as not to exemplify an undemocratic control of student activities.
5. The administration and control of our educational systems should be vested jointly in central and local authorities, and the highest intelligence and best judgment of expert and laymen should be brought to bear on the formulation and execution of general educational opinion.

* *History of Europe*, ed. 1854, vi, 248.

† *History of Civilization*, ed. 1878, ii, 125.

‡ *Educational Reform*, by the Rt. Hon. H. A. L. Fisher, p. 50.

§ See *The Times*, May 9, 1918.

6. All the educational agencies of the local community, of the state and of the nation should be brought to bear upon the post-school education of both adolescents and adults.*

The proposals of an English expert, Mr. F. J. Gould, are about the same as these, though in one matter they go beyond them. He suggests that all teachers should be made civil servants; that the entire boarding-school system should be swept away; and that the community, instead of flinging its young citizens into the streets to go hunting for employment, should discover the capacity of each, and assist each to a definite bench in the vast material and spiritual workshop.†

These proposals seem decidedly drastic, and the rate at which we are moving may be gauged by the fact that the Continuation Schools which form so notable a feature of Mr. Fisher's Bill are already condemned as inadequate by some American experts, who describe them as palliatives and makeshifts, dealing with conditions which ought not to exist, patching up some defects of the present system, but failing to overcome them.‡ Mr. Gould's proposals are contained implicitly in that of the Labour Party which has been quoted. The great boarding schools are doomed thereby, because of the costliness of the education which they provide. Everyone cannot have it, therefore no-one should have it. The need for uniformity renders it necessary that all teachers should be government officials: since instruction, like food, has to be rationed, there might otherwise be undesirable differences in quantity and quality. The theory that the State should also find employment for everyone follows logically. The State has bestowed elementary instruction, and this has proved no panacea for either crime or poverty. Indeed some of the results have favoured the opinion of Alison that education is a public danger. A medical writer, whose sincerity is evinced by his impartial recommendation of contradictory counsels, states that the three R's have filled many a prison. Most of the criminals examined have passed average standards; some have done well.§ *In none, he adds, have I found school influence producing any valuable effect. Had they been in good private*

* *New Possibilities in Education*, Philadelphia, 1916, p. xii.

† *British Education after the War*, pp. 11, 26, 28.

‡ J. & E. Dewey, *Schools of To-morrow*, pp. 310, 311.

§ Andrew Wilson, *Education, Personality and Crime* (1908), p. 147. Compare W. Clarke Hall, *The State and the Child*, pp. 4 and 193.

schools some would probably have been saved, and the others would have been better without the three R's. His statistics show that compulsory education has been followed by a very serious rise in the percentage of insanity.* Crime decreased at a far greater rate between 1855 and 1860 than at any period since 1870, when compulsory education was introduced. It is, of course, possible to hold that for these unsatisfactory results it is not the education, but some method of conducting it, which is to blame; and we find this view stated with pathos in the Presidential Address to a Mathematical Society, where perhaps we should not expect impassioned rhetoric. *When one considers in its length and in its breadth the importarce of this question of the education of a nation's young, the broken lives, the defeated hopes, the national failures which result from the frivolous inertia with which it is treated, it is difficult to restrain within oneself a savage rage.*† All this could be avoided if the system recommended by the speaker were followed. Emphatic condemnation of present educational methods is to be found not only in the books of those who regard the schoolmaster as partly fool, partly knave,‡ but in those of actual schoolmasters, who probably take a more lenient view of their profession.§ More often the train of reasoning employed takes the following form. The State furnishes the keys of knowledge, but in order to earn an adequate wage the student must be trained as an artisan. Even when he is so trained, there may be no vacancy for his services, so the State must give him employment, else he may fall into poverty and crime. Even when he is secured by employment from poverty, he may get into mischief in his leisure, which indeed is likely to increase; hence the State should teach him how to employ his leisure, and some speculators regard this as the most important function of education.|| I have not yet seen the suggestion in modern literature that the State should ration out concert tickets and the like, and enforce attendance—though without some such system the danger will remain that even if taught to spend his

* P. 135.

† A. N. Whitehead, *The Organisation of Thought*, p. 27.

‡ See C. A. Mercier, *The Principles of Rational Education*, pp. 54, 55, etc.

§ N. C. Smith, *Cambridge Essays on Education*, p. 109; K. Richmond, *Education for Liberty*, p. 28; J. H. Simpson, *An Adventure in Education*, p. 73.

|| M. W. Keatinge, *Studies in Education*, p. 200. J. Clarke, *The School and other Educators*, p. 70.

leisure well he may nevertheless employ it badly—yet it will probably come. But we have the proposal that the State should discover the capacity of each young citizen and assign him his job. The difficulty occurs that the capacity may be latent or even non-existent; that while one man reveals his bent in infancy another manifests it first in middle life; that capacity in some is spasmodic, in others continuous; in some strictly limited, in others diversified. It is satisfactory to know that steps have been taken to deal with this difficulty. In the United States at any rate a new profession, that of Vocational Counsellor, has sprung up* ; when society faces the problem of the life-careers of its youth, these experts will be able to put an end to the “vocational anarchy which besets young workers.”

English writers usually assume that their readers find the subject of education tedious, whereas American writers believe that their public is keenly interested in it. For its readability in our time some of the latter suggest three reasons. *First, never before was it as important as it is now that each individual should be capable of self-respecting, self-supporting, intelligent work. Secondly, never before did the work of one individual affect the welfare of others on such a wide scale as at present. In the third place, industrial methods and processes depend to-day upon knowledge of facts and laws of natural and social science in a much greater degree than ever before.*† Some British writers speak in a similar strain,‡ though more cautiously; but the minds of most of them are dominated by the war, and its causes or effects. The notion that the Germans owed their initial successes to a better educational system scarcely appears in the most recent literature. Probably it has been silenced by Professor Burnet, who has shown that the German system is not only anti-democratic, but is exposed to the chief criticisms which have been launched against our own.§ At most there is evidence of a hankering after the thoroughness of the Germans, accompanied by the expression of a desire neither to adopt their aims nor copy their methods.|| And, indeed, statistics show that if the prohibition of crime be a leading object of education, the German

* M. Bloomfield, *Youth, School and Vocation*, p. 50. See also H. A. Hollister, *High School and Class Management*, pp. 113-133.

† *Schools of To-morrow*, p. 310.

‡ See A. Morgan, *Education and Social Progress*, p. 84.

§ *Higher Education and the War*.

|| J. H. Badley, *Education after the War*, p. 6.

system compasses it no better now than it did in Alison's time.* The tendency, therefore, is rather to base the need for readjustment on some forecast of the results of the war, of which one writer specifies three.† These are, first, the need for increased industry, owing to the vast accumulation of debt‡: the nation through its central government and its many bodies of local government must carry on industrial enterprises for the public benefit and under democratic control. Secondly, the expansion of the feminine influence. Thirdly, human unity. Even if this forecast were intelligible, and the author's comments indicate that the second and third items signify something very different from their obvious sense, it would probably be unsafe to stake anything on its accuracy.

It is easier to agree with those who hold that the war has provided a unique opportunity for reconsidering the system, and for the following reason. One effect which escapes no one is the realization of Isaiah's prophecy, *I will make a man more precious than fine gold, even a man than the golden wedge of Ophir*. There is one profession, the military, which cannot be overstocked. Human material has acquired unprecedented value, and the need for husbanding capacity has become acute. The value, not only of gold, but of wealth, is greatly reduced, since wealth signifies the right to human service, and the State restricts within narrow limits the rights which any individual may enjoy. The need for self-preservation which limits rights also enforces duties, and compels each individual to perform that service of which he or she is capable for the maintenance of the community. Hence the hierarchy of employments, of which some are more honourable than others, forming the basis of society, has been seriously impaired. The professional class, which largely ministers to the needs of peace, has been depleted, and the Universities, which in the main train for it, have been emptied. Since the curriculum of the Universities largely influences that of the schools, this period of depletion offers an opportunity for examining the value of traditions which are in abeyance, and could now be broken with comparative ease. It might, however, be a grave error to assume that the condition which the war has brought about will persist after its termina-

* See T. F. A. Smith, *The Soul of Germany*, Appendix ii.

† F. J. Gould, *op. cit.*, p. 7.

‡ Cp. K. Richmond, *Education for Liberty*, p. 104.

tion. With the notion of peace we associate that of plenty, which means the discontinuance of rationing, and therewith the resumption by wealth of some of its lost value. The use of wealth which the authorities cited above wish to abolish is that to which parents put it when they endeavour to secure their children's careers, or qualify them better than others for the service of the community.

The necessity of this in the interests of democracy is urged with great emphasis by some American writers.* *It is fatal for a democracy to permit the formation of fixed classes. Differences of wealth, the existence of large masses of unskilled labourers, contempt for work with the hands, inability to secure the training which enables one to forge ahead in life, all operate to produce classes, and to widen the gulf between them. Statesmen and legislation can do something to combat these evil forces. Wise philanthropy can do something. But the only fundamental agency for good is the public school system.*† The reasons here suggested for the continuance of class distinctions provoke criticism; and if differences of wealth are to continue and form a basis for class distinctions, such as the phrase "forge ahead in life" implies, one may wonder whether it is desirable that they should form the sole basis for such distinctions; whether that democracy is most stable wherein respect and admiration are concentrated on wealth, or that wherein they are diffused over a variety of matters, of which wealth, though perhaps the most important, is only one. To quote again from these writers‡: *There was once assumed a permanent division between a leisure class and a labouring class. Education—beyond, at least, the mere rudiments—was intended only for the former. Its subject-matter and its methods were designed for those who were sufficiently well off so that they did not have to work for a living.* The writers do not state where and when this system existed, and my own historical knowledge is insufficient to supply the gap. It is, however, obvious that the leisure class owed its existence to the possession of wealth; and so long as individuals are in possession of accumulated wealth there will be a leisure class, though emergencies may occur wherein the efficiency of wealth may be greatly reduced. In order, then, that there may be no leisure class,

* *Schools of To-morrow*, p. 313. Cp. J. E. Stout, *The High School*, p. 43.

† Of course, in the American sense of the phrase.

‡ *Schools of To-morrow*, p. 231.

property must be abolished; and in order that property may be abolished, the family must be abolished. Uniformity of education, so long as manual labour is required from any portion of the community, can only result in rendering the leisure class less intellectual. The real expedients are therefore those devised by Plato, whose Utopia would for all its citizens have been a less agreeable place of residence than any which has ever actually existed.

The notion, however, that class distinctions are in themselves evil and undemocratic, has rendered the definition of education difficult, because it has to be based on *a priori* considerations. So long as it was supposed to be communication of the notions and cognizances belonging to the class wherein a child was born, it was fairly easy to collect and label those notions and cognizances. The definitions which result from the adoption of the *a priori* method have a tendency to be obscure and fail to carry conviction. A few may be quoted. *Education is the acquisition of the art of the utilisation of knowledge.* Education is the process of providing the conditions which necessitate the child's using his own mind in socially profitable ways in the making of knowledge.† Education is that process through which the development and the highest life of the individual is conserved through so humanising him and socialising him as to conserve directly the existence, development and perfection of society.‡ The essence of education is to develop a balanced harmony of function.§ It is the task of education to arouse dormant heredity and to give to every man the particular training to fulfil the purpose in society for which he is endowed.|| Education is a process by which a man learns to maintain conversation with the world in which he lives.¶ The use of the term Social efficiency is peculiarly appropriate in defining the aim of secondary education. This means fitness on the part of the individual to meet the demands which society makes upon him.*** Some of these definitions involve philosophical theories; as compared with those which assumed that vocations were hereditary or within certain parallel lines, they are as inferior

* Whitehead, *op. cit.*, p. 9.

† E. C. Moore, *What is Education?* p. 18.

‡ F. P. Bachman, *Principles of Elementary Education*, p. 168.

§ K. Richmond, *Education for Liberty*, p. 216.

|| A. Morgan, *Education and Social Progress*, p. 62.

¶ E. T. Campagnac, *Studies Introductory to a Theory of Education*, p. 72.

** J. E. Stout, *The High School*, p. 18

in guidance as a map without lines of latitude and longitude is to one which contains them. Nevertheless, so long as the family and property are maintained, that which those lines of latitude and longitude indicate will exist.

Thus it is asserted that in democratic America the Elementary School, which is for children of the age from six to fourteen, is for all save approximately five per cent. the only one attended,* and of the remaining five per cent. a certain proportion leave the Secondary School at the end of each year of the period which separates them from the time at which they could proceed to the University.† The hierarchy of employments, then, whose respective rank corresponds with the number of years occupied by the training for them, does not appear to be altered by the unification of education; the guidance which might be furnished for the content of the respective curricula by anticipation of their length is withdrawn.‡ Light is thrown on the result by the definition given of the aim of the elementary school by the writer from whom the above figure is taken. *The aim of the elementary school is to provide primarily for the continuation in its common and basic features and secondarily for the progressive development of the social and national life of the American people.*§ Similarly we might assert that the aim of the public schools was to maintain and develop the British Empire. It would not be a helpful proposition, because the ways wherein this can be done are infinite, and some notion in anticipation of the share which the pupil was to take in the process would be of value in determining the course of instruction to be followed. By the rejection of such anticipations a certain amount of efficiency would be lost; whereas differentiation of curricula in the same school in accordance with them would seem to be more invidious than segregation of the castes by different schools.

The notion that democracy, besides having something to say concerning the content and the age of instruction, also dictates its methods, seems to be new, but has been stated by American writers with great force. Rousseau, who is now, though not without protest,|| cited as a high authority on education, seems

* F. P. Bachman, *Principles of Elementary Education*, p. 177.

† Some statistics are given by Stout, *The High School*, p. 206.

‡ Stout, *The High School*, p. 202, deals with this matter.

§ Bachman, *op. cit.*, p. 177.

|| See C. H. Kirton, *Principles and Practice of Continuation Teaching*, p. 5.

to have urged that the process should be an agreeable one ; and this principle is now brought into relation with the fundamental principles of democracy. *The conventional type of education, we are told,* which trains children to docility and obedience, to the careful performance of imposed tasks because they are imposed, regardless of where they lead, is suited to an autocratic society. These are the traits needed in a state where there is one head to plan and care for the lives and institutions of the people. If we train our children to take orders, to do things simply because they are told to, and fail to give them confidence to act and think for themselves, we are putting an almost insurmountable obstacle in the way of overcoming the present defects of our system, and of establishing the truth of democratic ideals.* The experiments described by these authors are mainly attempts to teach through industry, and it is claimed that where the children are getting their knowledge by *doing* things, it is presented to them through all their senses, the pupil sees the value of his work and his own progress, is not discouraged by his mistakes, has no motive for doing dishonest acts, since the result shows whether he has or has not done the work, and needs no artificial inducement. In a somewhat milder strain a Scottish writer† urges that the child should be led to see more clearly than is the case at present the usefulness of the training which he is receiving at school ; and a highly interesting illustration of what is meant is given by Mr. Branford in his Memoir of Alasdair Geddes:‡ *At a secondary school Alasdair was set to learn trigonometry. He totally failed to get any grasp of it, and doubtless was rated by the teacher as a born mathematical dunce. But the boy was given another chance. He was sent for a few special lessons to one of those nautical coaches who instruct budding mariners in the use of the sextant. This practical teacher took his pupil on the flat roof of his coaching establishment, and by ocular demonstration showed him how with the aid of trigonometrical formulæ the captain of a vessel can determine by midday observation of the sun the precise location of his ship on the broad ocean. After the second lesson Alasdair returned home so full of the wonders of trigonometry that nothing could deter him from interrupting a musical party to tell his mother of the great news.§* In the same

* *Schools of To-morrow*, p. 303.

† Morgan, *Education and Social Progress*, p. 47.

‡ *Town-planning Review*, March, 1918, p. 167.

§ K. Richmond, *Education for Liberty*, tells a similar story, p. 76 ; he required no such inducement himself to study trigonometry, p. 11.

strain Dr. Brewer says that the teacher of a lesson in arithmetic, geography, language or science, should bear in mind that each child's life presents certain actual and potential requirements of a personal, social, occupational and civic sort, and should see that the study and experience involved in each lesson are so planned as to contribute something towards satisfying these needs.*

Whether the question of democracy be or be not involved, it cannot be doubted that for many subjects need is the best instructor. It is also clear that for several—or, indeed, many of these—it is not in ordinary cases possible to reproduce the need. A man who had to find his own way from London to Newcastle without the aid of railway or mail-coach would learn the geography of this island better than he could learn it out of books. Yet this experimental method can only be applied to geography on so small a scale as to be insignificant. To many subjects of undoubted importance it cannot be applied at all; and even a little speculation brings us back to some very important principles, *e.g.*, that society depends on the division of labour, and that a little knowledge is apt to be not only useless but dangerous. A dramatist recently showed how on a desert island the positions of a lord and his valet were reversed: the valet took command. But men do not ordinarily live on desert islands: their lives are passed on thickly populated areas, whatever their form of government; and the conditions which have resulted from these aggregations of human beings show an extraordinary likeness for all recorded periods. Preparation, then, has to be made for such situations rather than for those whose occurrence is exceptional and improbable. Further, it is not clear that democracy can dispense with the habit of unquestioning obedience where there are good reasons for the order, but those reasons cannot be communicated; and it would appear that education has at all times endeavoured to make the student use his brains in some regions and abstain from using them in others.

Much the same idea is to be found in the latest work which I have been able to use, of which the title, *Education for Liberty*, implies that its author's ideal resembles that of the Americans, and that in his opinion different types of education are suited

* *Annals of the American Academy*, p. 56.

to different political systems. With this thoughtful and suggestive writer *All fear-inhibitions are bad*;* *by setting up an arbitrary and unexplained standard of good and naughty you supply the child with a bundle of inhibitions chiefly for the purpose of concealment.*† His statements in illustration of the effect which an explanation of the value of a lesson has on a child's mind are surprising. He asserts that a boy who cannot as yet see the use of elementary algebra or Latin grammar will jump at a simple and rational explanation of the satisfaction that they offer to his mind, the one in helping him to understand relations apart from quantities, the other in making the essential structure of language clear and definite.‡ If the objection be urged that children are not interested in abstractions, he replies that they are interested in nothing else.§ Other authorities assert that abstractions leave the child cold,|| and this seems to be attested by ordinary experience.

The educational curriculum which could be deduced from the theory of "social efficiency" being the aim, would take into consideration two activities which will be demanded of each citizen: that of armed defender or the equivalent, and that of voter for parliamentary and municipal elections. Should the war soon cease and be followed by a permanent peace, the former activity would furnish little subject-matter; but should it continue indefinitely, and this appears to be at least a possibility, the military aim of education would be emphasized. An endeavour was made by Napoleon to organize general military education, but as his rule terminated only a few years after its introduction, it is probable that the experiment had no time to work. At his schools, we are told, religion was hardly mentioned; political studies were altogether prohibited; moral disquisitions little regarded; but geography, mathematics, mechanics, the physical sciences, fortifications, gunnery, engineering, and whatever was connected directly or indirectly with the art of war, sedulously taught and encouraged.¶ The latter part of this programme would have to be reproduced if efficiency in actual warfare became a normal need; on the other hand, democratic education is thought to require political studies, and a good

* P. 239.

† P. 244.

‡ P. 20.

§ P. 243.

|| Sir Clifford Allbutt, cited by Mercier, *op. cit.*, p. 32. Stout, *The High School*, p. 106.¶ Alison's *History of Europe*, vii, 213.

deal is heard of a subject called *Civics*, which deals with the purpose of institutions and a citizen's rights and duties. One of our foremost writers on Education goes so far as to say that the enlightenment of the democracy about facts of social import is the most serious business that the school of the future has before it. He holds that it is at least as important as religious instruction and cannot be separated from it.* The connexion would appear to lie in the fact that a vote should be cast, not only with knowledge but with a lofty motive; and that the latter belongs to ethics, which should have a religious sanction. The religious side of education in this recent literature appears "to be praised and left out in the cold," though it is asserted that the age of attendance at the high school is that wherein the tendency towards religion is strongest, and religious communities are most frequently joined.† A wise utterance on this subject is that of Dean Inge: *Religion is seldom taught at all: it is caught, by contact with someone who has it.*‡ A neighbour of his in the volume cited vehemently repudiates the notion that the antagonism of science to religion is at an end, and insists that agnosticism is the very life and mainspring of the former;§ whence we find ourselves in the presence of grave difficulties, if we suppose that the views of these experts are all deserving of consideration. How are we to deal with a subject which is of the first importance, for which the pupils have a natural inclination, which, however, cannot be taught, and is in conflict with other subjects which, it is agreed, are indispensable? To two statements on this matter attention may be directed. One is that of Mr. J. Clarke,|| who (as it seems to me) rightly holds that the Sacred is something analogous to, yet not identical with, the Good, the Beautiful and the True, and like those other concepts deeply imbedded in human nature. His idea is that the proper place for religious teaching is the home. Since modern educational theory is apt to forget the parent entirely, and regard the child as wholly the property of the community, this notion is to be welcomed. It brings us, however, to the difficulty of the boarding school, and it is

* M. W. Keatinge, *Studies in Education*, p. 196.

† *The High School*, p. 62.

‡ *Cambridge Essays on Education*, p. 23. Such persons, according to K. Richmond, *op. cit.*, p. 242, "are very few."

§ W. Bateson, p. 137.

|| *The School and other Educators*, p. 185.

noticeable that another writer, who wishes the boarding school to be abolished, offers some suggestions for dealing with the matter which are compatible with its retention.* He proposes that the complete field of religious parable should be available for the exploitation of the teachers as an aid to moral instruction, thus permitting the Bible to be taught, but not as history or doctrine.† To the difficulty that a good teacher is usually an enthusiast, and an enthusiast a partisan, whence Bible teaching is likely to become denominational, he offers the same reply as can be offered in the case of political instruction :‡ that the pupil is likely to come under a series of instructors, whose partisanship will be mutually destructive. His other suggestion is far more revolutionary. It is taken from Dr. F. H. Hayward, who *has proposed the elaboration of a school ritual, calculated to touch young hearts, and lend æsthetic aid to their views of duty, citizenship, social progress, and the times, seasons, and messages of nature. Opportunities for ritual will be found in the Morning Assembly, Anniversaries of National Great Men and Women, Anniversaries of Local Worthies, Anniversaries of Notable Local, National, or Imperial Events, as well as stages in the yearly round, such as Christmas, New Year, Springtide, Midsummer, Harvest, the Fall of the Leaf, and the like.* One is inclined to wonder what Christmas does in this company. The writer proceeds to describe in glowing language the ritual to be employed on these occasions, which is to include recitations and responses, salutations and simple reverences, hymns and sermons, over all which the spirit of the City and the Country should preside.§ This new religion would then resemble the worship of Athene by the Athenians, who, however, were far from conscious that the goddess was merely a personification of their city. Experience only could show how far it would appeal to the same emotions as are aroused by denominational beliefs.

If the war should terminate, the curriculum of the schools would still or again be largely determined by the studies which the universities encouraged, and on this matter there has been considerable controversy, though it is an exaggeration to say that educational controversy has raged almost entirely between the

* F. J. Gould, *op. cit.*, p. 125.

† C. L. Kemp, *Methods for Elementary and Secondary Schools*, p. 20, suggests much the same.

‡ Cp. Keatinge, *op. cit.*, p. 195.

§ *Op. cit.*, pp. 128, 129.

classicists and the scientists.* There is no doubt that the employment of Latin as the basis of education rests upon tradition from a time wherein Europe had a literary language, which served for diplomacy, for religion and law, science, philosophy and history. The employment of Greek as another basis appears to be an indirect heritage from the early Roman Empire, when little importance was attached to any statement on history, philosophy or science, which had not Greek support. It has been observed with justice that it is *so much easier to repeat the teaching of the day before, that old studies and teaching habits have a peculiar sense of fitness; and rather than discard them after their utility has gone out of them, because the conditions in which they functioned have quite changed, we take the course of least resistance and develop a bad philosophy to justify the inaction which retains them*;† and since it can no longer be maintained that a reasonable proportion of those who spend many hours a week for years in acquiring the arts of reading and writing the classical languages, have occasion afterwards to make use of those arts, the retention of these studies has to be defended by some other consideration: such as the unrivalled excellence of their literature, or the disciplinary value of their grammar, or the fact that they constitute the background of modern European civilization.‡ Dr. Mercier has dealt with these pleas or their like in a manner which appears to be unanswerable, and though no one should (or perhaps would) deny that Greek and Latin are valuable accomplishments, the fact that they can apparently be acquired late in life more easily and no less accurately than in tender years makes it reasonable that they should be displaced by subjects of more general utility which can best be mastered or can only be mastered in the time of youth. If the educational value of the classical literature be as high as some assert, the chief masterpieces might well be studied in translations, as indeed Dean Inge suggests.§ Of accurate and elegant translations there is assuredly no lack.||

It should be conceded that the development of taste in literature is only one of the purposes of schooling, which should

* C. A. Mercier, *The Principles of Rational Education*, p. 6.

† Moore, *op. cit.*, p. 187.

‡ The notion that the practice of Latin composition helps the student to write English was refuted by Buckle, *History of Civilization*, ii, 307.

§ *Cambridge Essays on Education*, p. 28.

|| The best defence of Latin as a school subject appears to be that by E. L. Kemp, *Methods for Elementary and Secondary Schools*, pp. 150-152.

prepare the student's mind for the world in three ways besides. It should give him a reasonable acquaintance with both the things and the men among whom he moves, and furnish him with the means of communication with the latter. Hence we get as the main subjects of a curriculum science, history, and living languages, each of which admits of unlimited pursuit.* It is, of course, the case that as it is the schools devote much of their time to teaching all three, and that skilful methods have been devised for facilitating instruction in all branches of these subjects. The expulsion of the classical languages from the schools and their relegation to institutions devoted to research will, however, permit of the extension of these subjects and the maintenance of a higher standard in all. Whether these different types of study discipline the mind in different ways or not seems to be of little importance, for we are not modifying the mind, but furnishing it; not conferring on it aptitudes which it does not possess, but utilizing those wherewith it has been equipped by nature. It is clear that in the acquisition of all both the memory and the thinking power have to be exercised, though in different degrees. It is fairly certain that the interest of the student is naturally more aroused by one subject or division of a subject than by another, and that the future linguists, historians and men of science possess natural aptitudes in these various directions. It is not, however, the purpose of the school, though it may well be that of the university, to turn out linguists, historians and men of science. The school should communicate as much of each as will tend to promote the student's happiness and utility when he enters the world of business.

In the study of history it is clear that the nearer the approach to our own times the more copious and detailed is the material, and that while in order to know our way the history of our own and the preceding century is of the greatest consequence, there are also periods, both in the national history and in that of other existing and extinct nations, which especially arrest the attention. We are fortunate in possessing in the English language so many historical classics, works on a large scale dealing with a series of periods in our own history and that of other European countries, which render it possible to pursue this particular study and that of the humanities simultaneously; such works are alike

* K. Richmond, *Education for Liberty*, p. 26, arrives at this trichotomy by another method.

educational for their content and their style. For what is called social efficiency it would seem evident that the periods treated by Carlyle and Lecky, by Motley and Prescott, by Froude and Macaulay, are much more important than those which form the subjects of Thucydides and Xenophon, Livy and Tacitus; their language is the same as that which the student means habitually to speak and write; each of these—and there are many more who could be named with them—is qualified to be a favourite author, and so furnish employment for the leisure of later life; and each opens out an almost unlimited field for research to such as are qualified to pursue it. The amount that can be known of the persons or events with whom and which the Greek and Roman historians deal is strictly limited, and has long ago been tabulated and indexed; but as we approach modern times materials become more copious, and the possibilities increase of adding to knowledge as well as re-stating or hypothetically supplementing what is known.

Into the selection of historical departments local conditions must naturally enter; for though the world and its conditions are rightly described as our common inheritance, certain parts of it are more definitely the inheritance of one community than of another, and knowledge of the mode whereby that community came to possess its portion and how it has administered it may reasonably be expected in its members.

The study of foreign languages must also be largely influenced by local considerations, though doubtless sentimental considerations will in part dictate the curriculum. The close association of this country with France and Belgium for so many years is likely both to popularise and to facilitate the study of French in this nation; the practice of conducting certain lessons in the French language would probably be the most effective method of rendering the young accustomed to understand and express themselves in it. Sentiment is likely to restrict the study of German, which some of our most distinguished writers even before the war thought unnecessary. Learned and perhaps scientific bodies are preparing to carry on their operations after the war without German aid, and this may well cease to be a school subject. On the other hand, both sentiment and utility would suggest the introduction into the school programme of one or more of the languages of Greater Britain. No phenomenon connected with the war has more profoundly moved the British nation than the attitude taken up by India at its

commencement and maintained throughout. India is on the way to have a national language in that idiom which is ordinarily called after Hindustan, and is understood over a large portion of the peninsula. The difficulties which stand in the way of its general adoption and recognition as the language of India appear by no means insurmountable; and the introduction of this language into the curriculum of English schools would bring India far nearer to the inhabitants of this country, and render them at home in that peninsula, which, with the increased facilities of communication after the war, is likely to be more frequently visited. The series of closely printed columns in the *Encyclopædia Britannica* devoted to Hindustani Literature show that it is by no means an illiterate patois, and as the dominant dialect of India it is likely in future to contain many monumental products of the Indian mind. It is noticeable that in his recent monograph on Akbar, Mr. Vincent Smith designates the author of a Hindustani classic as the greatest Indian of Akbar's time.

One other of the great languages of the British Empire for which some room might be found in the curriculum of the schools is Arabic, whose literary metropolis has long been Cairo, and which is also the language of Syria, Mesopotamia and Arabia, all three countries wherein Great Britain has interests and wherein she has responsibilities. There is indeed room for unification of the vernaculars dominant in the different countries of which Arabic is the mother-tongue, and this the growth of the newspaper Press will perhaps some day achieve. If the study of a language merely as the expression of thought be good discipline for the mind, the claims of Arabic for this purpose are vastly superior to those of Greek, Latin, and probably of any other language, for there is none which gives more the appearance of being an elaborately thought-out mechanism, perhaps none which combines in equal degree simplicity with subtlety, few which are as copious and as forcible. The key to the mentality of vast populations in Asia and Africa, it records in its long series of faithful chronicles and biographies the experiences of these nations and their predecessors before the civilization of Europe was forced upon them. For the correct estimation of what Europe can do and has done, these records are of great value. While, then, for the educated European practical acquaintance with French may be regarded as indispensable, if time can be spared for other foreign languages, some of it may be claimed for those most widely spread in the British Empire.

It is evident that opinion has swung vehemently in the opposite direction from that of the fifties, when the most learned and possibly the wisest Englishman of his time spoke with contempt of State interference with education. Now the question is not whether it should or should not provide it, and even enforce it, but whether there should be any exempted from its control. Since the inferior efficiency of State management to private enterprise is apparent in many departments of activity, it may be hoped that when peace is restored the advantages which result from freedom to experiment and to compete will not be thrown away in the matter of education, and that the utmost room for individual development will still be permitted. It may well prove that enforced schooling for a longer period will fail to diminish crime and poverty to the extent which some foresee, and that the cry will be heard : *What could I have done more to my vineyard that I have not done in it? Wherefore when I looked that it should bring forth grapes, brought it forth wild grapes?* The answer to that complaint will be found in another text : *A good tree cannot bring forth evil fruit, neither can a corrupt tree bring forth good fruit* ; that education, however skilfully it may be developed, appears insufficient to grapple with heredity and environment, and that the individual character is often, if not always, inexplicable by the three, of which heredity can never be thoroughly understood. There appears to be room for further investigation of the degree to which notions and cognizances can be conveyed by instruction and habituation, since it is undeniable that this can be done within limits ; and the selection of notions and cognizances for the equipment of the individual can only be based on intelligent anticipation of his future requirements. So long as society has grades there may be and should be a staircase upwards, but there will be rarely or never anything but falling downwards. The true course of education in the future does not appear to lie in scrapping institutions that have worked well in the past ; for it must be remembered that if every great Englishman has not been educated at Eton, Eton has produced an extraordinary number of great Englishmen ; it does not appear to lie in equipping with the same intellectual apparatus those who are likely to spend their lives as mechanics, as tradesmen, and as researchers ; it does not appear to lie even in those experiments recorded chiefly in American works, which fascinate with their resourcefulness, but perhaps are most successful when handled by their actual

inventors. It lies rather in the constant investigation of vocational requirements, and, even at the cost of revolutionary changes, accommodating the instruction furnished to the group whose needs it should supply.

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There was no discussion of this paper.

The usual votes of thanks having been carried, the meeting closed at 5.40.

THE CHURCH AND THE ARMY.

BY

THE REV. CANON JAMES O. HANNAY, M.A.

TWO ADDRESSES DELIVERED BEFORE THE VICTORIA INSTITUTE
IN THE SMALL HALL, THE CENTRAL HALL, WESTMINSTER, S.W.,
AT 4.30 P.M.

I.—MONDAY, JANUARY 14TH, 1918.

The Rev. J. H. BATESON, *Secretary of the Wesleyan Army and
Navy Board, in the Chair.*

STATEMENT BY THE LECTURE SECRETARY.

It has fallen to my lot, as Lecture Secretary of the Victoria Institute, to carry through the arrangements for the two meetings to be held here to-day and this day week, and the Council desire me to explain how these meetings, which do not lie within its ordinary programme, have come about.

The objects of the Victoria Institute, which was founded in 1865, are twofold: First, to investigate in a reverent spirit important questions of Philosophy and Science, especially those bearing upon Holy Scripture; Second, to arrange for addresses from men who have themselves contributed to progress in Science and Research, and thus to bring the Institute into direct touch with the latest advances in both. And the principle upon which these objects are to be sought is that of humble faith in One Eternal God Who created all things good. Accordingly, the papers read before it and published by it are of two kinds: original contributions to knowledge and essays upon important questions of philosophy and science.

Last autumn Sir James Crichton-Browne, Treasurer of the Royal

Institution, wrote to us to know whether the Victoria Institute could give Canon Hannay the opportunity which he desired of addressing a London audience on the religion of our fighting-men and the lessons which it had for the members of the Christian Churches throughout the land. Our Council felt on the one hand that the subject lay outside our statutory programme, but on the other that it was of such importance as to render it our duty as a professedly Christian body to arrange, if it were possible, to give the opportunity desired. The Council therefore decided to reply, in effect, that they felt honoured by the application which Sir James Crichton-Browne had made to them on Canon Hannay's behalf. They have therefore gladly done their best to provide an audience before whom Canon Hannay may feel himself as free to speak as before a Society of which he is himself a member. We who are members of the Institute, on the other hand, meet on this occasion, not so much as an organised body but as a number of Christian men, gathered together for the privilege of listening to the thoughts that have impressed themselves so deeply on a man of Canon Hannay's judgment and distinction, and of learning from his experience.

The Council has arranged that there shall be no discussion of the subject to-day, as it would be unseemly to have one until the whole of Canon Hannay's message has been delivered. But at the meeting next Monday, January 21, there will be an opportunity for discussion after the conclusion of the second portion of the subject.

First Address.

THE title I have given to the two papers I am going to read to you is a bad one. It suggests a discussion of the religion of soldiers. This is a subject which might have been interesting before the war when soldiers were a distinct professional class, like doctors, and might fairly be supposed to have a special religious outlook of their own, a kind of reserved Pisgah from which they got a private view of the Church and the promised land. There is no longer a soldier class now. When we talk about the religion of the Army we really mean the religion of the men of the nation. The war has done this for us among other things: it has given us an opportunity, unique I suppose in history, of judging how far the nation has been christianized. Has the Church fulfilled her mission or has she failed? We ought to be able to give some sort of answer to that question now. Our men have been removed from the surroundings of familiar life. Conventions and habits, the garments of the soul, have been

stripped from them. They have been set naked, face to face with the stark realities of pain and death. We ought now to be able to see, as never was possible before, just how much and in what directions the Church's presentation of Christianity has affected them.

This is a big matter, enormously difficult to see honestly, sanely and whole. It is far too big for me. Yet I make no apology for approaching it. "The lion hath roared; who doth not fear? The Lord God hath spoken; who can but prophesy?"

There is a story which used to be told rather frequently a couple of years ago. It is about two young officers in billets after a particularly trying time in the trenches. They talked to each other, as young officers do not often talk, about religion. "Well," said one of them, "the war has convinced me of one thing: there is a God."

"That's odd," said the other. "The war has convinced me that there isn't a God."

I do not suppose that story is true, though it may be. But, true or not, it represents two lines of thought, or, perhaps it would be better to say, two kinds of hope. There were those who expected with some confidence that the war would produce a tremendous revival of religion, an awakening, both at home and abroad, of the religious spirit latent in the nation. "When I was in trouble," said the Psalmist, "I called upon the Lord and he heard me." It seems natural to suppose that the coming of great and terrible trouble—danger, pain, anxiety, bereavement—would have just this effect, that men everywhere would call upon the Lord. There were also those who expected, with equal confidence, that the war would finally chip away the veneer of religion which made the nation appear to be Christian. They argued, with some show of reason, that since Europe, nominally Christian for some 1500 years, is still capable of the barbarous crime of war, the failure of Christianity is proved. Its Founder promised peace and goodwill, love and gentleness. The promise has not been fulfilled.

It might have been interesting—before the war began—to discuss which of these results were the more likely to follow a catastrophe such as that which has come upon us. I can imagine that a good case could have been made out for either side. But such a discussion would be fatuous now. We have had more than three years' experience of the war, and we see that it has done neither the one thing nor the other.

It looked, just at first, as if there were going to be some kind of religious revival. We heard of churches at home filled, day after day, with people who came to pray. We were told stories about men in companies and battalions kneeling to receive the sacrament before going into action. But the emotion wore thin. The effort to revive it by means of a National Mission of Repentance and Hope was not an entire success. Either the thing was mismanaged or the nation was in no mood for response. He would be a bold man who claimed that there has been anything like a general religious revival either in the Army or at home. The war has not shown that the nation was in any complete sense christianized. Out of the deep men have cried. That is true, though the cry has been singularly inarticulate and it can scarcely be said that they have cried consciously and deliberately to the Lord.

On the other hand, there has been nothing like the wave of definite unbelief which would have followed a general acceptance of the rationalist argument. It is only one, here and there, who, like the second officer in the story, has been convinced by the war that there is no God. Men still pray, and still in a vague way expect that Someone hears their prayers. The Christianity of the nation has proved to be something more than a mere veneer. It has not peeled off when submitted to the scorching blast of sorrow and trouble. There remains a feeling that Christianity, in spite of the passing of so many centuries, has not had a fair trial, and may yet be able to fulfil its promise to the world.

What does seem to have happened is something which no one expected and very few people wanted. The original pre-war attitude of the average man towards religion seems to have been something like this :—

“Religion! That’s the parson’s job. He’s paid for it. He has his church. I expect it’s all right, and he’s seeing after it. Anyhow, I’m not religious, and there’s no need for me to bother myself.”

There was little or no active hostility there, though there was a suggestion of contempt. There was certainly no definite apprehension of intellectual difficulties, no approach to a reasoned scepticism. The ordinary man simply stood remote from the Church, neither blessing much nor cursing much; very patient, very tolerant, broadly indifferent. Now there is a change. Religion is still the parson’s job, or the padre’s, according to

circumstances. He is still paid for it. He still has his Church or his Church Army Hut, but no one any longer expects that it is all right. On the contrary, there is a general feeling that the parsons have somehow messed their job. They have not seen after it as they should.

The feeling is much the same as that which most men have about politicians and statesmen. Once we were all fairly well content to leave the management of the nation's affairs to those who made a business of such matters. That was their job. Occasionally, in a spirit of fair play, after one party had enjoyed an innings, we gave the other party a chance. We did not expect that anything very much, either good or bad, would come of a change of Government. So long as nobody interfered with our beer and tobacco we were not to be aroused to enthusiasm or resentment. There was a class of politicians, just as there was a class of parsons, and politics was their job. They were paid for it, and we supposed it was all right. Since the war began, it has come home to us that so far from being all right, this business of politics has been all wrong. The politicians have muddled their job badly, and we are beginning to be seriously angry with them.

The comparison breaks down, of course. All comparisons break down somewhere. Our discontent with politicians, who have managed our affairs for us, leads to efforts to get rid of particular men or particular parties and put others in their place. Hardly anyone thinks that we should get better religion or more of it by meting out to the present Archbishop of Canterbury the punishment inflicted on Laud. We grumble about the activities of this and that prelate or the way in which the Chaplain General manages his department, but we recognize that the trouble goes deeper. It is the Church which has failed, or seems to have failed, not those who are the leaders of the Church at the moment. Nor is there the smallest sign of any general desire to substitute one Church for another. There is not going to be a Roman Catholic Revival any more than an Anglican or a Protestant Revival. The failure of the Anglican episcopate to make plain the path of righteousness in war, and to justify the ways of God to men, is in no way more complete than the impotent silence of the Papacy. It is perhaps only patriotic prejudice which leads us to suppose that our own "war religion" is any more Christlike than that of the German Lutheran. If the English Church has failed to make Christians of Englishmen—I am not sure that it has—it can scarcely be claimed that the Roman Church has

educated the Bavarians and Austrians into the spirit of the Sermon on the Mount.

What we have arrived at is not an indictment of this creed or that, or even of creeds in general, certainly not a conviction that one kind of organization or system of discipline is superior to another; but a feeling, vague and puzzled but real, that Christianity as presented to the world by the various, and somewhat quarrelsome, successors of the Apostles, has failed us. Religion ought, so we feel, to have given strength and comfort to a nation of mourners. But very many of the mourners are without clear hope to ease their heartache. It ought to have given calm to the anxious. Too often they get through the days with no better help than a stoic setting of the teeth, wondering if the passing of another month of it will leave them sane. Religion, so we feel, ought to have made Crusaders of our men. It seems to have done no such thing. Never was there a greater contrast than between "Tommy," blasphemous and cheerful, and the knights of Mallory's chivalry at prayers before battle in a forest hermit's chapel. Religion, above all, should have made plain to the general conscience the distinction between right and wrong, the rights and wrongs of the war, rights and wrongs in the conduct of it. Christendom is sharply divided on these ethical questions. No voice has spoken with the authority which compels and wins.

This is what has come home to the mind of the thinking man. The man who does not think reaches much the same position.

"The Padre! He's a good sport, and he don't preach too long. But what I say is, if there's one for me it'll hit me and I don't see that a man's religion makes much odds when there's high explosives knocking around. Not that I'm against religion, mind you, I'm not. Only I'm not what you'd call a religious man, not in a regular way."

Is the mind of his wife at home very different?

"Parson, he talks about the sacrament of the altar and that's all right. Only I never had much time for sacraments and such, what with having a man to do for and the children coming one after the other so quick. And now Bert's gone—on the Somme it was—and it won't be easy to manage for the children, let alone sacraments; though I do try to keep Maud and Alf regular at Sunday School and they was all baptized proper in church, even young Bert, what was born a week after I got the news about his father."

Most interesting of all is the way the confused puzzledness has laid hold on the minds of the recognized, so to speak official, representatives of religion, the clergy and the pious laity. Even before the war these were not wholly satisfied with the Church's position. There were demands on the one hand for a restatement of the Christian dogmas, some kind of fresh interpretation of ancient formularies which would render them intelligible to the mind of the world of to-day. There were complaints that the Church was not getting hold of the working man—a sufficiently obvious fact—and clamorous suggestions that she should fling herself into the battle for social reform, or devote more energy to definite church teaching, or appeal to the senses of the half-educated with more striking and elaborate ritual. But the earnest and hardworking clergyman was not much affected by the voices of prophets and reformers. His hands were very full, his time completely occupied, with work which had to be done, organizations to be founded or kept going. He worked and he had not time to think. It is just this man, the essential backbone of the Church, whom the war has affected the most. He served at home or he made his way out to France as a Chaplain to the Forces for a year or so. At once he found himself "up against it." He was plunged into strange, deep waters. He struggled, spluttered, splashed, grasped at one after another of the various life-saving devices on which he had always relied, which were still floating about round him, but seemed to have lost their power to support. With an effort he squeezed the water out of his eyes and looked up. The sun was there in the sky as it always had been. He blinked at it and wondered.

It was necessary for the parson, priest, padre, whatever he chose to call himself, to arrive at some understanding of his experience; far more necessary for him than for anyone else. His self-respect and his peace of mind, the future of the Church he belonged to, the very existence in him of the faith he was sworn to defend, depended on his reaching an explanation of the facts which pressed on him.

Out of this confused welter, this bewildering breaking up of what once seemed firm and strong, two things, as it seems to me, emerge clear and unmistakable. From these two, as foundations, we must start whatever building up or rebuilding there is to be done of the Church's life after the war. The first is this: the average Englishman, the man of the workshop of yesterday, of the trenches of to-day, wants religion. He has not said, with

the Greeks who came to Philip, "Sir, I would see Jesus." He has said, most plainly for those who have ears to hear the silent speech of acts: "Sir, I would trust God." Of this I am as sure as I can be of anything. It seems to follow certainly that he already does trust God, and thus has the beginning of religion in him.

But his religion is an imperfect thing. Christ and the Cross are not in it. That is the second of the two things which seem to me clear. The Church has failed to bring the average man into any kind of real touch with Him Whom we believe to be the Saviour of the world.

So far then the Church* has succeeded. The souls of men are not asleep. The spiritual faculty is awake in them. Men who do such things and are such men as these, declare plainly that they "seek a city." It is something.

So far also the Church has failed. Her children have not found what they seek. The Church has not given them sure and strong faith in the great simple truths which she exists to teach. Nor has she brought them to Jesus, the Master, who dwells in her.

I suppose that I should offer you some kind of proofs of these two assertions which I make so confidently. I do so with the uneasy feeling that the only proofs I can offer will strike you as unconvincing. They are the results of my own experience. Others have had wider experience than mine, have done more work and done it better. They have been led to different conclusions. Some, I know, will be inclined flatly to contradict what I have said. I have heard it asserted more than once that the average soldier, that is the average Englishman, has no religion at all, nor wishes for any. I can do no more than tell you the things which I have seen and heard. But, at least, I am not going to fall into the mistake of basing my judgment of the mass on what I have seen of exceptional men. There are men, thank God many of them, in our armies, just as there are at home, who

* I use the word "Church" because I can find no other. "Organized Christianity" is a stupid phrase. "The religious world" is a contradiction in terms. Besides, even if we take "the Church" to mean simply the Church of England we shall not go far astray. Three-fourths of the men in our Army, that is to say, three-fourths of the men of the Empire, are so far members of the Church of England that they prefer to enrol themselves under her name rather than any other. The Church of England is responsible for them. Hers is the praise and the blame for what they are.

are devout and instructed churchmen, whose souls are built up in the faith, who are in the fullest sense Christian men. I have met them under all sorts of circumstances and recognized them with joy. There are in the same way pious Nonconformists to whom the religion they have been taught is the main thing in their lives. But these are exceptional men. Every padre at the front knows them and gladly does his best for them. Just in the same way there are men, the padre meets them less often, who are definitely hostile to religion; but they are exceptions too. The average man is neither fully Christian, nor an enemy. It is of him that I wish to speak. It is on my experience of him that I rest my assertion that he is a seeker after God.

I was stationed at one time in a large base camp. Its function was to receive reinforcements which came out from England and to pass them on up the line to the fighting units as fresh men were required to make good the inevitable losses. Men were continually coming and continually going. Very few men stayed with us for more than a week or two. The drafts for the front were paraded before they started, and inspected. Certain formal orders, dealing with the discipline of the journey, were read out. The officer who despatched the draft generally spoke a few words to the men. It was the custom—I do not know who started it—that the Chaplain should be present at these parades and should hold a short service for the men before they started. The service was very short, occupying not more than five minutes. That camp was really a collection of camps, each under a different colonel. One or two of these commanding officers objected to these services, and would not give us permission to hold them. One or two others were doubtful, but gave permission. In most cases the commanding officer welcomed the service, and was anxious that nothing should be allowed to interfere with it. These little valedictory services were highly valued by the men. They wanted a prayer said for them. Some kind of peace came to them with the benediction they received. I have no doubt of this. It is true that the thing was compulsory. The men were on parade. They could not go away, nor could they behave otherwise than with decorum. The service might conceivably have been nothing more to them than a necessary part of certain formal proceedings. But it was not so. It was real. There is no possibility of mistaking the response, whether spoken or unspoken, which men make to prayer offered for them. Anyone who has ever prayed aloud with listeners round him knows it.

There is no chance of missing the presence of the Spirit which moves from him who blesses to those who are blessed and back from them to him. These things were present, not always present, not always in the same force, but much oftener than not they were there. Drafts were of various sizes. Sometimes three hundred men were paraded. Sometimes not more than a dozen. The start of the departing drafts was made at night, almost always. Officers moving among the men inspected their kits by the light of lanterns. The padre, standing before the men, was rarely able to see their faces. They were dark figures, silent, still as statues; no more. Sometimes, in the case of small drafts, a lantern held beside me enabled me to see the men. There were dull faces and apathetic, sometimes hostile faces, though not many. Most of them, when I could see them, were different. They were the faces of men who were hungering for something—for God. Once there came unexpectedly to us a whole battalion of men under their own colonel. They camped in a piece of waste ground beside our men. They stayed with us two days and one night. The next night they marched away. They were miners from the north of England. On the day of their departure their colonel came to me and asked me to hold a service for them as I did for our own men when they were going. He said that his men wanted it. I shall always remember that night. The battalion, at full strength, filled our parade ground. The night was stormy and a fine snow blew across us. There was almost no light. I stood at the bottom of the long slope of the parade ground and had little hope that my voice would reach the farther men. But I am as sure as I can be of anything that not my prayer alone, but many prayers, went up to God that night.

It is not, I think, right, to speak much about the letters which the men wrote home to their wives or parents. It was my duty to read, I suppose, many thousands of them. They were of different kinds, written by men of various degrees of education. But I think there can be no breach of confidence in saying this: a very large proportion of the letters contained some kind of prayer, if it were no more than a "God bless you, dear wife," at the end; that, or an expression of confidence that God would look after those left behind in England. Much rarer was a request for prayer. The men who wrote were thinking very little about themselves and their own danger, very much about their homes and those in them, and they believed that God would take care of those over whom they themselves could no longer

watch. They believed that it was some use asking God to do so. He would hear if they spoke to Him. They believed that.

The attendance of men at voluntary services is a certain test of the value they set on religion. There are generally voluntary services held both on Sundays and weekdays. Attendance at these is a test of a kind. Men, one may fairly assume, will not go where they need not go unless they want to go for some reason or other. I do not suppose that the motive which prompts the attendance is always a religious one. The service is held, we may suppose, in a recreation hut of some kind. The hut is very likely the only place open to the men which is warm, dry, and well lighted. It is pleasanter to sit there than to shiver in a draughty tent, even if you have to pay for your seat by listening to a sermon. Besides there is always a great deal of hymn-singing, and some hymns have tunes quite as agreeable as that of "Keep the Home Fires Burning." That a man should enjoy shouting "Onward, Christian Soldiers," is no kind of evidence that he is a Christian soldier. Yet, when we have made all possible allowance for the attractiveness of a voluntary service conducted in a spirited way, we cannot dismiss the attendance of the men as valueless in our attempt to get evidence about the existence of a religious spirit. Unfortunately, the evidence is singularly conflicting. Take the question of the short evening prayers commonly held in such recreation huts as are run by religious organizations, Y.M.C.A. huts and Church Army huts. There is generally a hymn, a prayer, perhaps a few verses of Scripture read. The whole thing does not last ten minutes. I have been in huts where the production of hymn-books from their hiding place, the first sign of approaching prayers, is the signal for a stampede of the men. By the time the pianist has reached the piano the place is empty, save for a few who have been caught as they fled by energetic lady workers. On the other hand, I have known huts in which not only those who were present stayed for prayers; but others, who had not been in the hut all the evening, came there at prayer time for the express purpose of taking part in the little service. What made the difference? Primarily, I have no doubt, the nature of the service itself. If the prayers are about things which seem to matter, if they are simple and straightforward, men will join them. Next, nothing is more fatal than to let the men get the idea that they are being trapped. I have been present at concerts in recreation huts which were followed so immediately by prayers that the audience had not a chance of

dispersing. Before the tumultuous applause of the last comic song had died away, the chairman gave out a hymn. He meant well. He had the men there and felt that if he could only keep them some good might be done. As a matter of fact the feeling aroused was one of resentment against unfair treatment. And the attendance at prayers depends very largely on the state of the war at the moment. My experience is of base camps, but the same thing is true at the front. If things are quiet and there is little fighting going on most men become indifferent to religious services. During a push, when great things are happening, men will pray with extreme earnestness for the things they want, for courage, for victory, for the safety of themselves and their friends, for help for the wounded, for comfort for those at home, for peace. I shall never forget the prayers every evening during the early days of the Somme push. I shall not attempt to describe to you—I could not do it if I did attempt it—the long hut crowded with anxious men, the tense silence, the amen which meant assent of heart and mind. That experience was proof enough for me that the bulk of our men are neither materialists nor indifferent to religion. The very fact that the religious spirit is most evident in times of stress seems another proof of its reality. It is in hours of extreme trial, of high hope and deadly fear, that it is most clearly seen where a man's trust is indeed placed.

There are other evidences which I might offer you of the existence of the religious spirit in our men, not in the confessedly religious men only, the regular communicant, the instructed churchman, but in the mass of ordinary men. But this would only be the same kind of evidence which I have already given you, personal, therefore of a subjective kind, unconvincing to anyone who wants figures or tangible facts.

There remains one question which I must touch before I sit down. How far is this purely natural religion? How far has the Church had a share in the making of it? It is an extraordinarily difficult question to answer. Indeed, to answer it at all some estimate would have to be made of the general tendency of the teaching of the Church for a long time back, a century or two, perhaps. We should have to find out, not what the formularies and creeds are, but where the emphasis of the teaching has fallen; what it is that the average parish priest has, by example, private exhortation, and preaching, actually taught his flock. We should then, looking at our men, see how

far this teaching has moulded their character. This I cannot attempt. There is no time to do it here. I have neither knowledge nor ability to do it elsewhere.

I wish to suggest only one consideration to you. The great majority of the men are, professedly, members of the Church of England. It is in the Church of England that they find their spiritual home. I suppose that there have been more experiments in worship tried in France during the last three years than in England for three centuries. The idea at one time possessed a number of our chaplains that the farther they could get away from the ordinary form of church service the better. Eccentricities of every kind were regarded as desirable in themselves. The aim was to be bright, unconventional, startling: to attract and awaken by novelty. My belief is that this theory is entirely wrong. The nearer you can get to the ritual of the English parish church the stronger is the appeal to the men and the greater their response. The soul of the Englishman finds the natural expression of its religious emotion in the psalms and collects of the Prayer Book, in the simple ritual of the national church. To follow the course of a normal service, to hear and say and sing familiar words, is for most men a returning home. We may feel sure that the Church has not been wholly without part in creating the religious life which is in her children when we find that it is in her words they speak and to her ways they turn when the spiritual faculty in them is stirred.

2.—MONDAY, JANUARY 21ST, 1918.

THE RIGHT HON. THE EARL OF HALSBURY, F.R.S., *President,*
in the Chair.

STATEMENT BY THE LECTURE SECRETARY.

The present meeting, like that of last week, is special to the programme of the Victoria Institute. At the close of to-day's proceedings the subject will be open for discussion. We should expect those who join in the discussion to be such as have expert knowledge of the subject. Those who are personally acquainted with our men at the Front, either as chaplains, or as officers, or men, are the persons to whom we should primarily look for remarks, in one form or another, on Canon Hannay's addresses; and as a considerable number may wish to take part, it is necessary for speakers to restrict themselves to five minutes each.

Second Address.

IN speaking last Monday I insisted on the existence of the religious spirit among the men of our empire. There is a sense of the Divine in the common man. He is not without God in the world. I hinted at my own belief that the Church may fairly claim that the nation owes its religion, such as it is, to her. So far the Church may congratulate herself that her teaching, her prayers, her life, have had their effect. But I take it that the Church at present is in no mood for self-congratulation. Indeed it is the characteristic of the Church of England to-day that there is in her very little pride and very much self-reproach. The best of her sons, clergy and laity alike, are saying, "See how *we* have failed." While others are acutely conscious, sometimes sadly, sometimes it seems joyfully conscious, of the Church of England's failure, she is chiefly conscious of her own. No doubt the Church's mood is both wholesome and hopeful. That man went down to his house justified who beat upon his breast and said, "God be merciful to me a sinner." No doubt also the self-reproach is just. The Church has largely failed. The religion of the common man is real, but desperately imperfect, very far indeed from being fully Christian.

Consider what St. Jude called "the faith once for all delivered to the saints," that short list of simple elementary truths about

which a Christian man ought to be sure, in the strength of which he ought to go his way through life and into death. Take the simplest and most elementary of them: "I believe in everlasting life after death." Is that, in fact, part of the working equipment of the common man? I doubt it. Will you pardon me if I tell you a story which I have told before, which perhaps some of you have read?

On a very unpleasant February afternoon last year I found shelter under the verandah roof of a small estaminet in northern France. I had as a companion a young officer, a boy, who had that morning received his orders to go up to the firing line. We sat together on a little iron table and swung our legs while the snow fell thick on the road outside and was blown in little powdery drifts into the corners of our shelter. We were waiting for a lorry, an ambulance, any passing vehicle which would carry us into the neighbouring town.

I did not know that boy at all well; though I wished to. It is not an easy thing to know these young officers. Twenty-five years or so—I have lived that much longer than he has—make a gulf which it is exceedingly difficult to step across. Besides, I was a parson. That made another gulf. Therefore I was particularly pleased when he began to talk to me about the things he was really thinking. He was going into the fighting. He told me that he did not expect to come out alive. He was the victim of one of those odd convictions which we call presentiments. I forget what I said. I daresay it was "what I ought to have said." It was probably inane enough to put that boy off talking to me altogether. But it did not. He went on.

"I wish you'd tell me what you think about it, padre," he said. "Is there really anything afterwards?"

I cannot give his exact words, for I do not remember them. He repeated himself a good deal, but he made his meaning quite clear to me, and I think I can make it clear again, though I put into his mouth phrases which he did not actually use.

"I'd like you to tell me," he said, "as man to man, what you actually think about it. Do we go on living afterwards in any sort of way or——"

He struck a match to light a cigarette. A gust of wind, which carried a flurry of snow round our legs, blew the match out again. I daresay it was that which suggested his next words.

"Or do we just go out?"

"I know the Creed," he went on, and he did not say "your

creed," or "the Church's creed," but just "the Creed." "But that's not what I want. I want to know what you really believe yourself, as a man, you know."

Then I suppose that he felt that he owed me some sort of apology for talking to me in such a way.

"You mustn't think I'm an atheist," he said, "or a sceptic, or anything like that. I'm not. I used to go to church pretty regularly. I used to go to communion sometimes, with my mother, you know. I never doubted about any of the things I was taught. I just took them as they came. I supposed they were all right. Anyhow I didn't bother. But now I want to know."

This boy's case is not unique. It is not even rare. I am inclined to regard it as to some extent typical. Just such is the attitude of ordinary Englishmen towards the doctrines of the Christian faith. They know, in broad outline at least, the fundamental truths which the Church teaches. They have so far accepted these truths that they have not denied nor attempted to deny them. But they have not connected them in any way whatever with ordinary life. Life is one thing—real, pressing, intensely important. The Creed is another thing—belonging to a different region, not bearing on practical affairs. This attitude is logically impossible and intellectually absurd. But that does not matter. Very few of us are troubled by logic, or inclined to give much weight to intellectual considerations. We have our faith on one side of a high wall and ourselves on the other, and we get on well enough until——. Well, the time came for that friend of mine, and he wanted to get the faith over the wall, to set it down on the path his feet trod, and to find out, "man to man," whether there was anything in it.

There is plainly something the matter with a Church whose sons, at the critical testing-time, turn round and say, "Is there anything in it?" It is quite plain, I think, that this is not a question of intellectual doubt, of faith blighted by the Higher Criticism, or scorched by scientific materialism or anything of that sort. Our apologetics, though quite useful things in their way, are no real good to a man like the one who talked to me. He had not read—very few men have read—Harnack or Haeckel. Most of us would never have heard of Nietzsche if our orators had not taken to telling us (towards the end of 1914) that Nietzsche caused the war. I do not think the Church of England can fairly be blamed for want of zeal in defending the faith. She has

defended it as ably as any church in Christendom, and her learned books are excellent things in their way. Only people do not read them, any more than they read the works of the enemies whom our scholars attack.

Nor does it seem to me much good saying that the want of definite Church teaching in schools and pulpits is responsible for the position of men like my friend. As a matter of fact that particular boy had been "Church taught" quite carefully. He knew his Creed and at one time had known his Catechism. He had been prepared for Confirmation. He carried about with him a little book of Eucharistic Meditations which actually glowed with Church teaching of the most definite kind. Yet after all he wanted to know whether there was any kind of life after death. The vast mass of people living in a Christian land like this are taught, as plainly and distinctly as possible, that there is a life after death. The want of definite Church teaching may account for men not believing things about sacraments and absolution because very often those things are not taught. But the fact that we live beyond the grave is taught. And if people do not believe it, it is not for want of hearing it asserted.

There is, indeed, this much behind the common demand for more definite teaching. There has always been a certain hesitancy in the manner in which the Church of England has taught anything. She has valued, and still values, freedom more highly than discipline, and has shrunk from the attempt to compel belief by presenting dogma at the point of the bayonet. She has never quite said: "It is my duty to tell you what is true and your duty simply to believe what I tell you."

Yet—whatever authority a teacher claims—it is impossible to think that men will believe, believe in such a way that their belief will be any real use to them, merely because they are told to, unless indeed they undergo a process of hypnotism which destroys their minds. They may submit and profess, to save trouble, but at the last resort they are liable to turn on their teacher and say, "Look here, I quite realize your position; but, as a matter of fact, is there really anything in it?"

It might, I think, be fairly urged against the Church of England—and I suppose against every other church—that along with the really important things, she has been teaching with equal emphasis a whole lot of other things which are not nearly so important, which do not strike the ordinary man as of any importance at all. There are, when all is said, very few things in the Christian faith

which are vital for the practical purposes of life for most men. There are a great many other things which may be of use to a few people but must always strike most men as—let us say—trimmings. By emphasizing the comparatively unimportant, and perpetually laying stress on what is sure to seem unreal, we have set the vital things in an atmosphere of unreality. It would not startle us much if a man were to say: “Tell me, as man to man, is there really anything in that theory of yours about Fasting Communion?” It does startle us horribly when he asks the same question about life everlasting. Yet it is very natural that he should. We have all taught, not perhaps Fasting Communion, but something of similar importance, as if it were as vital as the forgiveness of sins and life everlasting. Common sense teaches the common man that for him it is not real at all. He has drifted into the belief that the other things, which we have never specially emphasized, are not real either.

But in the end it seems to come to this. Faith is not taught but given; and no one can give it who has not got it himself, strongly, abundantly. Put that way, what I say is, I suppose, highly disputable. Put another way, it is trite, a mere platitude. The ordinary man, the baptized outsider, whom the Church has not built up strongly in the faith, would have a much better chance of a sound working belief, if the inner circle of the Church, the clergy and the pious laity, realized more fully the greatness of the faith and held it much more strongly than they do.

I have spoken so far of the Church's failure to give her sons a sure and clear faith. But there is something which is yet more important than conviction, however clear and strong: a sense of personal relationship with Jesus Christ, or even, if that be too great a thing, a desire for His friendship. You will remember, no doubt, a great scene in *John Inglesant*, where Serenus de Cressy, the Benedictine monk, speaks thus:

“Nor do I speak to you as I might to others, of evidences that our faith is true, of proofs that hereafter we shall walk with Christ and the saints in glory. I am willing to grant you that we may be mistaken, that in the life to come we may find we have been deceived, may find that Jesus Himself is in a different station and position to what we think. That is nothing to your purpose. To those who know Him, better Jesus, beaten and defeated, than all the universe besides, triumphing and crowned.” These words suggest exactly what I mean; that there is a devotion to Jesus

Christ which is independent of all creeds, which a man might have though he sweated doubts at every pore, which a man might certainly have though he were totally untaught and could give no account at all of the matter of his faith. If the Church has succeeded in leading her sons to regard their Saviour thus, her failure in other matters is a small thing. If she has failed in this, no other success, though she might claim many, would be of any value at all.

Some time ago I was sent by a Committee, of which the Bishop of Winchester was one of the conveners, a paper of questions dealing with the religion of the Army. Among them was this one: "It has been said by an experienced observer, 'The soldier has got religion. I am not so sure that he has got Christianity.' How far does your observation bear this out?" This is almost exactly the question which I want to make some attempt to answer now.

At the very outset we are met by an amazing contradiction. Jesus Christ does not come into the religion of the soldier. The soldier admires and attempts to imitate just those virtues which are most distinctive in the character of Jesus. Donald Hankey, who was a direct observer at the closest quarters of the soldier's life, has put this contradiction more forcibly than I can hope to do in his *Student in Arms*. The Archbishop of Dublin, a careful critic of the testimony of direct observers, has expressed the same contradiction in another way, viewing it from a slightly different angle. But I do not know that witness is needed. Everybody who has known our soldiers, or cared to know about them, has reached the same conclusion. They possess in the highest degree, the virtues of patience, faithfulness, courage, cheerfulness, unselfishness. They are prepared for extreme self-sacrifice. It is men who possess these qualities in an eminent degree who win the soldier's admiration and loyalty. These make up the character which is the soldier's ideal, the kind of character which the average man admires most. "Who is the Happy Warrior? Who is he whom every man at arms would wish to be?" The answer is, a man very like Jesus Christ. The soldier does not give that answer with his lips; but he does give it, almost exactly, in his life and his aspirations. I say almost exactly, and in a few minutes I shall explain this qualification. In the meantime, take St. Paul's list of the Fruits of the Spirit, surely an authoritative description of the Christian character. Take it and translate it into the language of the camp. "Love."

St. Paul meant more than comradeship, which he elsewhere calls "brotherly love." But he did mean comradeship. Are not our soldiers inspired by this spirit? "Joy." Call it cheerfulness. Give it, if you like, an expression which sets your teeth on edge: "Pack up your troubles in your old kit bag, and smile, smile, smile." But it is the same thing; a thing the soldier has, admires and wants. "Peace." Have not men got inward peace, passing all understanding, who can go forward without repining or fear into a future of which only this is known, that it is full of pain, hardship and horror? "Longsuffering." There is a jingle which Wolfe Tone scattered broadcast over that strange autobiography of his: "'Tis but in vain for soldiers to complain." I never heard one of our men use the words. I very seldom met one who did not face hardship and even injustice in exactly that spirit, without anger or resentment, or much impatience. I suppose that is longsuffering. "Gentleness, Goodness." The most wonderful thing I have ever seen—more wonderful even than the sympathy of the poor for the poor—is the tender care of the soldier for his sick or wounded comrade. And he shows the same tenderness to a wounded enemy. It is a thing that amazes the observer afresh each time he sees it, though he sees it every day. "Meekness." At the first glance it is the least soldier-like of virtues. Yet consider and you will find that it is the inward spirit of all discipline, to submit to another's will, to prefer another's judgment, to reckon obedience the first of duties. This is to be meek.

If that list of St. Paul's is indeed a catalogue of the qualities which go to make up Christ-likeness; if Christ Himself gives us the supreme example of them and is the hero of those who admire and strive for them, then the soldier, the average man in the Army, is up to this point Christ-like. If the soldier knew Jesus, he would be a worshipper of Jesus, a hero-worshipper of Him Who possessed and displayed all these qualities which the soldier admires.

You have noticed that I have left out two words in St. Paul's list: "Faith" and "Temperance." Of faith I have already said something at the beginning of this paper. Of temperance—by which, of course, St. Paul did not mean total abstinence from alcohol—there is this to be said. There is a kind of emasculated Puritan who mistakes life for vice. He (or she) has from time to time grossly exaggerated the amount of immorality among our soldiers. There have been scares got up about "War Babies,"

and Expeditionary Force Canteens have been spoken of as if they were schools for teaching drunkenness. Even if we granted the truth of much that has been said, and accepted at its face value every accusation that has been made, we might still demand of these Puritans an entire readjustment of their scheme of moral values in the light of the teaching of Christ. These sins of sense are precisely those which He regarded as least hopeless. It was He Who said of those in His day who mistook respectability for religion: "The publicans and harlots go into the Kingdom of Heaven before you."

I do not want to represent our men as saints, or to claim that the Army presents humanity as Christ would have it. I know and deplore the coarse, sensual sins that are far too common. But the sensualist and the drunkard are not the heroes of our men. They sin often, boldly or carelessly, but—and this is the real point—they feel such sin to be failure. Their admiration is for those who live temperately and cleanly. The Church has not failed to give the average man a respect for temperance. He has learned that, and even when he fails most signally he owns that he ought to practise the thing which he respects.

The Church's failure, if she has failed, is something quite different. It is this: She has not recognized how near to Christ her children are. She has been inclined to reckon as aliens to the commonwealth of God those to whom she should have said joyfully, "The Kingdom of God is within you." Then, as a consequence of this, our men, believing what the Church says of them, have regarded themselves as irreligious. There is nothing more common than to hear a man say: "But of course I'm not religious. I don't think I've been to church except to be married, since I was a boy." And yet this man is constantly doing the things, and continually hoping and trying to do the things which Christ wants men to do. His life is visibly affected by a spirit, some spirit—what spirit, if it be not Christ's?

We proclaim Christ, and men stare at us uncomprehending, though the Christ we proclaim is in them all the time. We preach the Cross, and our words have little meaning to men who, even while they fail to understand, are nailed to the Cross along with Christ, offering themselves as sacrifices for the saving of the world.

This is the extraordinary contradiction in which we are involved. We have the men of a great empire so near to Christ that only a little space divides them from Him. Yet they do not see Him

or know Him or recognize Him as the Lord of all which they themselves count best. Can it be that the Church has somehow hitherto preached Christ imperfectly, her saints and doctors and faithful people having indeed seen Him imperfectly? They have seen a gracious and well-ordered Christ, one trimmed, clipped, defined, like a yew tree in a formal garden. No doubt men may see Him so and love Him well and save their souls. But Christ is greater. The Saviour of the world must be greater. For the world is more than an ordered garden. Humanity, vast, tumultuous, incoherent, needs and should find in Him a Saviour in all points like as it is, save for sin.

DISCUSSION.

In some measure the discussion dealt with forms of expression occurring in the Lectures, forms which do not appear in the text as now revised. In individual cases, also, speakers introduced topics of theological controversy which are properly left outside the purview of the Institute. Such elements in the discussion are not now reproduced.

Lieut.-Colonel MACKINLAY: There is much to admire in the graphic descriptions of the religious state of our soldiers, and also of the methods and teachings of many of the chaplains. Canon Hannay's reference to the natural religion which largely prevails, points to its unchristian character. Christ and His Cross are not in it, as he says on page 186. It is natural to pray to the Deity when in danger, and it is also natural to pray but little when the danger is past. According to 1 Corinthians ii, 14: "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. But he that is spiritual judgeth all things, yet he himself is judged of no man." Natural religion is therefore unchristian. It is true that the spiritual teaching of Christ has created a good atmosphere among our men who hold a natural religion, but the same thing is noticeable among Hindus in India, who have started hospitals and other good works in combination with Christians.

The ordinary soldier has a high ideal, and most of them know that to become a good Christian involves being born again by the Holy

Spirit. Many men will say it is impossible to be a Christian in the Army or Navy. I had an example, talking to a sailor on the top of a 'bus, and to a soldier a few minutes afterwards, whilst waiting for a tram. The sailor said: "It is impossible to be a Christian," and the wounded soldier said: "It is impossible to be a Christian over there." One sad feature in the Army is that many a man who has lived quite an upright life gets led away by the bad language and erroneous teaching, but this is not to be wondered at, if the heart has not been changed. A Christian worker was distributing Gospels in a camp. A soldier said to him: "We do not want anything like that: if we die at the Front, we shall be all right for heaven." Another man said: "We are not giving our lives for the country, we are fighting for our own. Why should our faith be undermined? I have often wished I could believe, but it seems to me all an awful muddle." Unscriptural teaching does indeed produce an awful muddle.

One young man writes from Edinburgh: "One Sunday a soldier was seen outside a tent, with unmistakable signs of sin and depravity on his face, while a service was being held, to which he was listening attentively. At the close I went up and wanted to shake hands. He said: "You would not shake hands if you knew who I was: I am the worst man in the camp, and only came out of prison yesterday." After a few minutes, he drew a dirty copy of St. John's Gospel out of his pocket, and said: "I would like to be a good lad." He soon believed in Christ, and before leaving for the East gave a splendid testimony for Him. We are all very grateful to Canon Hannay for his interesting paper, and even if we do not all agree with much that he says, our thanks are still warmly given to him for his very good paper.

Captain MACNAUGHTON: Canon Hannay has stated that the Church of England is at least conscious of failure in dealing with men in the Army. That is a tremendous step, but I think we should make a very clear distinction between the Church of England, the Church of Rome, and the Nonconformist bodies. For my part, in an experience of nearly three years in the Army, the Church of Rome has not failed. She makes tremendous claims, and says to the men: "You only trust in us, we will see you straight through earth and through Heaven." I confess I really believe that Nonconformist

bodies have the affection and love which the Church of England has not got. If you want to know why the Church of England has failed in the past to do much, and will fail to all eternity, the reason is not far to seek. The Church of England, rightly or wrongly (I speak in all love, for I know some of its curates and vicars are living the most saintly lives, and many of them are my friends), is in the eyes of the ordinary "Tommy," a worldly Church. If you want a cure for the worldliness of the Church of England (and I would dearly love to see her unworldly), if we want a cure for it, we must go and preach JESUS. Ladies and gentlemen, if you go to your parishes and teach Jesus, you will find that "Tommy" will no more think the Church of England is a worldly Church, but will hear you very gladly.

Dr. A. T. SCHOFIELD: In the dearth of first-hand speakers, I should like to make one criticism of the Canon's valuable paper. He speaks of "the Christ we proclaim being in them all the time." "If Christ be not in you, then is . . . your faith vain." Christ in man is clearly indicative of subjective grace. I would submit to the Canon that perhaps the reason why trust in God, which includes the Father, Son and Holy Ghost, is not more known to the men in the trenches, is owing to the absence of organisations which follow up Scripture teaching at the Front.

Christ crucified, dying and rising again as the Saviour of the world, must be the basis of all Christian faith. I am sure that the Canon would agree with me, that the clause wherein he spoke of men being nailed to the Cross "along with Christ" is an unfortunate rendering. I would suggest that He to Whom we all owe such infinite reverence, the Son of God, the Saviour of the world, Who, though He was rich yet for our sakes became poor that we through His poverty might become rich, must not be put—I am sure the Canon would not put His unique and glorious work on a par with a man dying for the sake of his country, and I think they should be carefully distinguished. From what I hear from second-hand intelligence from the Front, that is one of the great reasons for what the Canon deplures—the want of Christianity in the men. It is the substitution of the sacrifice of themselves for the sacrifice of Christ which has to be deplored. Once they know the objective Christ, there will not be far to seek to find the love for Him.

Mr. PHILIP JOHNSTON : I feel we want to lift the whole consideration of this question far above our party differences. Surely we want to come to Jesus Christ in the questions which have divided Christian men so unhappily for many centuries. We want a great unifying thought, and can we find a better thought than that contained in the word "Prayer" ? It is prayer alone that will bring Jesus Christ back to this troubled earth. It is prayer alone which will bring to an end this terrible war, which is a scourge upon Christendom, which has forgotten her absent Lord and Master.

A few months ago I had a letter from a Major in France, who had been put in charge of the responsible task of forming the roads—so necessary a work for the transmission of munitions of war. My correspondent said that, on a certain date in 1917, he had been ordered to take up a new position with the company of men working under him. In obedience to his senior Officer's command, he took the men to the billets assigned to them. They were hardly settled there—in fact had not had time to make themselves comfortable and get something to eat—before an urgent telegraphic message came through that the Germans were about to shell the little town out of existence. Humanly speaking, there was no chance for them. The enemy had the exact range of their billets, and so they must shift for themselves as best they could. He gathered his men and explained the terrible situation to them. Speaking as a Christian man, he said : " We have no hope but in God ; we each have our separate rooms—let us go there, and pray to God." He went and poured out his heart to God. He felt that many of the men were ignorant, and would not follow his example. But he felt that God had given him the charge of the men, their bodies and souls, for the time being.

As he was praying, the first shell came hurtling through the air, and seemed as though it must lay the place in ruins, and he was thrown down on the floor ; but nothing happened. He picked himself up, and went on with his prayer. This was at seven o'clock in the evening, and until five the next morning the shelling went on without intermission. But at five o'clock the shelling ceased. He went out, and looked round. The whole earth for a great area was entirely ploughed up by the shells, but although the tiles had been broken in the roof, and glass had been broken by concussion, not a splinter was knocked off the whole range of buildings. He met one of his sergeants as he was coming inside, and the man said to him,

with an awe-struck face: "Sir, this is a miracle!" As he told me this, with obvious sincerity, I felt that, if there was this one gallant man who felt that there was a power in prayer, you could assuredly multiply him by thousands in the English Army. Call them Church of England, call them Nonconformists, call them Jews, it is these men who are the salt of the earth. It is these men who are our hope for the future of the English-speaking race.

Mr. JOSEPH GRAHAM: I do not think I can be contradicted when I say that the great majority of the men know nothing of faith in a Supreme Being. An incident came to my notice the other day direct from the Front. There were some men in a trench, and a shell came over and narrowly missed them, landing just on the other side. One of the men said to his fellow: "How do you account for that? How do you account for the number of shells which have gone over us—some to the right and some to the left, and just missed us?" The other man said: "That was Providence." The other concealed his real notion for a moment, and then asked his fellow: "What is Providence?" and the man wriggled and twisted and tried to explain the point in various ways, but the one thing he would not do was to say it was GOD. It was Providence. So after this man had argued with him for a time, he said: "Oh I see, you mean it is God." The man agreed, and not only that, but he was grateful to the other for bringing the thing to a point; and once the ice was broken the two talked quite easily on the subject. That illustrates the point. Where the Church has failed has been that she has not brought her children up in familiarity with the idea of Christ and Christ's great redemptive work. They have not made Christ a personal friend.

Among other speakers were Rev. John Tuckwell, Colonel Alves, and Mr. Sidney Collett.

LECTURER'S REPLY.

In his reply, CANON HANNAY said: I thank you very much for the kind way in which you have received my paper, and in which many of you have criticised some of its shortcomings. I should like to say something to those who have discussed it, but my time is very short, as I have to catch a train to Ireland. I want to say to Dr. Schofield, that the point to which he drew special attention is

really cribbed from another heretic, the late George Tyrrell. I was not quite certain of the words. The precise words are in his much-abused letter.

WRITTEN COMMUNICATIONS.

The Rev. Prebendary H. E. FOX, M.A. :—

Canon Hannay has ably described the condition of the religious life of the Army as it appeared to him; and much of his criticism of the influence of the Church, both at the Front and at home has, I fear, some foundation. But there are features both there and here which are overlooked by the ordinary observer. While what the Canon has said, with one or two exceptions, deals with the obvious, I will not say superficial, there is naturally very little about the deeper influences of religious life, about which those who look for them, and know how to do so, could give a more hopeful picture. This occasion is hardly a suitable one for the discussion of this part of the great problem. But many facts have come to my knowledge, which show that there are forces at work and agencies employing them, which do produce results on a considerable scale, and far more real and permanent than all the good things rightly attributed to the Y.M.C.A. or the Church Army, or even the average Chaplain. Inquiry from those intimate with the work of the Soldiers' Christian Association or the Open-Air Mission, would produce evidences of a spiritual power laying hold on human nature, and of the actuality of what is meant by the old-fashioned words "conversion" and "godliness," far more than are generally known. These are realities which the men can understand and welcome, and which they can distinguish from the platitudes of those good people with the best intentions, who hardly know how to reach the deepest needs of the human heart, or how to give the Divine answer to the cry, perhaps scarcely understood by him who makes it: "God be merciful to me, a sinner."

The Rev. Chancellor J. J. LIAS, M.A. :—

Many of us instinctively feel that inasmuch as the revelation of God in Christ is the last to be vouchsafed to man on earth, it is

presumptuous for any of us to think that we can add to our knowledge of it. Yet I believe this to be altogether a mistake. Scripture is, I must think, an unexhausted mine, from which many new aspects of well-known truths will hereafter be unearthed. The belief of every disciple of Christ, while here on earth, is imperfect. Nor is this true only of the individual. Large masses of professing Christians have held ideas of God which were not only imperfect but seriously mistaken. For centuries man's conceptions of God were coloured by Pagan ideas. And this state of things is by no means at an end even yet. The jangling of Christians has continued so long, and grown to such an extent of late, that every possible idea of God, from the Loving Creator of heaven and earth and the ever-blessed Saviour of mankind, to a Being Who, though He may have made the world and all that is in it, is altogether incapable of controlling it, is taught by somebody and accepted by those under his influence.

Is it wonderful that under these circumstances there are thousands in England who do not fully understand Him Whom they worship, or what He is doing for the salvation of the world? What can the guide of souls do in such a case? Well, at least He can do this. He sees that our belief after all these centuries is still imperfect, and He must do the best He can with what there is of it. It is most saddening, no doubt, to find that the Scripture picture of the Word of the Eternal Father, descending to earth, taking our nature and rescuing us from the bondage of sin, by the impartation of the redeemed and exalted humanity of the Saviour, through the agency of the Divine Spirit, does not at once win the heart and produce the joyful and grateful submission of the perishing soul to the influence of the living waters of pardon and the streams of Divine life contained in the life, death, resurrection and ascension of the Man, Christ Jesus. But what does He find instead? He finds in an unexpected number of hearts a desire to do God's will as far as they can see it. He finds the unexpected believers ready to offer their lives for the country's service. He finds them cheerful and contented to live a life of exposure, wretchedness, and privation so long as they can save their countrymen and women from the horrors which the inhabitants of other countries have had to endure. He finds them ready to risk their lives for their neighbours' welfare, or for some of their comrades, or it may be for their regiment. But

there is no distinct idea of the scheme of salvation, no clear conception of God, no thankfulness for God's mercy in Christ Jesus. Can we deny to such persons all hope of salvation in the world to come? Are they not ready to follow the example of Him Who says: "Greater love can no man show than this, that a man lay down his life for his friend"?

Surely such men as these have the root of the matter in them. They may not be able to formulate in proper theological language their view of the Trinity, the Incarnation, the Atonement, and the various other doctrines of the Faith, concerning which theologians have written so many vast tomes, and have disputed so fiercely, and are disputing still. But at least such souls as we have in view recognize the duty of the imitation of Christ. Millions of them are ready to lay down their lives for their friends, and to recognize in fellow-creatures whom they have never seen, brethren whose title to be called friends they are ready practically to recognize. Is not this following the example of the Master? And does not the Beloved Disciple remind us that all our conceptions about God must begin by recognizing His image in His creatures? "If a man say, I love God, and hateth his brother, he is a liar: for he that loveth not his brother whom he hath seen, how can he love God Whom he hath not seen?" The love of God, then, is impossible until we first learn to love our neighbour. And the love of our neighbour is proved, not by words but by acts.

General Sir HENRY GEARY :—

I write with special reference to the second paragraph on page 186: "The Church has failed to bring the average man into any kind of real touch with Him Whom we believe to be the Saviour of the World." In my opinion the Church of England has failed, inasmuch as her religious teaching does not proceed regularly and systematically. Partly this is due to the somewhat casual teaching in the Government schools. I consider that the two sacraments are equally necessary. My idea is that from the day of the children's baptism they should be looked upon as adopted, as being the spiritual concern of the whole parish, who have themselves been baptized, and should not be left entirely to their parents or guardians, who are in many cases too occupied in earning their bread to give their children the

spiritual oversight which they require. The religious teaching of children should be as continuous and efficient as the secular.

Professor H. LANGHORNE ORCHARD, M.A., B.Sc. :—

The Author justly remarks that “ When we talk about the religion of the Army, we really mean the religion of the men of the nation ” ; and he shows us that these common men are (with a few unhappy exceptions) by no means irreligious. They have “ a sense of the Divine ” ; they believe that GOD hears and answers prayer ; they feel that sin is *failure* ; and their conduct manifests in some degree not a few of the Christian virtues. Yet, though their religion is real, it is “ desperately imperfect, very far indeed from being fully Christian.”

We shall agree with Canon Hannay that the Christian “ Church ” is in some measure responsible for this state of things,—a state of things caused largely by indifference brought about by (1) A notion that the Minister preaches merely, or mainly, because he is paid to do so—that it is his “ job ” as they have their “ jobs ” ; (2) Failure in the Preacher to lay greater emphasis on essential and fundamental truths than on what is comparatively unimportant. The plain man is perplexed, and turning wearily from theological and dialectical subtleties, is apt to turn from the truths vitally important and to give the whole thing up ; (3) Failure in the Preacher to convince his hearers that Christianity is in intimate practical connection with ordinary everyday life.

Too often, also, there is lack of earnestness and clearness in setting forth the Gospel, the enormity of sin and the fearful character of its consequences, the nature of righteousness as consisting in obedience to GOD, the atonement and resurrection of the Son of GOD—the *personal* Saviour Who saves “ to the uttermost ” everyone who puts heart-faith in His Blood shed upon the Cross, and trusts to that alone for the Divine forgiveness.

Do we ask what is the remedy for the Church’s failure ? The *remedy* is to be found in faithful, prayerful preaching, by the lips and lives of men constrained by the love of Christ, of the Gospel declared in 1 Cor. xv, 2–8. And this not as a system of abstract doctrines, not as a mere university thesis, but as a practical *experience* which they have *personally* verified.