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A table of contents for *Journal of the Transactions of the Victoria Institute* can be found here:

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JOURNAL OF THE TRANSACTIONS
OF
THE VICTORIA INSTITUTE,
—
VOL. XVIII.

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

EDITED BY THE HONORARY SECRETARY,
CAPT. FRANCIS W. H. PETRIE, F.R.S.L., &c.

VOL. XVIII.



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CONTENTS OF VOL. XVIII.

PREFACE	ix.
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JOURNAL OF TRANSACTIONS.

	<i>Page</i>
ANNUAL GENERAL MEETING, JUNE 25, 1883	1
SEVENTEENTH ANNUAL REPORT	1
SPEECHES	9
ANNUAL ADDRESS. BY THE LATE RIGHT HON. THE LORD O'NEILL	14
SPEECHES	32
ORDINARY MEETING, MAY 7, 1883	36
THE TEACHING OF SCIENCE NOT OPPOSED TO THE FUNDAMENTAL TRUTHS OF REVELATION. BY THE REV. J. L. PORTER, D.D., LL.D., PRESIDENT OF QUEEN'S COLLEGE, BELFAST	36
DISCUSSION	65
ORDINARY MEETING, DECEMBER 3, 1883	71
PAPER ON "RECENT EGYPTOLOGICAL RESEARCH IN ITS BIBLICAL RELATION." BY THE REV. H. G. TOMKINS	72
COMMUNICATION FROM M. NAVILLE	87
DISCUSSION	88
ADDITIONAL COMMUNICATIONS, &c.	92
"RECENT ADVANCES IN BIBLICAL CRITICISM AND IN HIS- TORICAL DISCOVERY IN RELATION TO THE CHRISTIAN FAITH." BY THE REV. H. G. TOMKINS	92
THE EXCAVATIONS AT PITHOM	95

	Page
ORDINARY MEETING, JANUARY 7, 1884	99
PAPER ON "CUNEIFORM INSCRIPTIONS AS ILLUSTRATIVE OF THE TIMES OF THE JEWISH CAPTIVITY." BY W. ST. CHAD BOSCAWEN	99
DISCUSSION	135
ORDINARY MEETING, FEBRUARY 4, 1884	140
PAPER ON "NEBUCHADNEZZAR, KING OF BABYLON—ON RECENTLY DISCOVERED INSCRIPTIONS OF THIS KING." BY ERNEST A. BUDGE, M.A.	140
TRANSLATION OF THE INSCRIPTION	151
TEXT AND THE MORE LITERAL TRANSLATION	155
ANALYSIS	179
DISCUSSION	183
ORDINARY MEETING, FEBRUARY 18, 1884	192
PAPER ON "BUDDHISM IN RELATION TO CHRISTIANITY." BY THE REV. R. COLLINS, M.A.	192
DISCUSSION—SPEECHES BY MR. RASSAM, DR. LEITNER (<i>of Lahore</i>), PROFESSOR RHYS DAVIDS, REV. S. COLES (<i>of Ceylon</i>), AND OTHERS	213
ON KRISHNA	225
ORDINARY MEETING, MARCH 3, 1884	228
PAPER ON "PESSIMISM." BY W. P. JAMES, ESQ.	228
DISCUSSION... ..	244
REMARKS BY CANON SAUMAREZ SMITH, D.D.	250
ORDINARY MEETING, APRIL 7, 1884	253
PAPER ON "THE PREHISTORIC FACTORY OF FLINT IMPLEMENTS AT SPIENNES." BY THE REV. J. MAGENS MELLO, M.A., F.G.S. (<i>With Plates</i>)	253
DISCUSSION	261
ORDINARY MEETING, APRIL 21, 1884	270
"THE EVOLUTION OF THE PEARLY NAUTILUS." BY S. R. PATTISON, ESQ., F.G.S.	270

CONTENTS OF VOL. XVIII.

vii

	<i>Page</i>
DISCUSSION	284
ORDINARY MEETING, MAY 6, 1884	287
NOTES ON "PREHISTORIC MAN IN EGYPT AND THE LEBANON." BY SIR J. WILLIAM DAWSON, K.C.M.G., LL.D., F.R.S. (<i>With Plates</i>)	287
REPORT OF PROFESSOR W. BOYD DAWKINS, F.R.S., ON THE TEETH, BONES, AND FLINT IMPLEMENTS FOUND	300
DISCUSSION—SPEECHES BY SIR H. BARKLY, G.C.M.G., K.C.B., F.R.S., PROFESSORS WARINGTON W. SMYTH, F.R.S.,—T. RUPERT JONES, F.R.S., T. WILTSHIRE, F.L.S., F.R.A.S., F.G.S.; ALSO COLONEL HERSCHEL, R.E., F.R.S., DR. J. RAE, F.R.S., AND OTHERS	301
ADDITIONAL NOTE BY THE AUTHOR	313
ORDINARY (INTERMEDIATE) MEETING, MARCH 17, 1884	314
APPENDIX A, THE GUNNING FELLOWSHIP, &c.	315
" B, USE OF THE JOURNAL TO MEMBERS	318
" C, LIST OF VICE-PRESIDENTS, COUNCIL, &c.	320
—	
OBJECTS, &c.	368

*** The Institute's object being to investigate, it must not be held to endorse the various views expressed at its Meetings*

PREFACE.

THE Eighteenth Volume of the *Journal of the Transactions* of the VICTORIA INSTITUTE is now issued. It contains papers by the following authors:—The Rev. RICHARD COLLINS, M.A., on “Buddhism in relation to Christianity,” giving the results of the deepest and most careful researches as yet made into the history of the times when Buddhism took its rise: the author comes to the conclusion that not only are there no grounds for the theory advanced by some home and foreign writers—that Christianity was, to some extent, a development of Buddhism,—but that the intelligent and painstaking student inevitably arrives at the fact that, after the rise and spread of Christianity, Buddhist writers appropriated some of its characteristics. Mr. COLLINS’S position is supported by several authorities on the history of Buddhism, including Principal LEITNER, Ph.D., Vice-Chancellor of the University of the Punjab (who, at the meeting at which the paper was read, exhibited photographs of some of the ancient Sculptures of India to bear out his statements); Professor T. W. RHYS DAVIDS, Mr. HORMUZD RASSAM, and the Rev. S. COLES, M.A. (late of Ceylon), whose remarks

are appended to the paper, and are followed by a short, carefully-compiled essay on "Krishna." Mr. W. ST. CHAD BOSCAWEN, on "the Cuneiform Inscriptions and the Era of the Jewish Captivity." Mr. ERNEST A. BUDGE, M.A., of the British Museum, on "Nebuchadnezzar, King of Babylon, based on recently-discovered inscriptions of this King." Sir J. WILLIAM DAWSON, K.C.M.G. F.R.S., on "Prehistoric Man in Egypt and the Lebanon," giving the results of explorations carried out in those countries during the winter and spring of 1884. The discussion thereon contains remarks by Sir H. BARKLY, G.C.M.G. K.C.B. F.R.S., Professors T. RUPERT JONES, F.R.S., W. WARINGTON SMYTH, F.R.S., and T. WILTSHIRE, F.L.S. F.R.A.S. F.G.S., Mr. S. R. PATTISON, F.G.S., and Dr. RAE, F.R.S.; supplemented by Professor W. BOYD DAWKINS', F.R.S., report upon the teeth, bones, and flint implements discovered by the author of the paper. Mr. W. P. JAMES, on "Pessimism"; the Rev. Canon SAUMAREZ SMITH, D.D., adding a communication thereon. The Rev. J. MAGENS MELLO, M.A. F.G.S., on "the Prehistoric Factory of Flint Implements at Spiennes." Mr. S. R. PATTISON, F.G.S., on "the Evolution of the Pearly Nautilus," contesting the hypothesis "that all the differences between life-forms, ancient and modern, have arisen from time to time by virtue of 'inherent properties.'" This volume also contains the last paper written by the late Lord O'NEILL, giving a clear description of the objections raised against Christianity by one whose admirers claim for him the title of leader of Modern Philosophy. The Rev. J. L. PORTER, D.D. LL.D., President of Queen's College, Belfast, a timely paper entitled "The Teaching of Science not opposed to the Fundamental Truths of Revelation": and, the Rev. H. G. TOMKINS, on "Recent

Egyptological Research in its Biblical Relation," upon which Monsieur NAVILLE has kindly contributed some remarks: and the communications appended describe the most important results of recent research in Egypt. To these and to others who have added to the value of the present volume the best thanks of the Members and Associates are due.

FRANCIS W. H. PETRIE,

Hon. Sec. and Editor.

December, 1884.

JOURNAL OF THE TRANSACTIONS

OF THE

VICTORIA INSTITUTE,

OR

PHILOSOPHICAL SOCIETY OF GREAT BRITAIN.

ANNUAL GENERAL MEETING,

HELD AT THE HOUSE OF THE SOCIETY OF ARTS,

MONDAY, JUNE 25, 1883.

SIR H. BARKLY, G.C.M.G., K.C.B., F.R.S., IN THE CHAIR.

SIR H. BARKLY, G.C.M.G.—In consequence of our valued President, Lord Shaftesbury, being detained by business of a very important character at the House of Lords, I have been asked to preside at our Annual Meeting. I will not detain you by any remarks, but will ask the Honorary Secretary to read the report.

Capt. F. PETRIE then read the following Report :—

Progress of the Institute.

1. IN presenting the SEVENTEENTH ANNUAL REPORT, the Council desires to state that, in spite of those adverse influences affecting all Societies, the Institute's progress at home and abroad continues to be very satisfactory. The number of new American members joining does not diminish, although the Institute's American offshoot (which is an independent Society) is rapidly advancing. In Australia and South Africa a system of corresponding local secretaries has worked well, and will be extended.

As regards the Institute's Philosophical and Scientific Investigations, an increasing number of home and foreign Members and friends now contribute to enhance their value,

and aid the Institute in filling that position which its aims demand. It exchanges Transactions with many leading London Societies, whose Members—whether in its ranks or not—willingly render aid when consulted.

The adhesion of such men as PASTEUR and WURTZ, and many others at home and abroad, has tended to render the Institute more useful “at a time when principles which a few years ago would have been taken for granted by ninety-nine out of every hundred persons, are now all of a sudden brought up for discussion, and doubt thrown upon them,”* and when it is so important that *accurate* scientific research should be encouraged and insisted upon.

2. The following is the new list of the Vice-Presidents and Council:—

President.—The Right Hon. the EARL OF SHAFTESBURY, K.G.

Vice-Presidents.

PHILIP HENRY GOSSE, Esq., F.R.S.	Rev. Principal T. P. BOULTBEE, LL.D.
Rev. ROBINSON THORNTON, D.D.	Sir JOSEPH FAYRE, K.C.S.I., F.R.S.
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Hon. Auditors.—G. CRAWFURD HARRISON, Esq. J. ALLEN, Esq.

Hon. Treasurer.—W. NOWELL WEST, Esq.

Hon. Sec.—Capt. F. W. H. PETRIE, F.R.S.L., &c.

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R. N. FOWLER, Esq., M.A., M.P. (<i>Tr.</i>).	Rev. Principal J. ANGUS, M.A., D.D.
ALEXANDER M'ARTHUR, Esq., M.P.	J. BATEMAN, Esq., F.R.S., F.L.S.
E. J. MORSEHEAD, Esq., H.M.C.S. (<i>F.C.</i>)	The MASTER of the CHARTERHOUSE.
ALFRED V. NEWTON, Esq.	D. HOWARD, Esq., F.C.S.
WILLIAM VANNER, Esq., F.R.M.S.	Professor H. A. NICHOLSON, M.D.
S. D. WADDY, Esq., Q.C.	F. B. HAWKINS, M.D., F.R.S.
ALFRED J. WOODHOUSE, Esq., M.R.I., F.R.M.S.	J. F. BATEMAN, Esq., F.R.S.
Rev. Principal RIGG, D.D.	Sir H. BARKLY, K.C.B., F.R.S.
Rev. Prebendary C. A. ROW, M.A.	The BISHOP of BEDFORD.
J. A. FRASER, Esq., M.D., I.G.H.	Admiral H. D. GRANT, C.B.
H. CADMAN JONES, Esq., M.A.	Rev. DR. TREMLETT.
Rev. G. W. WELDON, M.A., M.B.	Surg.-Gen. GORDON, C.B., M.D.
	R. H. GUNNING, Esq., M.D., F.R.S.E.

3. The increase of the Library, especially in regard to new works of reference, is considered desirable.

4. The Council regrets to announce the decease of the following valued supporters of the Institute:—

* Sir Stafford Northcote, Bart., M.P.

A. Dunlop Anderson, Esq., *A*; Rev. C. Bannatyne, M.A., *M*; H. M. Blair, Esq., *A*; S. R. Bosanquet, Esq., *M*; Ven. Archdeacon S. P. Boutflower, M.A., *M*; Rev. J. S. Bradshaw, *A*; G. Brightwen, Esq., *M*; Rev. Preb. J. W. Brooks, M.A., *H.L.S.*; Captain J. B. Carey, *A*; Rev. Professor J. L. Challis, M.A., F.R.S., F.R.A.S., &c., *M*; Rev. R. Daniel, D.D., *A*; Rev. F. Exton, *A*; A. Haldane, Esq., *M*; Rev. J. Harrison, D.D., *A*; The Right Hon. Dudley Ryder, Earl of Harrowby, K.G., P.C., F.R.S., &c., who long acted as Vice-President, with much advantage to the Institute's interests; Admiral W. Horton, R.N., C.B. (*Foundation Member*); Rev. H. R. Huckin, D.D., *M*; W. H. Ince, Esq., F.L.S., a member of the Council from the commencement, whose many talents and high literary attainments were always at the Institute's service; Rev. Prebendary W. J. Irons, D.D., who took an active part in the Institute's foundation and in contributing to its literature; The Right Rev. Bishop Ollivant, D.D., *A*; G. Maberley, Esq. (*Foundation Associate*); The Very Rev. Dean A. Moore, M.A., *A*; The Right Hon. and Rev. The Lord O'Neill, who, taking special interest in the Institute's work, contributed many papers of high value, *M*; G. Shann, Esq., M.D., *M*; H. Shersby, Esq., *M*; His Grace Archbishop Tait, D.D., *M*; The Rev. H. Taylor, M.A., *M*.

* * * *M*. Member; *A*. Associate; *H.L.S.* Hon. Local Secretary.

5. The following is a statement of the changes which have occurred during the past twelve months:—

	Life		Annual	
	Members.	Associates.	Members.	Associates.
Numbers on 8th June, 1882	43	29	330	500
Deaths			17	10
			—	—
			313	490
Withdrawn			14 } 20	9 } 15
Struck off			6 }	6 }
			—	—
			293	475
Changes.....		2		—2
				—
				473
Joined between June 8th, 1882, and June 21st, 1883		2	26	81
	43	33	319	554
	76		873	
Total.....	949			

Hon. Foreign Correspondents and Local Secretaries, 71. Total ... 1020

Finance.

6. THE EARLY PAYMENT OF THE YEAR'S SUBSCRIPTIONS ALWAYS CONTRIBUTES TOWARDS THE SUCCESS OF THE YEAR'S WORK; the Treasurer's Balance Sheet for the year ending 31st December, 1882, audited as usual by two specially qualified unofficial members, shows a balance in hand after the payment of every liability. The amount invested in the New Three per Cent. Annuities is £1,302. 18s. 9d.

7. The arrears of subscription are now as follows:—

	1874.	1876.	1877.	1879.	1880.	1881.	1882.
Members ...	1	1	0	2	5	3	9
Associates ...	0	0	1	4	7	8	27
	<hr/>						
	1	1	1	6	12	11	36

Meetings.

MONDAY, DECEMBER 4.—“On Assyrian Inscriptions.” Rev. O. D. MILLER, D.D.

MONDAY, JANUARY 1.—A Paper on “The Argument from Design in Nature, with some Illustrations from Plants,” by W. P. JAMES, Esq., M.A.

MONDAY, JANUARY 15.—Paper by Professor G. G. STOKES, F.R.S., Lucasian Professor of Mathematics at Cambridge.

MONDAY, FEBRUARY 5.—“Is it possible to know God, being Considerations on the Unknown and Unknowable of Modern Thought?” by the Rev. J. LIAS, M.A., late Prof. of Hist. and Mod. Lit. at St. David's Coll.

MONDAY, FEBRUARY 19.—A Paper on “Life and its Manifestations in Man and in the Lower Animals,” by Surg.-Gen. C. GORDON, M.D., C.B., Hon. Phys. to the Queen.

MONDAY, MARCH 5.—“On Certain Definitions of Matter.” J. E. HOWARD, Esq., F.R.S.

MONDAY, MARCH 19.—“Evolution under Control” (a lecture), by C. SMITH, Esq., F.G.S.

MONDAY, APRIL 2.—“The Arguments in regard to the Descent of Man.” Archdeacon BARDSLEY.

MONDAY, APRIL 16.—“Recent Babylonian Researches,” by HORMUZD RASSAM, Esq.

MONDAY, MAY 7.—“The Teaching of Science not opposed to the Fundamental Truths of Revelation,” by the Rev. J. L. PORTER, D.D., LL.D., President of Queen's College, Belfast.

MONDAY, MAY 21.—“The Existence of God.” Rev. J. LIAS. “Degeneration and Evolution,” by HASTINGS C. DENT, Esq., C.E. (Lecture.)

MONDAY, JUNE 25.—*Anniversary* (at the Society of Arts' House). Special Paper by the Right Hon. Lord O'NEILL (the late), read by the Right Rev. the Lord Bishop of DERRY.

8. The meetings during this session have been held as

usual, and the improvements in the Lecture Room have added to the general comfort.

Publications.

9. The sixteenth volume of the *Journal of Transactions* has been issued.

10. Her Majesty the Queen, in consequence of a communication from the President, has been graciously pleased to accept the volumes of the Transactions of the Victoria Institute. It is hoped that ere long Her Majesty may become its patron. (See Vol. I., p. 31.)

11. Members and others in many parts of the world have written, expressing warm approval of the Institute, and their sense of the value of the *Journal*. (See Part 65, pages 9 *et seq.*) The papers and discussions are referred to by many as especially useful by reason of their containing careful examinations of those questions of Philosophy and Science said (by its enemies) to militate against the truth of Revelation.

12. A demand for the *Journal* has arisen on the part of the large Colonial and American Libraries, several have purchased complete sets.

13. Spain is now added to the list of countries in which the Transactions are translated.

14. The *Journal* is much used by Members and others lecturing at home, in India, and the Colonies.

The People's Edition.

15. The People's Edition of certain of the popularly-written papers is highly valued by the general public in England, India, and especially in the Colonies (where some bookseller agents have now been established); but the "Special Fund" for this and organizing purposes needs large support, if the Institute is to meet present requirements and take advantage of present opportunities.

16. It has been urged that there is a pressing need for the Institute, as a Philosophical body, taking up the following subjects in a manner suitable to the understanding of the working and less educated classes, and dealing with them in such a way as to meet the errors in modern thought now being propagated amongst these classes (See Object V.):—I. The existence of a God; II. The Argument from Design; III. Man's Responsibility.—Steps are now being carefully taken to do this in the most effective way; by securing the aid of authors of the greatest repute, and

holding meetings of those who have considered such subjects, so that the resulting papers should be of the highest attainable value. The ability of the Institute to carry out the plan, however, rests on the support accorded to the "People's Edition Fund," upon which the extensive foreign and colonial work of the Institute also much depends.

Remarks.

17. The immense exportation by the English Secularist Societies of quasi-philosophical publications of an avowedly Atheistic character to the Colonies and India is an increasing evil. At Madras an important meeting of Europeans and Natives having been held to devise means for meeting this state of things; the Institute and its aims were specially referred to.

18. Communications from foreign countries also reach the Institute of the prejudicial influence of translations of the above-mentioned literature, affecting, as it does, not only the religious but the moral and even the intellectual character of Peoples.

Conclusion.

19. In conclusion, all must feel thankful for the Institute's progress. It may be truly said that the steady support accorded by both Members and Associates has been a special means to its remarkable advance. All have appeared to realise that the Institute was really doing good service, and that of the highest character, being, in the words of our motto, *Ad Majorem Dei Gloriam.*

Signed on behalf of the Council,

SHAFTESBURY,

President.

SEVENTEENTH ANNUAL BALANCE-SHEET, from 1st January to 31st December, 1882.

	RECEIPTS.	£.	s.	d.	£.	s.	d.
Balance brought forward...	...				2	11	7
Subscriptions:—							
5 Life Associates	...				52	10	0
1 Member, 1880	...	2	2	0			
6 " 1881	...	12	12	0			
260 " 1882	...	546	0	0			
15 " 1883	...	31	10	0			
22 Entrance-fees	...	23	2	0			
1 Associate, 1879	...	1	1	0			
5 " 1880	...	5	5	0			
14 " 1881	...	14	14	0			
391 " 1882	...	410	11	0			
26 " 1883	...	27	6	0			
1 " 1884	...	1	1	0			
1 " extra	...	1	0	0			
		—			1,076	4	0
Dividends on £1,250. 16s. 7d.							
New 3 per Cent. Annuities	...				36	12	6
Donations to Library Fund	...				0	5	0
" People's Edition Fund	...				129	1	0
Sale of Journals, &c.	...				88	19	6
Hire of Rooms	...				3	3	0

£1,389 6 7

	EXPENDITURE.	£.	s.	d.
Printing	...	431	15	0
Binding	...	32	19	0
Reporting	...	35	14	0
Stationery	...	71	7	3
Postage and Parcels (Home and Foreign)	...	159	14	10
Advertising	...	30	9	6
Expenses of Meetings	...	38	11	6
Rent to Christmas, 1882	...	160	0	0
Salaries for Year	...	71	9	6
Housekeeper	...	19	15	4
Travelling Expenses	...	17	10	9
Coals	...	3	4	10
Gas and Oil	...	8	19	10
Water Rate	...	3	0	0
Insurance	...	0	12	0
Sundry Office Expenses	...	5	0	9
Library, Books, Repairs, &c.	...	25	18	1
Voted to the Hon. Sec. and Editor of Journal	...	210	0	0
Bankers' Charges	...	0	16	6
Invested in New 3 per Cent Annuities	...	52	10	0
Balance in hand	...	9	8	5

£1,389 6 7

We have examined the Balance-Sheet with the Books and Vouchers, and find a Balance in hand of £9. 8s. 5d.

G. CRAWFURD HARRISON, }
JOHN ALLEN, } *Auditors.*

W. N. WEST, *Hon. Treas'*

DONATIONS IN 1882.

	£.	s.	d.
LIBRARY FUNDDr. Colan	0	5	0

PEOPLE'S EDITION FUND.

Biden L., Esq.	1	1	0
Braithwaite, J., Esq.	10	0	0
Callard, T. K., Esq.	2	2	0
Curteis, Miss	1	0	0
Dale, T. B., Esq.	5	0	0
Dent, Hastings C., Esq. ...	1	1	0
Freeman, Major	1	1	0
Glyn, Rev. Sir G., Bart. ...	2	18	0
Harcourt, E. V., Esq.	2	0	0
Harries, G., Esq.	30	0	0
Hawkins, F. B., Esq., M.D., F.R.S.	5	0	0
Kennedy, Rev. H.	1	0	0
Longley, F. E., Esq.	1	1	0
MacPherson, Rev. A.	2	0	0
Moore, G., Esq.	5	0	0
Morley, S., Esq., M.P. ...	50	0	0
Neale, Miss	1	1	0
Palmer, J. L., Esq.	1	1	0
Short, D.D., Right Rev. Bishop (late Adelaide)	1	0	0
Whitley, N., Esq.	2	2	0
Woodhouse, A. J., Esq. ...	3	3	0
Woods, G., Esq.	0	10	0

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The Right Hon. A. S. AYRTON, P.C.—I have to move : “That the Report be received, and the thanks of the Members and Associates presented to the Council, Honorary Officers, and Auditors for their efficient conduct of the business of the Victoria Institute during the year.” I am invited to move this resolution because, like most of you, I take very deep interest in the proceedings of this Society ; and I enjoy, as I have no doubt many of you do also, the great pleasure of reading its proceedings from time to time. I think that those proceedings in an eminent degree grapple with the doubts and difficulties that are met with in the study of nature, and tend to satisfy the mind of any reasonable person that, instead of what are called modern discoveries and researches tending to overthrow the generally-entertained conviction that the Author of all things is God, they lead, when justly and rightly considered and reasonably examined, to the very opposite conclusion. (Applause.) In my opinion every discovery that has been well established and generally admitted has only afforded another proof of the wondrous wisdom shown in all the works of creation. The Society’s publications, I am glad to see, are being sought for and diffused in all parts of the intellectual world. It is satisfactory to know that the efforts which are made here afford in almost every part of the Queen’s dominions a new basis for thought or action, and a new means for carrying on any controversy that may have been raised by publications of a character which we have no right to condemn—because everybody has a right to say or to print what he thinks—but which we have an undoubted right to refute and to show that they are not based on the facts which have been presented to us. Such is the view I take of the efforts of the Society, and of the principal results of those efforts. For some time past, however, I have entertained a rather decided opinion, which I will take this opportunity of expressing—not with any authority, but rather as a suggestion for the consideration of the Council which manages our affairs—in regard to the desirableness of extending our sphere of operations. There are amongst our members men who perfectly understand the elaborate arguments which are necessarily used when we enter into controversy with other men of great mental capacity, who have used that capacity in writing works for the purpose of leading the public to conclusions which we do not recognise or admit. There is being diffused all over the country literature which has only one merit, namely, that it is extremely cheap—although, if a thing is bad, that which would be a merit if it were good becomes a very great element of evil. (Hear, hear.) The cheapness is not an evil, but the rapid dissemination of the contents of a cheap bad book is much to be deplored. If we are to combat this growing evil, we must do so by operating in the same manner as those whose teachings we disapprove. We must endeavour to diffuse everywhere cheap works of a kind that all people can read who can read at all, and that all who read can understand—works which can be followed without any difficulty or embarrassment, and containing arguments which can be appreciated because they are set forth in a form and style which comes home to their minds and feelings, and in a language with which they themselves are perfectly familiar. These are the

sort of works which are used in the dissemination of error ; and, if we wish to overtake and circumvent error, we must use the same methods. Our works must be as engaging and inviting—I hope, indeed, a great deal more engaging and inviting—than those which we condemn. I think this Society will do well, now that it has arrived at a certain stage of maturity, to devote its attention to the production of works of this kind. They ought to be cheaper than any of those works of evil which we desire to combat, and in this respect we ought to be able to win the battle. We start with very great advantages on our side ; and, if the works of our opponents are sold for two-pence, we ought to be able to sell ours for a penny. (Hear, hear.) We ought to make use of the first attraction of all, namely, that every one can afford to buy what we can afford to sell. We are bound to ask ourselves what constitutes attraction in the minds of the many. I object to the use of any class distinctions in putting forward literary productions, such as calling them “works for artisans,” &c. There are works which are intended for scientific minds, for the use of persons engaged in the pursuit of particular branches of learning ; but outside these, and distinguished from them, there are the books addressed to the general reader, who wishes to approach a subject without preliminary learning and to understand what he reads. This is the only distinction which should be observed. The publications I speak of ought to be prepared for the use of the general reader. If this plan were adopted, you would invite the attention of the working-man as a member of the general community, and not as one outside the community, and one to be treated in a special manner, and you would thus bring him within the brotherhood of knowledge. These works should, then, be written in the most simple and common language. I do not wish to say anything depreciatory of what is called scientific language ; but every scientific man must admit that such language, as addressed to the general reader, is little more than a jargon of two dead languages mixed up in the most unsatisfactory manner, and conveying no meaning whatever. You must, then, take a review of that which you wish to do, and you may be quite certain that if you adopt this course the work will be accomplished in a manner which will fulfil the desire that is entertained. If you start at random upon this great and very grave task, the result will be the same as it would be if you went into a shop, gave a very ambiguous order, and expected to get what you wished for ; it would, in fact, generally be disappointment. I think, then, that the Council should first attempt to get a clear comprehension of the character of the work, and that they should then obtain the services of those who, from their clearness and force of expression, their knowledge and learning, would be capable of producing a review of modern science, leading, step by step, up to the conclusion we desire—that is to say, leading from nature to nature’s God. (Applause.) If time permitted, I could give, not a perfect, but a slight sketch of the sort of work I have in my mind ; but I am warned that the time at the disposal of any individual speaker is short, and if I entered further into the subject I am afraid I should go beyond the period

that is assigned to me. But in making these general observations I have a very clear conception of the whole scope and character of such a work ; how it should begin, how it should traverse the whole ground of science, showing, step by step, the absolute impossibility of matter making the intelligence by which the action of matter in the world is regulated ; how impossible it is that vegetables can invent, if I may so say, the elaborate processes by which they grow and propagate their species, by which, when they die, they leave their successors, and by which those successors do the same ; how absolutely impossible it is, if you go into the animal kingdom, the same thing can occur, that animals, beginning with those which are so minute that we cannot discover them with our unaided powers, could have invented the conditions under which they live, and the transformations into other forms of life ; how absolutely impossible it is that all the transformations should have gone on without any guide—because the idea is that they have invented something above their own existence ; how absolutely contrary to all reason and sense this is in all branches of life, and still more how impossible it is in inanimate nature. (Applause.) If it is possible that any living thing could perform such an operation, it is absolutely impossible to suppose that an unliving could do so. We are brought to this one general conclusion, having reference to all things with and without life—namely, that the power of human observation is limited. If people go to Maskelyne & Cook's, they think that some of the things which are done there are almost miraculous, because the observation is not commensurate with what passes before the eyes. In the same way, in studying nature we are brought to the limits of our power of observation. All materialists admit that there is a point of minuteness which the human faculties of observation cannot go beyond. If, therefore, the result of all modern science and material effort is to leave you at a point beyond which material effort cannot reach, beyond which you have to deal with inferential deductions from that which you can see to that which you cannot see—if that is the result of all modern science, as it is its great glory and triumph, observe how you are brought in direct relation with that which man cannot appreciate with his own senses, but only with his intellect, and therefore into the realm which we say is the realm of the power and wisdom of God. Thus, every step is a new proof of the impossibility of any theory of what may be called material growth and development, and is, on the other hand, an absolute proof of the necessity of adopting the belief that there is a Power above which alone has prescribed the whole law for that which is living and unliving on the face of the earth—that law which mankind alone are capable of appreciating by the use of faculties which they could not have invented for themselves, but which they have received and are bound to cherish as the greatest gift of God. Such, in general terms, would be the scope of the work to be presented to the general reader of this country—a work which should present to him not merely subject for contemplation, but, at the same time, arguments that will convince him of the truth of what is challenged, and also bring him to the point of union with the ideas which

he receives from the source of revelation. It is thus the two are brought into unison and harmony, and each supports the other, and brings the mind of man to that highest point of revelation—namely, that he is the creature and servant of God, that he is capable of appreciating the will of God, and therefore of being accountable for all his actions here. This is the scope of the work which I would suggest for the consideration of our Council. I have not gone into it in any detail, on account of time, and I would say that it cannot be done in a day—nay, I do not think it could be done in a year with proper care and attention—but it may be done at no distant day, and I hope that when that time arrives the funds may have been found for its adequate dissemination. The question is one which ought not to be approached in a narrow and little spirit. If such a work is worthy of being published, it ought to be published in so many thousands, that the cost of producing it would be little beyond the cost of the paper on which it is printed. If you make a great effort, and print hundreds of thousands, the work will not only reach all parts of this country, but will be spread abroad in all places, and will sustain itself, although, in the first instance, the society ought to be able to get together the funds necessary for sending forth productions which shall be worthy of the labours which will have to be bestowed upon them. (Applause.)

Mr. S. SMITH, M.P.—I am very glad to be here to-night, to second this motion and to testify the strong feeling of interest which I have in this society. This is the first occasion upon which it has been possible for me to attend any of our meetings, but I have received our very valuable Journal for several years, and, so far as I have been able, I have read the papers therein. I think this society has been doing a very good work in this country and in this age. No one who carefully observes the progress of opinion can doubt that there has been a great growth of wild, intidel, and atheistic opinions in this country of late years. I often feel somewhat depressed and alarmed in noticing the strong tide which is running in favour of agnosticism, and the denial of all that we have hitherto considered most sacred. Perhaps these opinions have not yet entered very deeply into society, but we cannot ignore the fact that they are held by many able, intellectual men, and by some men whom we have been in the habit of looking up to as leaders in science, in letters, and in philosophy, and that they are sinking down into what are called the lower classes, with very pernicious effects. It came to my knowledge not very long since that doctrines which are destructive of the very foundations of morality and civilisation are being advocated by certain bodies. They have probably gained as yet the adhesion of comparatively but a few; but, at the same time, I am afraid that they will spread. Whenever the ground has been prepared for them by the destruction of man's sense of reverence and responsibility to God, the progress is very rapid towards anti-social doctrines. See what is going on in another country at this time. In the neighbouring country of France, and especially in the City of Paris, the foundations of morality are already to a large extent overthrown in the minds of the masses. A friend of mine who has just returned from Paris tells me that he attended

a meeting of Socialists while he was there, and the feeling which pervaded that meeting was one of bitter hatred against all classes possessing property, and that the idea of civil war was hailed with cheers. I am told also that the *employés* in Paris will not now recognise their employers, or hold any intercourse with them. They have received instructions from their societies that the employers are to be kept at arms' length, and that no intercourse is to be held with them. The doctrine widely preached is that the only way to treat the employer of labour and the capitalist is to put him out of the way as soon as possible. This is a matter which is worthy the attention of all thoughtful men, and I think that those who are dallying with these doctrines are little aware of the state of things they are helping forward, and of what would be the consequences if such doctrines were commonly held by the people. This Society is one of the various means of combating such views. Of course, I do not lose sight of the work accomplished by the Christian Church, which is the great means of preserving in this world all the elements of peace, prosperity, and true social welfare ; but it has various auxiliaries, and I think this Society and other associations, are very valuable aids to the more direct religious work of the Christian Church. I think also we require to recognise more clearly the terrible condition in which a large portion of the population exists. I am convinced that the extreme degradation in which certain portions of our large populations live is a seed-bed in which these dreadful infidel anarchical doctrines will take root and bear the most bitter fruit, and it becomes those who value the future of the country to consider what they can do to improve the condition of these degraded masses. Are we sufficiently alive to the fearful elements of danger that lie near our doors ? These people have kept very quiet, all things considered. They have not yet been much influenced by infidel lecturers and agitators ; but they will be drawn more and more in this direction. Education is spreading. The children of these degraded masses are being taught to read. The first literature that will come into their hands is this infidel literature of which Mr. Ayrton has been speaking, filled, as it is, with the most dangerous doctrines ; and when a few years have elapsed, we may expect a crop of Atheism and Communism, with all its attendant evils, in this country, such as is now being produced in Paris. We see it in America, and I am sorry to say that the same thing is spreading in India, where the educated natives are to a great extent becoming adherents of the doctrines of Mr. Bradlaugh.* All these things fill one with considerable dread of the future. I apprehend that the great battle of the future will be with unbelief in all its most daring forms, and it behoves all who love their country to do all they can to counteract these dangerous agencies. This society is one of the means well adapted for that purpose. I wish it all prosperity, and hope its publications will prove a great success. (Applause.)

The motion was carried unanimously.

* The natives of India welcome England's effort to educate them ; Mr. Bradlaugh and the Secularist societies have taken advantage of this feeling to very largely introduce literature containing their doctrines, which are the more readily accepted as true, because they also come from England.—Ep.

Mr. JAMES BATEMAN, F.R.S.—In acknowledging this kind vote of thanks, my words will be very few: and they will not be few, I am sorry to say, from any embarrassment such as a person might feel from having himself wrought any part of the meritorious work which has called forth such a handsome acknowledgment in such an important meeting. Full justice, and, I think, no more than justice, has been done to the Council; honour to whom honour is due; and we must not forget the thirteen years' labours of my gallant friend the Hon. Secretary, who is entitled to a very large share of this well-merited meed of praise. He must himself be astonished at the success of his labours. To those labours, to his indomitable perseverance, and to his unflinching faith in his mission, this Society owes what it has attained. I remember the time when our adherents were reckoned by units, while now they are to be counted by hundreds, for at this moment the Society has a roll which extends to four figures. (Applause.) It would have been still larger than it is but for a very heavy death-rate, which includes some of our most important members, and men who were universally known, such as the Earl of Harrowby and Lord O'Neill. How much the Society has lost by the death of Lord O'Neill you will be better able to appreciate when you have heard the paper which the Bishop of Derry is about to read. I hope I shall not be accused of any breach of confidence if I read a passage from a letter which I received yesterday from Lord O'Neill's widow. She tells me that not only she, but her daughter and all the family have their thoughts fixed on this meeting to-night. Her words are these: "I do hope that you and all who value the dear and holy words will be able to be present, and in doing so you will bring solace to a heart as completely broken as there ever was on earth." This adds a new interest to our meeting to-night, and I am sure it will be a great privilege to me to be able, when the meeting is over, to communicate to Lady O'Neill, not only how largely it was attended, but also how fully the value of Lord O'Neill's paper was appreciated by those who were privileged to be present.

[THE following Address (entitled "An Unbeliever's Description of Christianity") written shortly before his decease, by the late Rt. Hon. LORD O'NEILL, was then read by the RIGHT REVEREND the LORD BISHOP OF DERRY.]

I AM not aware that I have met with any more succinct enumeration of the objections raised against Christianity, or one more plausibly expressed, than that which occurs in Mr. Herbert Spencer's *First Principles*, p. 120. Speaking of the spirit of toleration which "the catholic thinker" should display, he there says:—

"Doubtless, whoever feels the greatness of the error to which his fellows cling, and the greatness of the truth which they reject, will find it hard to show a due patience. It is

hard for him to listen calmly to the futile arguments used in support of irrational doctrines, and to the misrepresentation of antagonist doctrines. It is hard for him to bear the manifestation of that pride of ignorance which so far exceeds the pride of science. Naturally enough, such a one will be indignant when charged with irreligion, because he declines to accept the carpenter-theory of creation as the most worthy one. He may think it needless, as it is difficult, to conceal his repugnance to a creed which tacitly ascribes to the Unknowable a love of adulation such as would be despised in a human being. Convinced as he is that all punishment, as we see it wrought out in the order of nature, is but a disguised beneficence, there will perhaps escape from him an angry condemnation of the belief that punishment is a divine vengeance, and that divine vengeance is eternal. He may be tempted to show his contempt when he is told that actions instigated by an unselfish sympathy, or by a pure love of rectitude, are intrinsically sinful; and that conduct is truly good only when it is due to a faith whose openly-professed motive is other-worldliness. But he must restrain such feelings," &c.

And the Christian must also restrain his feelings of "indignation," "repugnance," "angry condemnation," and "contempt," when he meets with such a burlesque of Christianity as that set forth in the paragraph just quoted. Not being able to read the hearts of his fellow men, he must endeavour to give them credit for good intentions, even when they are misrepresenting and vilifying the religion which he believes in his heart to be true, and on which he leans for deliverance from the wrath to come. He must not allow himself to be surpassed by the unbeliever in patience and forbearance, when he sees the creed which he is accustomed to hold in veneration painted in false colours, and finds doctrines which, so far as they are believed and acted on, are calculated to regenerate the world, represented as irrational, degrading, and injurious to morality. This charitable spirit I shall endeavour, with God's help, to maintain in dealing with Mr. Spencer and others who assail the doctrines of Christianity. I desire to believe that their study of the orderly and regular processes of what we call nature, has caused them unconsciously to see subjects of a different kind through a distorting medium, and that they are not instigated by any wrong motives or intentions.

In all caricatures, a certain likeness to the original is preserved. It is this, indeed, that gives them their piquancy. And it is not difficult to see, in the above passage of Mr. Spencer's, a likeness to the creed which is burlesqued in it, sufficient to leave us without any doubt that Christianity

is the religion held up to scorn through it. It divides itself into five heads:—

1. The carpenter-theory of creation.
2. Love of adulation on the part of the Deity.
3. Eternal vengeance.
4. Good actions intrinsically sinful.
5. Other-worldliness the motive of faith.

First, then, as to the carpenter-theory of creation.

If by this expression be meant simply a belief that God created the universe and all that it contains, what can be the object of calling it the carpenter-theory? The only conceivable object, in that case, is to make it *sound* absurd, by giving it an anthropomorphic twang which does not in reality belong to it. It is like the Puritans creating a prejudice against church organs, by calling them "whistle-pipes," or "skirl-pipes." I am not aware of having ever seen the belief in creation called a carpenter-theory by any Theist, whether the form of his religion be Christianity or any other. It is, in fact, a *nickname*, most unjustly conferred upon that belief by those who reject it. It is true, we occasionally find the Creator of the universe spoken of as "the great Artificer." But it is evident to all who choose to see, that this word is only meant to be a synonym to the word "Creator," expressing (as synonyms generally do) but a part of the whole idea, and used with a view to avoid wearying the ear with the same word often repeated, as well as to impart a pleasing variety to the language. "Artificer" means, in its strictest sense, "maker," a word which is also often applied to the Creator, as witness its use in our creeds. And both these words (artificer and maker), when used in speaking of men, can only include in their signification the idea of forming things out of materials already existing. Transferred metaphorically to the Deity, they connote to believers the additional idea of creating those materials. Believers, therefore, in using such words, are very far from implying that God only works as a carpenter does, from materials ready to his hand. But it suits the object of unbelievers to ridicule them as holding this view, and as associating the Deity in their imagination with a wooden bench, in the midst of planes, saws, chisels, sawdust, shavings, &c.

If they should reply that by the carpenter-theory of creation they mean the belief in creation out of nothing, then the word is a complete misnomer. Believers in creation no more believe in the carpenter-theory of creation than does Mr. Spencer himself. They believe that God called the world into existence out of nothing, the very thing which a carpenter cannot do. Mr. Spencer may, therefore, spare his indignation at "being charged with irreligion because he declines to

accept the carpenter-theory of creation as the most worthy one." Those against whom he feels so indignant might, perhaps, charge him with irreligion if he *accepted* that theory. But certainly it is not for rejecting it that they do so. It is for rejecting creation itself. It is for rejecting the doctrine that there is a conscious, intelligent Creator of the universe, or any God, unless that name may be given to the Persistence of Force which he seems to identify with the Unknowable (*First Principles*, chap. vi.).

But why should Mr. Spencer feel so indignant at being charged with irreligion? Does he wish to be considered religious? As a worshipper of the persistence of force, perhaps he does. But he cannot expect that Christians will accept that for religion. Or perhaps he only objects to the *ground* on which the charge is brought. If so, however, I think it has been sufficiently made to appear that he has entirely mistaken that ground. The ground is that he rejects God as a Creator, not as a carpenter.

Dr. Tyndall, in his well-known Belfast Address, supplies us with a similar, yet somewhat different, view of this "carpenter-theory." Speaking (in p. 36) of the different forms of life, rising gradually from the simplest to the most complex, he says: "In the presence of such facts it was not possible to avoid the question—Have these forms, showing, though in broken stages and with many irregularities, this unmistakable general advance, been subjected to no continuous law of growth or variation? Had our education been purely scientific, or had it been sufficiently detached from influences which, however ennobling in another domain, have always proved hindrances and delusions when introduced as factors into the domain of physics, the scientific mind never could have swerved from the search for a law of growth, or allowed itself to accept the anthropomorphism which regarded each successive stratum as a kind of mechanic's bench for the manufacture of new species out of all relation to the old."

By those influences which have always proved hindrances and delusions when introduced into the domain of physics, Dr. Tyndall evidently means the Mosaic account of the Creation, which, according at least to the ordinary interpretation, assigns a distinct act of creation to each of the successive forms of life. And this he calls *anthropomorphism*, which is as unfair and false a term to apply to it as is the term "carpenter-theory." For what is anthropomorphism? It is taking our idea of the Deity from what we see in man. It is, to use another expression of Dr. Tyndall's, looking upon God as "a manlike artificer." But what is there that is manlike in

creating the universe out of nothing? It is just, of all others, the thing which no man ever did or could do. We may justly enough ascribe anthropomorphism to the ancient heathens, who described their gods and goddesses as swayed by human passions, prejudices, and interests, and having material bodies—a little more ethereal, perhaps, and more easily transformed than those of men, but sustained by food and drink (which, to distinguish them from those used for human wants, were called “ambrosia” and “nectar”), and capable of being hurt, though not completely destroyed, seeing that they were immortal. Thus, Homer represents Venus as wounded in battle by Diomedes, which caused a refined kind of blood, called ichor, to flow from her hand (“Iliad,” v. 340). Virgil* represents his gods and goddesses as changing their form when occasion required, which is, no doubt, attributing to them a power more than human; but even so, we may accept Hume’s description of them, as quoted by Dr. Tyndall in the first page of his Belfast address—namely, that they “were nothing but a species of human creatures, perhaps raised from among mankind, and retaining all human passions and appetites.” That the invention of gods and goddesses such as these may be ascribed to anthropomorphism, we can readily admit. But the God in whom Christians believe is as different from these as light is from darkness. These have bodies and passions like ourselves, whereas our God is a pure Spirit, “without body, parts, or passions” (Art. I.). I am not aware that any of the heathen gods were supposed to have created the universe out of nothing. Jupiter is indeed called “pater omnipotens” by Virgil in many places, but I find no trace of the idea that his power extended beyond a certain control over the atmosphere, whereby he was supposed to wield the powers of thunder and lightning, or such a control over matter as we ourselves have (only in a much greater degree), whereby the mountain Olympus, which was supposed to be his throne, could be shaken by his nod (“Æneid,” ix. 106). But however this be, the power to create is a power utterly impossible to man, and to accuse us of anthropomorphism for attributing this power to God, however little intended by Mr. Spencer and Dr. Tyndall, is to utter a most unfounded calumny against those who believe in the Creator of heaven and earth.

The belief in successive creations is made to sound more improbable still by Dr. Tyndall, through the use of an

* “Æneid,” i. 315, and vii. 419.

expression whose unfairness is indubitable. In p. 58 of the Belfast Address he describes that belief as "a theory which converts the Power whose garment is seen in the visible universe into an artificer, fashioned after the human model (the usual cavil again) and *acting by broken efforts*,* as man is seen to act." The effect of the word "efforts" on the mind of an unthinking person would be that he should imagine the efforts of the Creator, or at least some of them, to have been unsuccessful. Else why call them efforts? Why not say they are *acts*, which word means *successful* efforts, and would truly describe the work ascribed to the Deity by believers? But he also calls them *broken* efforts, thereby intensifying the idea of want of success, because the expression seems to imply that they had to be broken off, some of them at least, in an unfinished state. If this were not the object, "successive," or some such word, would be the correct one to use. It might be asked, How would Dr. Tyndall like to hear the words "broken efforts" applied to a series of successful physical experiments conducted by himself?

It is really surprising that men of philosophical mind and habits of thought should condescend to such quibbling. If it were to promote any other object than the depreciation of religion, I cannot think they would. But for such an object as that, it seems all stratagems are allowable.

Mr. Spencer, in an earlier part of his book than that to which I have been lately referring (*First Principles*, pp. 33-4), carefully calls attention to the inadequacy of the "carpenter-theory" to serve as a simile for creation. But he does so under the delusion that Theists have adopted that theory, the fact being that it is falsely attributed to them by the men of his school. Theists, especially those of them who are Christians, have no theory whatever on the subject of creation. By a theory is generally meant a hypothesis explanatory of some fact. The fact of creation they acknowledge, but they confess their inability to account for it by any theory. Whatever else, therefore, may be said against us, let us no more be charged with accepting, or requiring others to accept, the carpenter-theory of creation.

The next objection we have to consider is that in which we are accused of ascribing a love of adulation to the Deity.

If we take the word "adulation" in its usual sense, it is enough simply to deny the charge. That God is pleased with His creatures for their own sake, when they appreciate His character, however inadequately, and when they have a

* The italics are mine.

grateful sense of His goodness towards them, is a truth which believers are not ashamed to confess. And for the outward expression of such feelings on the part of men, they use the word "praise," but not "adulation." The word "praise," however, would not have answered Mr. Spencer's object, and therefore he prefers to call it "adulation." Now, adulation means flattery, which is a very different thing from praise. If I might venture to explain the difference, the word "adulation" includes in the idea expressed by it, the notions of servility and insincerity on the part of the flatterer, together with the supposition that the flattered person is so vain as to swallow all that is said to him, and so weak as to be induced to confer favours without reference to the question whether the object of them be deserving or not. Praise includes none of these elements. It is the outcome of admiration of the divine attributes, among which are right and justice, and freedom from all those weaknesses to which human beings are liable. This word therefore would not have served Mr. Spencer's turn. "Adulation" suits him much better; only it has this disadvantage, that it is utterly inapplicable to the Deity in whom Christians believe. I hope, therefore, we may no more hear believers charged with worshipping a God who loves adulation.

The next charge brought against the God whom Christians acknowledge is, that they consider punishment to be a divine vengeance, and that divine vengeance is eternal. Now it may be fully admitted that the Scriptures often use such words as "vengeance," "anger," "wrath," &c., when speaking of punishment inflicted by God. But inasmuch as the God in whom Christians believe is described by them as a Spirit, "without parts or passions," as already observed, it is evident that they do not understand the words in question in the sense in which they are used when applied to human beings. They are used to signify that God does what *in a man* would be looked upon as the result of one of those passions, but it is not meant that the Deity acts upon any such impulse, or from any other motive than to do what is right. When the Scriptures say that the eyes of the Lord are over the righteous, and His ears open to their prayers, no one imagines them to mean that the Deity has the bodily parts there mentioned, inasmuch as they always represent Him as pure Spirit. Similarly when they say His hand is stretched out, or His arm uplifted, no one is so absurd as to think they attribute to Him literally the possession of arms or hands. Why, then, should they not be understood in a somewhat similar manner when they speak of divine vengeance? The

character of God is so little comprehensible to us, that we can only take in descriptions of it which are couched in human language. We are quite unable to represent to ourselves the state of mind (to use a very inadequate expression) which corresponds in Him to the feeling which we call vengeance. Beyond the fact that it terminates in acts something similar to those which are the outward manifestation of vengeance in us, we know nothing about it. We can only believe that God punishes the wicked, because He sees it to be fitting and right that He should do so. There are, no doubt, some who question the fitness or righteousness of the acts of the Deity in this matter. But I believe that such persons speak of a matter of which they are no judges. If we were our own judges, no doubt we should punish ourselves lightly, if at all. And it appears to me that we are only able to look upon the matter from our own standpoint. I mean that we can only know what judgment we should pronounce upon our own demerits, but have no means of judging how they ought to appear in the sight of God, or with what degree of punishment it is right that they should be visited. Those of whom I have now been speaking admit God's justice in inflicting a certain amount of punishment. They believe that His inflictions are not vengeance, such as men would exercise, and here their view of Christianity differs from that depicted by Mr. Spencer. Whether the punishment be greater or smaller, shorter or longer, he attributes it (in his representation of that view) to a motive of revenge—for although he calls it vengeance, which is a word of somewhat wider signification, the implied motive is revenge, otherwise the objection would amount to nothing. Vengeance may, I think, be explained to be the infliction of punishment from a motive of revenge. And this, all believers refuse to accept as the explanation of Divine punishment. Surely if Mr. Spencer had considered the great love for the world which Christians ascribe to God, and which induced Him to give His only Son to save its inhabitants from the punishment which justice would otherwise oblige Him to inflict—he might have been saved from giving so false and injurious a representation of the divine motives, as forming a part of the Christian system.

What I have said about applying to God words ordinarily used to express human feelings, may be taken as explanatory of the Christian view (mentioned under the last division of our subject), that God is pleased when His creatures express their appreciation of His perfections in terms of praise. As we can form no adequate conception of the feeling in Him to which we give the name of vengeance, so neither can we form an

adequate conception of the feeling in Him which we call pleasure. All we can say is, that everything shows us that God is good, and wills that His creatures should be good also in their degree. Goodness in man is accompanied by the appreciation of goodness in other beings, and therefore chiefly in the Divine Being, in whom it is found in all perfection. Therefore, they who appreciate the divine character as they ought are good—are, to a certain extent, such as God would have them be, and so we say that God is pleased with them, and with the praises they offer Him.

The next objection, as stated by Mr. Spencer, is, "that actions instigated by an unselfish sympathy, or by a pure love of rectitude, are intrinsically sinful."

It seems probable that the allusion here is to the thirteenth of the "Articles of Religion," in which it is declared that "works done before justification," or, as further explained, "before the grace of Christ and the inspiration of His Spirit, are not pleasant to God, forasmuch as they spring not of faith in Jesus Christ," and that not being done as God hath willed and commanded them to be done, "we doubt not but they have the nature of sin;" or it may be that Mr. Spencer had in his mind some passages of Scripture to the same effect, as "without faith it is impossible to please Him" (Heb. xi. 6), and "they that are in the flesh cannot please God" (Rom. viii. 8). Now, it cannot be necessary to observe here, except for the information of some outsiders who may read the Transactions of this Society, that the Christian doctrine is this—that owing to the fallen nature which we all inherit from the first human pair, no works that we can do, even when assisted by grace, are free from much that is imperfect and sinful; and that still more is this the case when we are not so assisted. Thus, so far from saying that an act springing from a purely good and unselfish motive is intrinsically sinful, the Christian teaching is that such an act is never done; that, however excellent a deed may appear in the eye of man, in the sight of God it is so mixed up with sinful thoughts and motives that it can only be made acceptable to Him when it is done in faith, and that, for the sake of the atonement made by His Son, whereby what is wrong in it is, as it were, washed out and not had in remembrance before Him. In the Christian system, faith is set forth as the root of all that is good in our character, and as that which makes us to be accounted righteous in God's sight. Thus, works that are done in faith are looked upon, notwithstanding all their imperfections, as good. The goodness in which they are deficient is *imputed* to them. But without faith they are not pleasing to God; and, as this

is owing to their being so mixed up with worldly, selfish, or sinful motives and feelings, works not done in faith are said in the Articles to "have the nature of sin."

Now, Mr. Spencer's way of representing this teaching would make Christianity answerable for the absurd assertion that works intrinsically good are to be looked upon as intrinsically sinful; whereas its true teaching is that *no* human works are intrinsically good, but that such of them as are done in faith have a goodness imputed to them which does not actually belong to them, and so are rendered acceptable to God for the merits of His Son.

We may observe the contrast between the mode of expression adopted in the Article and that made use of by Mr. Spencer. The Article adopts as mild a form of words as could well be thought of. It does not say that the works of which it speaks (works done previously to justification) are actually sinful, much less intrinsically so, but merely that "they have the nature of sin" (Latin, "*peccati rationem habere*"). Mr. Spencer, on the contrary, intensifies the assertion by the addition of the adverb "intrinsically," leaving no stone unturned whereby religion might be made to appear absurd in the eyes of his readers.

The fifth and last of the misrepresentations (I do not say *intentional* ones) comprised in the comprehensive paragraph quoted near the commencement of this paper is, "that conduct is truly good only when it is due to a faith whose openly-professed motive is other-worldliness."

The gist and force of this lies in the rather unusual word, "other-worldliness." As *worldliness*—*i.e.*, a regard to our well-being in this world—is generally looked upon as a low motive to action, the imputation of *other-worldliness* has the appearance of implying that a regard to our well-being in the world to come is a low motive also. Now, no Christian looks upon a regard to our welfare, whether in this world or the next, as the highest motive; but neither is it to be looked upon as a *wrong* one. To excite a prejudice against Christianity, some unbelievers have called it *selfishness*, and pronounced it *immoral*, while they at the same time erroneously represent it as the *only* motive held out by the Christian system to those who believe in it. Thus they would have the world to suppose that the whole of Christianity rests on an immoral foundation. It might seem that a charge so absurd as this might well be left to refute itself. But it is so often urged in the present day, and that by writers whose eminence in other departments than that of religion imparts to them a factitious influence over the minds of the unthinking, that it

is incumbent on the Christian advocate to endeavour to take it to pieces and point out its baselessness and unfairness.

I shall begin, then, by calling attention to the distinction between *selfishness* and *self-love*. They are sometimes used in the same sense, but there is a proper and praiseworthy self-love, to which no blame whatever is to be attached. I should prefer to avoid the use of the word, as being liable to be misunderstood, were it not that it has been adopted by Bishop Butler as a convenient expression for that regard to our own interests and happiness which it is not only our privilege, but our duty, to act upon. He calls it *reasonable* or *cool* self-love, as leading us to consider and reflect upon the best means of ensuring our happiness in the long run. But while he looks upon this reasonable regard to our well-being as a right and proper motive, he is very far from representing it either as the highest, or the only one that ought to influence us. *Benevolence*, or a regard for the good of others, should come in at least in an equal degree ("Thou shalt love thy neighbour *as thyself*"), but both of these principles are subordinate to the moral sense, or conscience, by means of which we judge whether an action is right or wrong, virtuous or vicious, abstracted from its consequences to ourselves or others. This is the moral test to which our actions should be submitted, the principle which, as it were, reigns supreme over all the other principles of our nature. If an action be prompted by benevolence or by that reasonable self-love which I have endeavoured to describe, yet if we see it to be *wrong*, we ought at once to refrain from doing it.

That the Christian religion recognises and proceeds upon the view of morality here set forth, cannot, I think, be reasonably disputed. No doubt it holds out other motives in addition to those above mentioned, but its morality is founded upon eternal principles of rectitude. The Deity Himself acts upon such principles, as already observed, and the precepts given in Scripture show that He would have men to act upon them too.

Bishop Butler designates a reasonable self-love by the name of *prudence*, observing that although subordinate to moral considerations, it is very superior to acting merely on such desires as happen for the moment to be uppermost. It is not properly called *worldliness*; for prudence is a good and useful trait in the human character, whereas worldliness is not looked upon as such. Worldliness as a term of reproach appears to have little meaning, except when used by believers in a future state of retribution. Christianity recognises prudence, or a reasonable regard to one's own interests, as a

duty, when it does not lead to any violation of the principles of rectitude; only it ought not to be confined to the present life, but should provide also for happiness in a life to come. When it is confined to the present life, it is called worldliness, which has thence become a term of reproach, as implying the neglect of a man's highest interests, while unduly caring for his worldly welfare. But when used by an unbeliever in a world to come, there can be no reproach implied in it, because then it simply means a prudent regard to prosperity and comfort in the only world whose existence he acknowledges. If this be a correct description of worldliness, as I venture to think it is, there is really no intelligible meaning in the term "other-worldliness," as implying that a regard to happiness in a future state is a wrong motive. The very persons who use it would be among the last to find fault with a due regard to worldly welfare, and are therefore inconsistent when they insinuate that there is anything faulty in the endeavour to secure lasting happiness in another world. A desire for happiness, in short, is one of the strongest principles implanted in our nature, and nothing can be more absurd than to expect that a religion which has any pretension to exert an influence in the world, should ignore it, or fail to contain a provision for working upon it; subordinate, of course, to the higher motive of acting according to right. This higher motive is that which the enemies of Christianity endeavour to keep out of view.

That selfishness is not to be confounded with a reasonable self-love is obvious. A selfish person is one who thinks *only* of himself, and has no regard to the feelings, wishes, or comforts of others. But a reasonable self-love is quite compatible with a regard to the happiness of others. There may, no doubt, be particular cases in which we are compelled to choose between the good of ourselves and that of our neighbours, but these are comparatively rare: and it is evident that the two *principles* of a desire for our own and for our neighbour's advantage are quite compatible, and in general conduce the one to the other, when all the circumstances are taken into account.

I have said that besides the duty of regulating our actions by the rule of rectitude, Christianity supplies us with motives which, if duly encouraged and cultivated, are of great assistance towards enabling us to act up to what is right. The chief and highest of these additional motives is love to God, with the desire to please Him which such love is calculated to engender. This, as well as that principle of rectitude which lies at the root of all morality, is entirely left out by Mr.

Spencer in the summary of Christianity (as he represents it) which forms, as it were, the text of this paper, so as to make it appear that the only motive to do what is right is a love of self, and this love of self he characterizes by a term of reproach entirely inapplicable and undeserved, namely, other-worldliness.

Upwards of three years ago a controversy appeared in the *Nineteenth Century*, on a subject very much akin to that which is now before us, namely, the question whether atheism destroys the foundations of morality. The advocate of atheism was Miss Bevington, who maintained that morality, so far from suffering any loss, would be rather a gainer by the rejection of a belief in God. Her opponent was Mr. Mallock, the author of *Is Life Worth Living?* and of other works, who maintained, on the other hand, that the rejection of a belief in God necessarily involved the abolition of moral distinctions. To me it appears that both of these gifted writers were mistaken, believing, as I do, in opposition to Miss Bevington, that morality would lose very substantially if a belief in God should perish from the world, and, in opposition to Mr. Mallock, that morality has its root in the nature of things, and need not absolutely perish if a belief in God were rejected. There is, indeed, reason to fear that, practically, great moral laxity would follow the extinction of theism; but I believe that there would still remain the distinction between virtue and vice, although the obligation to follow the one and avoid the other would have a much looser hold on the generality of human beings. When I speak of belief in God, I of course mean the acknowledgment that there is not only a god of *some kind or other* (such, perhaps, as the Persistence of Force), but a Deity conscious, intelligent, powerful, and who has a regard to the conduct of His creatures. Nothing short of this would be a belief that could influence human conduct.

To consider, one by one, the arguments used by Mr. Mallock and Miss Bevington respectively, would both occupy too much time, and would be beyond the scope of this paper. But I may perhaps be permitted to bring forward one or two considerations of a general nature in connexion with the subject.

It seems evident at once that a belief in the God whom Christians acknowledge not only supplies additional *motives* for morality, but also *enlarges its domain*. The motives to which I refer are the love and fear of God, and the enlargement of the domain of morality consists in the addition of a distinct class of duties, comprised under the head of Duty to God.

Neither these duties nor those motives could possibly have place in the morality of an unbeliever. In these respects, therefore, morality must be a loser by the extinction of belief in God, unless indeed it could be shown that duty to God forms no part of it, and that love to God and unwillingness to incur His displeasure have no influence on those who believe in Him. To prove that duty to God forms no part of morality, would require that it should be first proved that there is no God in the believer's sense of the word; and this, I venture to say, never has been, or can be, done. That the love and fear of God have little or no influence on those who acknowledge Him, Miss Bevington attempts to show, but in my mind she entirely fails to do so. She brings forward a number of motives by which the generality of mankind are influenced as much, or more, than they are by religion; and asserts that "a man who is capable of making difficult exertion, restraining a furious passion, or patiently enduring a painful experience, for the sake of a loved and ideal God, or a vague and distant heavenly reward, is equally capable of doing so for the sake of a fellow creature, or for the reward he receives through the exertion of his sympathetic affections." This is quite true, but no argument. The man who can endure pain and restrain a furious passion for the sake of a loved God and a heavenly reward (I omit Miss B.'s disparaging epithets, as not being to the purpose, and put *and* instead of *or* before "a heavenly reward," because Christianity holds out *both* motives) is, according to Christian belief, under the influence of Divine grace, which will certainly prove no hindrance to the exercise of sympathy and benevolence towards his fellow creatures, but rather increase it. Thus religion aids morality by supplying additional motives and good dispositions. I do not say it *creates* morality. I have already stated my belief that morality would exist if there were no religion, though it would stand a much worse chance of being practised. But the question is not between religious motives alone and ordinary motives alone. It is between ordinary motives alone and ordinary motives *plus* religious motives. It is, therefore, only a source of confusion and fallacy to discuss the question whether religious or ordinary motives are the more efficacious. With the generality of mankind, it is too true that the visible affects them more than the invisible—the things seen, which are temporal, more than the things unseen, which are eternal. But our position is, that whether this be so or no, religion is calculated to come to the aid of morality by supplying motives and principles which morality alone does not supply. If morality rests on motives connected with what is visible, religion does not discard these,

but supplies motives derived from the invisible also, and there can be no doubt that these two together are calculated to be of more force than one of them alone.

But Miss Bevington, in dwelling upon the little power which religion has to improve the generality of those who acknowledge the Deity, seems entirely to ignore that class of believers who are what we call *true Christians*. That there are too many who, while intellectually acknowledging God, yet act as though they disbelieved His existence, and seldom or never give Him a thought, is a melancholy fact, and one which the Scriptures fully recognise. But there is also a large class of them—though, it is to be feared, not *so* large—who “set God always before them,” remembering that He is ever present, and that He watches over all that they do or think; loving to do His pleasure, and careful to avoid whatever may be displeasing to Him; recognising His authority, and looking to the reward held out to those who endeavour to follow Christ’s example. These are not free from imperfections; temptations may at times get the better of them, and the hopes and allurements of this life may occasionally obscure their visions of the world to come. But their course, notwithstanding occasional, or even frequent, deviations, is heavenly, and many of them have shown that they are ready to endure pain and imprisonment, yea, to suffer death itself, for the sake of Christ, who suffered and died for them. These would be among the last to say they are perfect, but they trust that their imperfections and sins will be washed away in the blood of the atonement. This is a class of persons which seems to be entirely left out of sight by those who say that religion is no help to morality. As long as there are true Christians in the world, so long will it be evident that such a position is false. Let unbelievers say what they will, such as these are “the salt of the earth,” and if they were not living examples of what religion can do in promoting love to our neighbours, which lies at the root of practical morality, it seems quite possible that belief in religion might become a thing of the past.

I would just notice one other statement of Miss Bevington’s, in the articles contributed by her to the *Nineteenth Century*. It is this: that the requisites to an action being virtuous are:—1. That it should be useful; and 2. That it should be difficult. I think it is easy to show that these two characteristics do not constitute the ground of virtue. We may presume that Miss Bevington means to say that the action, in order to be virtuous, should be done with the *intention* that it should be useful; and I think it may also be presumed that by “useful,” she does not mean useful to some, while it causes

greater injury, perhaps, to others, but that on a balance being struck, the good which the action is calculated to produce should exceed the injury; and, therefore, that on the whole it may be looked upon as useful. This interpretation of her meaning appears to be warranted by other passages in her essay, in which she alludes to motives and to the general good, though her not having included the motive in this, the only one (if I do not mistake) in which a formal statement of that in which virtue consists is attempted, cannot but be considered a great omission. The great consideration is the motive. If an action ever so difficult, and ever so useful to the majority of human beings, be done from malice, for the purpose of injuring even one person, that action, so far from being a virtuous one, will be highly wicked. This I am sure Miss Bevington would admit. What we have to consider, therefore, is whether the fact of an action being difficult, and done *for the purpose* of causing more good than harm, necessarily makes it a virtuous one.

In the first place, it does not clearly appear that difficulty is an essential ingredient in a virtuous action at all. Difficulty requires self-denial, and self-denial is virtuous only when it is undergone for the sake of doing a virtuous action. It may be undergone, however, for the sake of doing a very vicious action, and then it is far from being virtuous. Self-denial, therefore, is not in itself a virtue, nor could it make an action virtuous that was not so independently of it. If I pay a just debt, I am doing a right thing, whether I had the money ready wherewith to discharge it, or whether I have been compelled to work hard in order to obtain it. I admit that the endurance of pain and labour may be a certain test of the *strength* of the virtuous principle in my character. It is possible that a man who pays his debt without any trouble might be disposed to repudiate it if he had a difficulty in procuring the means. But the payment is not the less an honest act on that account. That which tests the strength of a principle is no more the essence of that principle than a spirit-gauge is the essence of the spirit of whose strength it is an index. We must here distinguish between a particular act of honesty and the principle of honesty in the human character. An act done with a view to give a man what belongs to him is an honest act, independent of the question whether the doer of it would have the principle of honesty sufficiently strong to enable him to do it if the difficulty were greater. Thus it cannot be said that one honest act is more honest than another, while yet it may be said that one *man* is more honest than another, because in the one case we are speaking of what a

man does, and in the other of the man himself. Again, if difficulty were essential to a virtuous act, the vicious character of an act would also depend on whether it is easy or difficult. And I do not think any one would maintain that the guilt attached to the perpetration of a murder would not be guilt if the question whether it was easy or difficult were decided either way. If it be done under difficulties, it only shows the determination of the murderer to be the stronger, and if it be done with ease, it is equally a wicked deed. It seems to me, therefore, that we have now disposed of the question whether difficulty is essential to the moral character of an action, and have fairly decided it in the negative.

There remains still the question whether utility makes an action to be virtuous. Here, again, we must take in the consideration of motive, as the most useful action that ever was done must be morally bad if the motive that induced it be bad. The question, then, should be put in this form. Does the intention of doing good, or—if its results be of a mixed character—of doing more good than harm, make an action to be morally good?

As this question has long exercised the deliberations of moralists, of whom there are two schools, chiefly represented by Bishop Butler on the one hand and Archdeacon Paley on the other, it seems to me that it would be a superfluous task to discuss it here. My only reason for not entirely leaving the matter in the hands of those two eminent writers is, that Butler, in opposing the doctrine that utility is the foundation of morality, assumed a Creator, and thence inferred the reality of moral distinctions, on the principle that God has so constituted us as to have a perception of those distinctions, which we cannot suppose He would have done if they did not exist. As this argument could not have weight with those who deny a Creator, and as our present business is with these, a few words seem necessary to make our subject complete.

It cannot, I think, be denied that there are certain things which all human beings have a *right* to. Every one, for example, has a right to his life, as is acknowledged in the laws of civilised countries, which make homicide in self-defence to be justifiable. Every one also has a right to his limbs, as is acknowledged in the laws against mutilation; and every one has a right to his personal liberty. These rights may be called natural, as without the recognition of them all social relations must be destroyed, and man is by nature sociable. It is true that rights may, under certain circumstances, be forfeited, as when a murderer justly suffers the punishment of death, with the loss of his liberty for the time

he is allowed to live. But such cases are exceptional, and (as is often the case) they prove the rule, because society must punish outrages which tend to its own destruction, and it is on the existence of society that the rights just mentioned are founded. I am not forgetting here that Christians have a still better foundation than society for the acknowledgment of these rights, but it must be kept in mind that from the nature of the case I am compelled to take ground which unbelievers must, or ought to, acknowledge; and as these only acknowledge what is natural, and man is naturally sociable, they must hold that rights founded on society are natural.

Now, the very idea of a man's having a right to anything, involves moral distinctions. For, if A has a right, B does wrong if he endeavours to deprive him of it. To do so would be to do him an *injury*—an injustice.* It is something more than merely inflicting pain upon him, which is cruelty. The idea of its being an offence against right is also included. On this account I look upon moral distinctions as having a foundation in nature—in human nature at any rate. And it is because we have no right to injure our neighbour that the precepts of the Decalogue—those of them, at least, which inculcate our duty to our neighbour—were given. The object of those precepts was to enforce morality, not to supersede it; and therefore it is that I look upon Mr. Mallock as going much too far in his laudable zeal for religion when he says that without it there would cease to be any distinction between virtue and vice, as such. I so far concur with him, however, as to believe that men would have much less regard to moral distinctions even than they have now, little as, alas! they now regard them; and, therefore, that with the extinction of religion, morality would receive a most severe blow, and perhaps be in danger of perishing altogether.

I have mentioned natural rights, such as the right to the possession of life and limb. There are, however, other rights, founded on the rules and customs of society, which may be different in different countries, and which may be looked upon as natural in a secondary sense, because society itself has its foundation in nature—in human nature especially, but we see the germs of it in the lower animals also. In civilised society these rules and customs include the laws of the country, and as life and limb are possessions to which nature itself gives every one a right, there are other possessions, external to the individual, the right to which is given by the law of the land.

* From Latin *in*, signifying *not*, and *ius*, right.

Hence the idea of *ownership*. Hence also the general consent of mankind that it is a wicked thing to deprive any one, either by force or subtlety, of what is his own.

Many are the speculations suggested by these considerations, but I must forbear to enter upon them. My chief aim has been to make it appear that the Christian religion rests upon a moral foundation; that, while appealing to our desire for happiness,—that desire which is ingrained in the constitution of man,—it holds out no selfish motives, such as its enemies are so anxious to accuse it of, but proposes to us the noblest aims, and calls forth the highest principles of our nature; and that the God whom Christians acknowledge and adore is falsely accused when He is represented as “a man-like artificer,” as delighting in adulation, or as indulging feelings of revenge. If I have in any degree, however small, contributed to bring out and disseminate these results, my object has been gained.

MR. ALEXANDER MCARTHUR, M.P., moved,—“That our best thanks be presented to the Lord Bishop of Derry for reading the late Lord O’Neill’s Address, and to those who have contributed papers during the session.” We deeply regret the loss of our excellent friend Lord O’Neill, and we must all be much obliged to the right reverend gentleman for having read his paper. We have also to express our thanks to those who have taken the trouble to prepare and read papers at the meetings of the Institute during the past year. Many of these papers have been very valuable, and those who have heard them read, or who have themselves read them afterwards, must, I am sure, have derived much benefit, and will be desirous of returning their best thanks to the authors.

The Bishop of BALLARAT.—I have very great pleasure in seconding the resolution. I hope I shall be excused from making a speech, but I will offer one remark. It struck me, when the Bishop of Derry was reading the very luminous paper of the late Lord O’Neill, that it forcibly illustrated the truth, that we really ought not to be frightened at the formidable words and expressions which some Freethinkers make use of; because, when you come to look into them, you find there is really nothing whatever in them. They remind me of the passage in Shakespeare’s “Second Part of Henry IV.,” where the hostess, after listening to one of Pistol’s magniloquent but inane utterances, exclaims, “By my troth, captain, these are very bitter words.” And so they were to her, no doubt; but they meant absolutely nothing. (Laughter.) Some of the epithets applied to Christianity sound very alarming indeed; but, when one comes to examine them, the dismay and horror which are intended to be inspired altogether vanish. I second with great pleasure the resolution which has been proposed by Mr. M’Arthur, and I very much congratulate myself, on the eve of returning to Australia,

at having been present at this meeting, and having heard so valuable and interesting a paper as that of the late Lord O'Neill.

The motion was unanimously agreed to.

The Bishop of DERRY: Perhaps I may be allowed to say just one word, I am sure it will be a great consolation to Lady O'Neill to hear of the favour with which her husband's most excellent paper has been received. The Bishop of Ballarat, in the remarks he made, spoke of things as they ought to be, and not, I am afraid, as they are. I am afraid that long words do make a great impression, especially on the minds of young men. Archbishop Whateley was in the habit of illustrating this by telling some of his friends a story about a lady to whom he gave some advice as to medicine for her children. When he told her to give them some tartar emetic she was horrified; but when he said she should give them a little antimonial wine she replied that she would be very glad to do so. With reference to the paper itself, a nickname is very often a sort of condensed epigram. The very word "carpenter" throws ridicule on the larger idea of the creation, and the word "adulation" makes praise odious. I have to thank the meeting very much for the attention which they have bestowed upon the paper. Just to recall for one moment what Lord O'Neill was, I must say that he was at once a man of extreme modesty and a man of very singular gifts. If not a heaven-born mathematician, he was exceedingly able in mastering mathematical problems. His musical gifts were something marvellous. He was a learned divine and ripe scholar, and up to the last days of his life one of his greatest pleasures was to walk out with a friend and talk over with him a chapter of the Greek Testament. Above all and beyond all, his soul was based on a rock, and that rock was Christ.

Mr. D. HOWARD (Vice-Pres. Inst. Chemistry).—It is not without deep feeling that I rise to propose a vote of condolence to Lady O'Neill. The beautifully lucid paper to which we have just listened comes to us with the deep solemnity of a voice from beyond the tomb. These are almost the last words of one who had devoted all the exceptionally high powers of his mind to the highest uses, and is now gone to join the heavenly choir, where the music he loved so well here shall find its highest expression; to that heaven where all the deep problems with which he dealt here find their true solution, to live for ever in the beatific vision of Him who is the Truth.

The thought of this is specially fitting for us as members of an Institute which seeks to harmonise all our intellectual powers with the life to come and to teach us so to pass our lives in things intellectual and philosophical that finally we lose not things eternal.

Mr. HORMUZD RASSAM.—Permit me to second this vote.

Bishop RYAN, D.D.—I have great pleasure in proposing that the thanks of this meeting be presented to Sir Henry Barkly, our chairman upon the present occasion. During some eventful years of my life I often had the pleasure of seeing Sir Henry Barkly in the chair at meetings in the distant land of Mauritius, where he was always ready to encourage scientific knowledge. I was very much struck with one of the speeches we have heard, and

in which we were told how we should proceed in our investigations so as to lead up from one question to another. That was Voltaire's method. Voltaire wanted to be an Atheist, and he could not. In such an assembly as this I need not scruple to give his own words :—"Ce monde m'embarrasse et je ne puis songer que cet horloge existe, et n'a pas d'horloger. "This world troubles me. I cannot imagine how there can be this beautiful world, and yet none to construct it." I believe that real, honest investigation must always lead to points like this. A remark has been made about works of the Society being addressed to those outside. I remember an episode that occurred in Gosport on one occasion. There was a man there named S—— who was in great trouble. I said to him: "S——, what is the matter with you?" He replied: "I have a set of fellows about me who are Atheists and Infidels, and I don't know what. They are plaguing me morning, noon, and night." I said, "take this book to them." It was Bishop Watson's answer to Tom Paine. Those who remember Paine's time know that his book was doing immense harm, and the Christian Knowledge Society brought out a cheap edition of Bishop Watson's reply. After S—— had taken that book to his friends he said it fell like a bombshell among them. They who know the book know that Bishop Watson argues the whole matter learnedly and simply, so that the most ignorant and the most intelligent and well-informed can find something in it that will profit. I think that this Society should endeavour to bring out books of this kind, and see that they are clearly and simply written, and are circulated far and wide. (Hear, hear.) It does not do to tell the masses they must not read the works of our opponents, for they will read them. I am a good deal among the manufacturing population in Yorkshire. An artizan in Bradford came up to me in the street the other day and said: "Bishop Ryan, I am very much troubled in mind." I asked him why? He replied: "I have been reading Professor Tyndall's address at Belfast." I asked him how often he had read it right through? "Once," he answered. Then I told him that I had read it three times and suggested that he should read it again. The man did so, and his trouble vanished. The fact is, that we must show boldness, especially in this matter. With regard to other books, I have seen those containing gross and violent attacks on Christianity, and have kept them in my study, saying to those who came to me about them: "There are the books, read them if you like; but read also the answers to them." (Hear.) There was one remark made by the Bishop of Derry which was exactly what had been passing through my mind: It was with regard to Lord O'Neill's statement being deep and solid, and coming from the heart. With regard to Herbert Spencer, I think his accusing Christians of ascribing a love of adulation to God, only shows what straits men are in for an argument when they are driven to the use of such words. Let us all remember that whenever there is anything very startling we ought to examine it, and it may be that, as in this Institute, we shall find that in the discussion of infidel objections we come to the blessed truth of the

Word of God, by which we can carry the mind to that heaven into which His servants have entered.

Sir THOMAS GLADSTONE, Bart.—I have been unexpectedly called upon to discharge a very pleasing duty. Having been an intimate friend of the late Lord O'Neill, I am able to express my entire participation in every word that has fallen from the right rev. prelates who have just addressed your Not one word they have said was undeserved by the deceased nobleman. It is not my intention, however, to intrude on you beyond making one remark with regard to the very able speech we have heard from the right hon. gentleman on my left, and in reference to the suggestion he has offered to this society, that it should produce such a work as he has so ably sketched out. I would venture to express a hope that he may himself put his shoulder to the wheel, and try what he can do in carrying out such a work. I now beg to second the resolution, which has been so ably proposed, of a vote of thanks to our Chairman. (Applause.)

The vote of thanks having been carried by acclamation,

Sir HENRY BARKLY said: I thank you for the compliment you have paid me, and which I have done so little to deserve. I have long taken great interest in the work of this Society, and it has been a privilege on my part to preside at so large and influential a meeting as this, and to have heard the late Lord O'Neill's paper. I believe the Society is doing a great work, and that it deserves support in its efforts to show that science, when properly cultivated, is not antagonistic to religious truth, but that they are really one and the same. I will not detain you longer, and can only repeat my thanks for the compliment paid to me.

The proceedings having terminated, the members and their friends adjourned to the Museum, where refreshments were served.

ORDINARY MEETING, MAY 7, 1883.

H. CADMAN JONES, ESQ., IN THE CHAIR.

The minutes of the last meeting were read and confirmed, and the following elections took place :—

ASSOCIATES :—The Right Rev. J. W. Beckwith, D.D., Bishop of Georgia, United States ; the Rev. E. F. Burr, D.D., United States ; Rev. W. A. Candler, United States ; Rev. E. A. Hildreth, United States ; G. Watson James, Esq., United States ; J. P. Maclean, Esq., United States ; Rev. T. M. B. Paterson, Scotland ; Rev. Professor E. B. Thwing, United States ; Prof. H. Shaler Williams, United States ; Rev. H. Woodward, Liverpool ; Rev. W. F. White, Stonehouse ; Miss Beales, London.

Also the presentation of the following works for the library :—

“ Proceedings of American Geographical Society.” *From the same.*
 “ American Antiquarian.” *From the Editor.*
 “ Mound Builders,” by J. P. Maclean. *From the same.*
 Two Works from the library of the late W. H. Ince, Esq. *From Mrs. Ince.*

The following Paper was then read by the Author :—

Dr. J. L. PORTER.—Some years ago Professor Tyndall delivered the opening address at a meeting of the British Association, held at Belfast, and it produced a great and serious effect, especially on the working classes of Belfast, and also on the public generally throughout the north of Ireland. I had an opportunity of meeting with a very large number of students in a college containing nearly six hundred, and I found that fully one-third of them had been more or less affected by the address in question. This will explain, to some extent, the origin of the paper I am now about to read.

*THE TEACHING OF SCIENCE NOT OPPOSED TO
 THE FUNDAMENTAL TRUTHS OF REVELATION.*

—By the Rev. J. L. PORTER, D.D., LL.D., President of Queen’s College, Belfast.

THE controversy between Science and Revelation will probably go on indefinitely. Science is advancing with rapid strides, new facts are being discovered, new truths developed, and new theories in still greater numbers are being propounded. Biblical criticism also is not stationary. Sounder canons of exegesis are now adopted ; while researches among the monuments and records of Egypt, Assyria, Babylonia, and Palestine, are year after year shedding fresh light upon the languages, history, literature, and teachings of the

Bible. It is not strange, therefore, that new subjects of controversy should spring up, and new difficulties meet us from time to time, as we attempt a critical survey of the border-land of Science and Revelation.

After a somewhat minute examination of the whole question I have been led to the conclusion that the alleged differences between Science and Revelation are only apparent. They originate mainly, on the one hand, from confounding the theories of scientific men with the demonstrated facts of Science itself; and, on the other hand, from a misunderstanding of the real teachings of the Bible. There is what may be called a traditional interpretation of certain portions of the early books of the Bible, which does not agree with the results of modern criticism; and we must be careful, in these days, to distinguish what is merely traditional from what is now known to be the real sense. I feel myself fully justified in affirming that there is no real discrepancy between scientific facts logically proved, and Bible teachings rightly interpreted.

Much evil has arisen from parading the crude theories of scientific men before the world, as if they were established facts. We have, for example, the atomic theory of the old philosophers, Leucippus, Democritus, and Lucretius, which proposed to trace the origin of the universe—the stars in their wondrous orbits, the delicate organisms of the vegetable world in all their variety and surpassing beauty, animals of every species, man himself with his genius, his culture, his aspirations after immortality,—to trace all to a fortuitous concourse of material atoms; thus setting aside, by a stroke of imagination, the idea of Creation and a Creator. It is right to observe that physical Science in propounding such a theory as this virtually contradicts itself, for its own principles forbid it to entertain an inquiry into the origination of things. It is concerned with the observation of material objects, and its legitimate investigations continually suggest the existence of some unseen power dominating matter, and of some supernatural beginning of the universe of nature as it now exists.

Then, again, we have theories of the origin of life, developed with so much skill and ingenuity by Huxley and others, in their exhaustive researches into the mysteries of protoplasm—researches which, unfortunately, fail them just at the point they wish to establish, namely, the evolution of life from dead matter. Their own researches show, as far as they go, that pure materialism has no sound philosophical basis. We have also the theory of the origin of species from natural selection and the survival of the fittest, propounded by Darwin, and illustrated by a long series of observations and experiments,

which have justly gained for their illustrious author a first place among naturalists. But Darwin himself never said that his arguments amounted to absolute proof. Then we have the most wonderful theory of all, propounded in glowing language by Tyndall, that "not alone the mechanism of the human body, but that of the human mind itself—emotion, intellect, will, and all their phenomena—were once latent in a fiery cloud." We need not wonder that, after enunciating such a dogma to the assembled scientific magnates of the British Association, he should have intimated that to man there is, or may be, no future, except "to melt away into the infinite azure." * To this may be attached another theory of a kindred type, that there is nothing in this world of ours but matter, force, and necessity; and that consequently, as Huxley has put it, "the thoughts to which I am now giving utterance, and your thoughts regarding them, are the expression of molecular changes in that matter of life which is the source of our other vital phenomena." † All these, it will be observed, are *theories*. No scientific man of recognised position will affirm of any one of them that it is an established fact. It is useless, therefore, as I shall show more fully in the sequel, to argue that the truths of Revelation are, or can be, affected by them. It is with the facts of Science alone that we have to deal.

We shall now consider for a moment what are the teachings of the Bible upon those great problems which lie on the border-land of Science. There is, I venture to think, no little misapprehension prevailing with regard to them. The Bible is not a systematic treatise upon theology, much less is it a text-book of Science. Its teaching was progressive, beginning with simple elements and gradually developing truths more and more clear, and more and more profound, during a long succession of ages. God revealed Himself in His nature and providential dealings at such times and in such ways as man required the revelation. Another marked characteristic of Divine Revelation was, that its language was largely figurative. The fundamental truths of salvation were at first chiefly embodied in types and symbols and metaphorical language. The great doctrines were not as a rule laid down in logical propositions, but were shadowed forth in symbolic acts, the real significance of which could only be ascertained by spiritual illumination. These must all be interpreted, not in their literal, but in their symbolic or figurative sense.

So, in like manner, we are warranted in interpreting certain

* Address at Meeting of British Association in Belfast. — *Original edition.*

† *Lay Sermons*, p. 138.

portions of the language of the Bible which refer to and describe the phenomena of nature. Its teaching upon those subjects was also to some extent figurative and symbolical; and it is important for our present purpose that we carefully extract from metaphor and symbol wherever employed those sublime truths regarding the being and nature of God, and the origin of the universe, which are revealed in the Bible. It is not difficult to do so. We have the fundamental doctrine of the existence, unity, and personality of God, standing out prominently in every part of Holy Scripture:—"Hear, O Israel; the Lord our God is one Lord" (Deut. vi. 4). We have the doctrine of Creation enunciated in the opening words of Genesis, and repeated in various forms, and under various metaphors, by successive writers, until at length the Author of the Epistle to the Hebrews, with philosophic acumen, distinguishes the teaching of the Spirit of Revelation from the theories of Greek scientists:—"By faith we understand that the worlds have been framed by the word of God; so that what is seen hath not been made out of things which do appear" (Heb. xi. 3). It has been rightly said that the first chapter of Genesis furnishes the only satisfactory standpoint from which to take a view of the constitution of the world, and of the relation between the world and man and God. The passage I have just quoted gives a logical exposition of the narrative of Creation in Genesis. The time of Creation is not indicated, and we have no data to fix it. It is simply said: "In the beginning, God created the heaven and the earth." When that beginning was we know not. It may have been millions of years before the story of our race began. The fact of the creation of the heaven and the earth at some undefined past epoch is revealed; and then this revelation is followed by another—that from some cause not explained, the earth having been reduced to a state of chaos, God put forth once again creative power, re-formed and probably re-peopled the world. The period of this new creative work is not fixed, nor is its duration. The language of the narrative in the first chapter of Genesis, as it seems to me, indicates progress—not evolution, however,—progress from the lower to the higher forms of life, and may embrace those countless ages during which the wonderful strata of the earth's crust were formed. To attempt a literal interpretation of the seven days' work is, in my opinion, to do violence to the analogy of Scripture exegesis, and to the genius of the inspired Word. The sacred writer simply indicates successive stages in the creative work, commencing with that forth-putting of Divine power—*force*, shall I call it?—which initiated motion in the universe of inert matter, and terminating with man, of

whom it is said emphatically, "God created man in His own image," making him thus essentially different from all His other creatures—the possessor of mind, moral feeling, conscious immortality. The stages of this mysterious creative development are dimly indicated, each the direct product of Divine agency. But the duration of each stage or period is shrouded in darkness. We know not what period the Creation "day" may represent; we know not what isolated, or progressive and long-continued action each day's work may indicate. One thing, however, is clear; that LIFE, in all its forms—vegetable, animal, human—is ascribed by the sacred writer to the direct *fiat* of God. Vegetables and animals did not derive, or receive, their being—were not evolved—from matter, but were formed by the creative word of God operating upon matter. Matter was the material basis: the word of God was the creative energy.

Then again, it is important to observe how, according to the inspired writer, God originated each form of life in its own place, in its own sphere:—"And God said, Let the earth bring forth vegetation;" "And God said, Let the waters bring forth the moving creature that hath life. And God created every living creature that moveth, with which the waters abound;" "God made the beast of the land after his kind;" "God created man in His image, and breathed into his nostrils the breath of life." It is a sublime record. The life, the soul of man, was a direct emanation from the eternal life of God. His intellect, his will, his conscience, were moulded after the Divine original.

Such then is the teaching of the Bible. Is the teaching of Science different? Do the established facts of Science contradict any of the grand truths here set forth? These are the questions I now propose briefly to discuss. I confess to you freely that early training, that Christian intercourse of long standing, that cherished ecclesiastical sympathy, combine to induce me to answer each of these questions in the negative. But, to borrow the impressive language of Professor Tyndall, used in another connexion:—"There is in the true man a wish stronger than the wish to have his beliefs upheld; namely, the wish to have them true. And this stronger wish causes him to reject the most plausible support if he has reason to suspect that it is vitiated by error."* Laying aside all prejudice, all preconceived opinion, all mere feeling or sentiment, I shall endeavour to investigate and decide in a purely philosophic spirit.

* *Address at Belfast.*

It is only right to observe at the outset, that it is not always easy to define the exact border-line of any science, or department of knowledge. Not unfrequently departments of Science, in themselves distinct, have some things in common. The fields of investigation overlap; but the method of investigation in each department is different. The scientist examines natural objects through the medium of his senses; his mind, under the guidance of its intuitions, interprets the nature and bearing of the observations, compares and classifies them. Then he frames generalisations to which he gives the name of laws; and these, when thoroughly tested and proved, are accepted as facts of science. In the department of psychology and natural theology a different method is followed, because the subjects with which they are concerned are, for the most part, presented directly to the mind, and not to the senses or the logical faculty. They can only be grasped and comprehended in their entirety by abstract thought and reflection—quickened and guided in the case of theology by Divine illumination. It consequently happens, not unfrequently, that minds trained to scientific research alone, and habitually occupied with the severe and exact demonstrations of geometry, or with the palpable forms of matter, encounter an almost insuperable difficulty when they attempt to enter the field of abstract thought. They cannot place the problems of metaphysics and theology under the microscope, nor can they apply to them the test of pure mathematical demonstration, and, therefore, they cannot always comprehend, and will not receive them. And yet, to those who are intellectually fitted for this higher department of knowledge, and thoroughly trained in it, the sublime truths which it embraces become as definite and as convincing as the truths of physical science. It is a well-known fact that "each man is strong in that he is trained in, weak in other regions—so much so, that often the objects there seem to him non-existent."*

All this shows the necessity of confining Science and Theology each to its own proper sphere. Scientific men often complain, even in this age and this country of freedom, that theologians are despots, that they would fetter free thought, that they would rivet the shackles of ecclesiastical authority upon the mind of each daring inquirer. I would, therefore, take the liberty of warning earnest Christians not to offer, or even give the appearance of offering, any opposition to the fullest scientific investigation. Let us look upon the sphere of Science

* Shairp, *Culture and Religion*, p. 80.

as a friendly territory,—a province of God's universe where His footprints can be traced, and where His wisdom can be discerned. But then, on the other hand, is it not clear that scientific men are at this moment committing the very error with which they are charging theologians? They are attempting to invade the province of Revelation, and to sweep away its most sublime doctrines by theories and speculations. As a theologian I have no wish to fetter true Science. I accord to it the utmost liberty. In its own field it does noble service to my cause, enabling me to reason with logical precision, from clear manifestations of design in every department of nature, to the existence of an Omnipotent Designer. But when Science leaves its legitimate field to assail revealed truth—when the scientist, having reached the limit of experimental evidence, refuses to stop, and attempts to prolong the vision into the unknown, so as to discern in matter the promise and potency of all terrestrial life;* then, as a theologian, and in the name of Science itself, I place an arrest upon him, as he would do upon me; and if he will not desist, I shall consider it my duty to warn the public that his so-called conclusions, however skilfully framed and eloquently expressed, are no more worthy of belief than the splendid creations of a poet's fancy. And in adopting such a course I have the high authority of Tyndall himself, who says:—"The profoundest minds know that nature's ways are not at all times their ways, and that the brightest flashes in the world of thought are incomplete until they have been proved to have their counterparts in the world of fact."†

Still another point I feel bound to notice. Scientists complain that their conclusions are criticised and called in question by many who acknowledge that they have never conducted a single investigation, physiological, chemical, or anatomical; and they denounce in no measured terms such presumptuous criticisms. The complaint is plausible, but not very logical. I shall show this in a sentence or two. The scientist by his researches establishes certain facts. He explains those facts in intelligible language. Then he proceeds to deduce from them inferences with regard, say, to the origin of life, to the origin of species, or to the origin of mind. Now, I take his facts as established and explained by himself; and I maintain that I am as competent to test the accuracy of the conclusions he professes to deduce from them as he is. It is not practical science that is here required, it is logic, and scientists will not surely lay claim to a monopoly of this faculty. So then, in prosecuting my critical examination, I shall not attempt to

* Tyndall, *Address*.

† *Fragments of Science*, p. 111.

enter the domain of the student of pure physical science. I shall accept his own observations and demonstrations—not his theories, nor his speculations, nor the results of the prolongation of his mental vision into the unknown—and I shall place them side by side with the conclusions he has deduced from them, and submit the process to a searching logical analysis. Surely this is not presumption. If it be, then Herbert Spencer is liable to the charge of presumption, for this is the plan he has pursued in his profound treatise on biology. He thus writes :—
 “ We confess that nearly all we know of this department of biology has been learnt from his (Owen’s) lectures and writings. We pretend to no independent investigations, but merely to such knowledge of the phenomena as he has furnished us with. Our position, then, is such that had Professor Owen simply enunciated his generalisations, we should have accepted them on his authority. But he has brought forward evidence to prove them. By so doing he has tacitly appealed to the judgment of his readers and hearers—has practically said, ‘Here are the facts: do they not warrant these conclusions?’ And all we propose to do, is to consider whether the conclusions are warranted by the facts brought forward.”

I shall now endeavour to examine critically, according to the plan adopted by Herbert Spencer, the attempts made by scientists to solve certain great problems, and to solve them in a manner directly opposed to the teaching of the Bible. The problems are as follow :—

I. The Origin of Matter and of the Existing Material Universe.

II. The Origin of Life.

III. The Origin of Species.

IV. The Origin of Mind; and connected therewith, the Conceptions of a God and of a Future State.

I. THE ORIGIN OF MATTER AND THE EXISTING MATERIAL UNIVERSE.

I. The teachings of scientists on matter and the existing material universe are not uniform. Nearly every scientific man has a theory of his own; and it so happens that the several theories are inconsistent with each other, and in some cases mutually destructive. Democritus, a Greek sage, who lived about B.C. 400, propounded a theory of the universe, which he seems to have derived from Leucippus. It was substantially adopted by the Latin poet Lucretius, whose object was thereby to banish for ever from the mind of man all idea of a creating and superintending Deity. Its latest expounder is Professor

Tyndall; and its leading principles are as follow:—Matter is eternal; it has two characteristics—1. Quantitative relations, which are original; 2. Qualitative, which are secondary and derived. According to this theory creation is a myth, and the distinction between matter and mind is abolished. Matter consists ultimately of *atoms*, which were originally distributed through empty space; they are homogeneous in quality, but heterogeneous in form; motion is the eternal and necessary result of the original variety of atoms in the vacuum; the atoms are impenetrable, and therefore offer resistance to one another; all existing forms and beings in the universe,—the stars, the planets, the earth, plants, animals, mind itself,—are evolved from these atoms; the process of evolution began by the atoms striking together, and the lateral motions and whirlings thus produced were the beginnings of worlds; the varieties of things depend on the varieties of their constituent atoms; the first cause of all existence is necessity,—that is, the necessary succession of cause and effect. To this succession the name *chance* is given, as opposed to the term *mind* (*νοῦς*) as employed by Anaxagoras. The soul consists of fine, smooth, round atoms, like those of fire. They interpenetrate the whole body, and in their motions the phenomena of life arise. The atoms of Democritus are individually without sensation; they combine in obedience to mechanical laws; and not only organic forms, but the phenomena of sensation and thought are the result of their combination. Empedocles introduced the notion of love and hate among the atoms to account for their combination and separation. Lucretius rejected the notion of any interfering Deity, and affirmed that the interaction of the atoms throughout infinite time, rendered all manner of combinations possible; of these the fit ones persisted, while the unfit disappeared. From all eternity they have been driven together, and after trying motions and unions of every kind, they fell at length into the arrangements out of which the present system of things has been formed. So that we owe the present universe of matter and mind to the self-evolved action of a fortuitous concourse of atoms.*

And this most fanciful theory, or rather aggregate of theories, is put forward in the name of Science! What are its proofs? We cannot, as I have stated above, admit a mere theory as possessing any authority in our present investigation. What is the proof that matter is eternal? There is none; and from the very nature of the thing, there can be no scientific

* Tyndall, *Address*, pp. 1-9; Lucretius, *De Rerum Natura*, i.

proof. All that Science can prove is, that matter has existed so long as man has existed to observe it. To affirm that it is eternal is an assumption, which has no more weight than the counter affirmation that it is not eternal. Herbert Spencer rightly says, that the eternity or self-existence of matter is unthinkable; and he argues that "the assertion that the universe is self-existent does not really carry us a step beyond the cognition of its present existence; and so leaves us with a mere re-statement of the mystery."* And besides, while Science is unable to advance one step towards proof of the eternity of matter, some of the most eminent scientific men of the age affirm that atomism itself affords strong presumptive evidence of Creation and a Creator. Clerk Maxwell, at the meeting of the British Association in 1873, said:—"We are unable to ascribe either the existence of the molecules (atoms) or any of their properties to the operation of any of the causes which we call natural." On the contrary, the exact equality of each molecule to all others of the same kind gives it, as Sir John Herschel affirmed, "the essential character of a manufactured article." And Herbert Spencer has laid down an abstract principle which points in the same direction:—"To conceive self-creation is to conceive potential existence passing into actual existence by some inherent necessity, which we cannot do. We cannot form any idea of a potential existence of the universe, as distinguished from its actual existence. . . We have no state of consciousness answering to the words—an inherent necessity by which potential existence became actual existence. To render them into thought, existence, having for an indefinite period remained in one form, must be conceived as passing without any external or additional impulse into another form; and this involves the idea of a change without a cause; a thing of which no idea is possible."† Tyndall himself admits a principle which saps the foundation of this atomic theory:—"In the course of scientific investigation," he says, "we make continual incursions from a physical world where we observe facts, into a super or sub-physical world, where the facts elude all observation, and we are thrown back upon the picturing power of the mind. By the agreement or disagreement of our picture with subsequent observation it must stand or fall."‡ Just so; it is observed fact alone which substantiates the truth of a theory in Science, and when observation utterly fails, as it does in this phase of the atomic

* *First Principles*, p. 32.

† *Ibid.*, p. 32.

‡ *Crystalline and Molecular Forces*, p. 9.

theory, the theory vanishes "like the baseless fabric of a vision." The most careful study of matter, whether we regard it in its supposed atomic elements, or in its grand combinations governed by wondrous laws, or in its beautiful and complex organisms, leads inevitably to the conclusion that there is a Power and a Wisdom infinite above and beyond it. "We cannot," says Herbert Spencer, "think at all about the impressions which the external world produces on us without thinking of them as caused, and we cannot carry out an inquiry concerning their causation without inevitably committing ourselves to the hypothesis of a First Cause."* So much, then, for the teaching of Science as to the eternity of matter, and the formation of the material universe.

But we return for a moment to this atomic theory. Democritus, following Leucippus, held that atoms were originally scattered throughout empty space, and that they combined in obedience to mechanical laws. Empedocles, a Sicilian philosopher of the same age, could not believe this possible, and suggested that the atoms possessed original and elementary powers or sensations of love and hate, and that influenced by these they combined or separated. Lucretius conceived the atoms falling eternally through space, and their interaction throughout infinite time forming the worlds. It was a truly poetic conception, worthy of its author. Clerk Maxwell supposed the atoms to have been created, or, as Herschel says, "manufactured articles," and endowed with certain powers, under the guidance of which they gradually evolved those complex forms now presented to the eye of the student of nature. Tyndall, again, though he speaks with considerable hesitation, as if groping his way through the cloud-land of hypothesis, suggests that the atoms may possess some inherent energy or life; and hence he professes to discern in "molecular force the agency by which both plants and animals are built up,"† though he does not tell us whence this molecular force has come; indeed, he intimates that it is "wholly ultra-experiential."

I do not profess to reconcile these discordant theories, I leave the task to scientists; and I venture to think they will find it no easy one. My sole object is to submit them, one and all, to the test of scientific proof. As to atoms themselves, they have never been absolutely discovered. Scientists have searched for them, the highest powers of the microscope, and

* *First Principles*, p. 37.

† *Address*, p. 52.

the utmost skill of the chemist, have been tried in vain. Tyndall tells us that "Loschmidt, Stoney, and Sir William Thomson have sought to determine the sizes of the atoms, or rather to fix the limits between which their sizes lie;"* but he tacitly admits that they failed. Their very existence, then, is a hypothesis,—a hypothesis, too, which has no clear logical connexion with any observed fact. The idea of an atom is, as it seems to me, inconceivable, or, as Herbert Spencer would say, "unthinkable." An atom, if the word has a meaning at all as a scientific term, must mean an ultimate indivisible particle of matter—a unit of matter. Now, to conceive of a piece of matter, having necessarily, because it is matter, length and breadth, and yet as being indivisible, is, as I think, impossible. And if we adopt the view of Faraday, that atoms are "centres of force," the difficulty remains. A centre of force must be either material or immaterial; if material, the absurdity remains as before; if immaterial, then no aggregate of the immaterial could form the material universe. Science is thus completely at fault regarding these hypothetical atoms.

And when we proceed to test this atomic theory in its development, evolving worlds and systems, and organisms, and animal life, difficulties accumulate at every step. It is held that atoms—whether eternal (that is, self-existent), or "manufactured articles"; whether inert, or gifted with feelings of love and hate; whether destitute of power, or possessing inherent potency—have arranged themselves by chance friction and spontaneous interaction throughout the infinite past, into those forms of wondrous beauty and delicate and complicated mechanism which we now see in every part of the universe, and which are all guided by wise laws, and adapted to wise ends. What is the scientific proof of this theory? There is none, and there can be none. No scientist professes to have seen atoms building up worlds, or spontaneously evolving new forms. The very nature of the theory places it beyond the range of Science, relegating it away to the infinite past. And besides, the notion of matter arranging itself spontaneously into systems governed by exact law, and organisms exhibiting the most beautiful design, is not only unsupported by scientific observation, but it is opposed to the whole analogy of experience. Spontaneous action is, as Huxley rightly says, action without a cause, which is unscientific and impossible. It is impossible to conceive of a

* *Address*, p. 26.

change taking place without a cause, and action necessarily involves change, so that spontaneity in matter is an impossibility.* The idea of spontaneity in matter is not one of those physical theories which, as Tyndall says, lie beyond experience, but is yet derived by a process of abstraction from experience. No process of abstraction can derive from experience anything which is contrary to the entire analogy of experience. Take as an illustration of the impossibility of conceiving mere matter capable of spontaneously evolving an object familiar to us all—the human eye; and I here borrow the words of one of the most distinguished of modern naturalists, Professor Pritchard:—“From what I know, through my own speciality, both from geometry and experiment, of the structure of the lenses of the human eye, I do not believe that any amount of evolution extending through any amount of time, could have issued in the production of that most beautiful and complicated instrument, the human eye. The most perfect, and at the same time the most difficult, optical contrivance known is the powerful achromatic object-glass of a microscope; its structure is the long unhoped-for result of the ingenuity of many powerful minds, yet in complexity and in perfection it falls infinitely below the structure of the eye. Disarrange any one of the curvatures of the many surfaces, or distances, or densities of the latter; or, worse, disarrange its incomprehensible self-adaptive powers, the like of which is possessed by the handiwork of nothing human, and all the opticians in the world could not tell you what is the correlative alteration necessary to repair it, and, still less, to improve it, as a natural selection is presumed to imply.”†

Tyndall himself is forced to admit that the structure of the universe is an insoluble mystery; and Huxley, after placing the dogma of “Atheistic materialism” in its strongest light, says:—“But, if it is certain that we can have no knowledge of the nature of either matter or spirit, and that the notion of necessity is something illegitimately thrust into the perfectly legitimate conception of law, the materialistic position that there is nothing in the world but matter, force, and necessity, is as utterly devoid of justification as the most baseless of theological dogmas.”‡ I am content to leave the theory of atomic, or Atheistic materialism, in the position thus assigned to it by one of its most accomplished exponents.

Here again we see that the solution of the grand problem

* See Herbert Spencer, *First Principles*, pp. 32, seq.

† Paper read at Brighton, 1874.

‡ *Lay Sermons*, p. 144.

of the origin of the universe is beyond the range of Science. Science indicates the necessity of something—some self-existent, infinite, originating Power, above and beyond matter. Herbert Spencer has put the case very forcibly :—“ Here then, respecting the nature of the universe, we seem committed to certain unavoidable conclusions. The objects and actions surrounding us, not less than the phenomena of our own consciousness, compel us to ask a cause ; in our search for a cause, we discover no resting-place until we arrive at the hypothesis of a First Cause ; and we have no alternative but to regard this First Cause as infinite and absolute.”* The inferential teaching of Science, as Herbert Spencer and others admit, is not exhausted in a merely negative result. It reveals in nature everywhere the existence of what is now technically called *force*. However far its observations are carried back, force cannot be eliminated or dispensed with. It is involved in the motion of a grain of sand as fully as in the circling of the spheres ; and if Science here attempt to pass beyond the range of sense, and to theorise about force existing in atoms, we follow it and say, You are but shifting the mystery, and we press the natural question, What put force in the atoms ? Whence came it ? Thus we drive the scientist back and back through every province of his own legitimate domain ; we drive him back, too, through those regions of hazy theory and dim speculation in which he loves to expatiate, until at last by an inexorable logic we compel him to admit, as Herbert Spencer shows, an Author of force. Tyndall has virtually admitted this in his lecture on *Crystalline and Molecular Forces* :—“ And, if you will allow me a moment’s diversion, I would say that I have stood in the springtime and looked upon the sprouting foliage, the grass, and the flowers, and the general joy of opening life. And in my ignorance of it all I have asked myself whether there is no power, being, or thing, in the universe whose knowledge of that of which I am so ignorant is greater than mine. I have asked myself, can it be possible that man’s knowledge is the greatest knowledge—that man’s life is the highest life ? My friends, the profession of that Atheism with which I am sometimes so lightly charged would, in my case, be an impossible answer to this question.” Now what is the possible, the certain answer, to this touching cry of an exponent of, if not believer in, “ Atheistic materialism ” ? It may thus be taken from the

* *First Principles*, p. 38.

first record of Divine Revelation :—“ In the beginning GOD created the heaven and the earth. . . . And the SPIRIT OF GOD moved upon the face of the waters. . . . And GOD said, Let the earth bring forth grass. . . . And GOD created every living thing that moveth. . . . And GOD created man in His own image.”

II. THE ORIGIN OF LIFE.

The origin of life is a still deeper problem than the origin of matter and of the material universe. Owen, Darwin, and Huxley may be regarded as among the leading men, at least in England, in physiological research. Tyndall follows in their wake. But Herbert Spencer is the philosopher who, systematising the results of their profound researches, and deducing from them general principles, endeavours to trace life to its source, and to reveal its cause. I shall try to show you the line of argument, and to test the accuracy of the conclusions arrived at.

In attempting to discover the origin of life, the eye of the biologist is naturally turned to the germ in which the life power, if I may so speak, lies, and in which it begins to develop ; his ultimate aim being to ascertain how it springs into existence, and what is its primary cause. Huxley's description is clear, and I give it in full :—

“ Examine the recently-laid egg of some common animal, such as a salamander or a newt. It is a minute spheroid in which the best microscope will reveal nothing but a structureless sac, enclosing a glairy fluid, holding granules in suspension. But strange possibilities lie dormant in that semi-fluid globule. Let a moderate supply of warmth reach its watery cradle, and the plastic matter undergoes changes so rapid, and yet so steady and purpose-like in their succession, that one can only compare them to those operated by a skilled modeller upon a formless lump of clay. As with an invisible trowel, the mass is divided and subdivided into smaller and smaller portions, until it is reduced to an aggregation of granules not too large to build withal the finest fabrics of the nascent organism. And then it is as if a delicate finger traced out the line to be occupied by the spinal column, and moulded the contour of the body—pinching up the head at one end, the tail at the other, and fashioning flank and limb into due salamandrine proportions in so artistic a way that, after watching the process hour by hour, one is almost involuntarily possessed by the

notion that some more subtle aid to vision than an achromatic would show the hidden artist, with his plan before him, striving with skilful manipulation to perfect his work." And then, to sum up the results of his investigations, he adds:—"What is true of the newt is true of every animal and of every plant; the acorn tends to build itself up again into a woodland giant, such as that from whose twig it fell; the spore of the humblest lichen reproduces the green or brown incrustation which gave it birth; and, at the other end of the scale of life, the child that resembled neither the paternal nor the maternal side of the house would be regarded as a kind of monster. . . . It is the first great law of reproduction, that the offspring tends to resemble its parent or parents more closely than anything else."*

But what light does all this beautiful description throw upon the origin of life? None. Huxley adds, to be sure, that "Science will some day show us how this law is a necessary consequence of the more general laws which govern matter; but, for the present, more can hardly be said than that it appears to be in harmony with them. We know that the phenomena of vitality are not something apart from other physical phenomena, but one with them; and matter and force are the two names of the one artist who fashions the living as well as the lifeless." This has a scientific sound, as if the philosopher were enunciating an observed fact; but in reality it is a theory, originating in Huxley's foregone opinion, and having no logical connexion with his observations. The fact is, his observations tend to a widely different conclusion. They show us the guiding power which that mysterious entity we call life exercises upon matter, moulding it into forms of exquisite beauty, and yet wide diversity; they show us that life cannot be a unit—that is, a thing of one essence and type, emanating from matter; for were it so, its operations upon matter would be uniform, and there would be but one class of organisms in the universe. Or, suppose we admit, with Herbert Spencer, that the life principle is modified to meet the requirements of its environments; then the nature of the full-grown animal could never be predicted, as that would depend on the environments which accident, or the deliberate operation of some other power, might entirely change. On the contrary, Huxley's investigations prove that there are essentially distinct types of life, though all appear to the scientist to have the same elementary material basis; and

* *Lay Sermons*, pp. 261, 262.

that each type operates upon matter—the very same matter, too—with such irresistible guiding potency as to build it up into forms exactly corresponding to the parent stock. Science cannot, in this respect, control it; it may extinguish it; it may dwarf it; but it cannot confer upon it the power or capability of building up an organism different from that of its parent. Matter—all life's visible environment—can do nothing but supply the raw material of construction. Life guides the moulding and building in entire independence, alike of man and of matter; and all scientific investigation proves that life—pre-existing life—is essential to the production of living organisms.

But scientists have tried to go deeper, and we must follow them. The material basis of life, or *Protoplasm* as it is called, has been subjected to most minute examination by the microscope, and to the most searching analysis of the chemist. Its constituent elements have been discovered and described, and the results are interesting and instructive. Huxley says, "that all the forms of protoplasm which have yet been examined contain the four elements—carbon, hydrogen, oxygen, and nitrogen—in very complex union."* In whatever form it appears, "whether fungus or oak, worm or man," its elements are the same; and when life in it becomes extinct, it "is resolved into its mineral and lifeless constituents."† It is admitted, of course, that carbon, hydrogen, oxygen, and nitrogen are lifeless bodies, and that they all exist previous to their union; "but when they are brought together," says Huxley, "under certain conditions, they give rise to the still more complex body, protoplasm; and this protoplasm exhibits the phenomena of life."‡

Would it not, at first sight, seem from these words that Science had at length succeeded in solving the mystery of the origin of life? It knows all the elements of protoplasm; and there is no lack of them in nature. They exist everywhere around us. "With my own hands," writes Professor Pritchard, "a quarter of a century ago, I obtained all the elements which I found in an egg and in grains of wheat, out of a piece of granite and from the air which surrounded it—element for element. It has been one of the most astonishing and unexpected results of modern Science that we can unmistakably trace these very elements also in the stars."§ So, then, the elements are known, and are at hand; Science can easily put

* *Lay Sermons*, p. 130.

† *Ibid.*, p. 131.

‡ *Ibid.*, p. 135.

§ Paper read at Brighton, 1874.

them together; and Huxley says, "I can find no intelligible ground for refusing to say that the properties of protoplasm"—that is, life—"result from the nature and disposition of its molecules."* Yet he is unable to produce life from these materials. Science here utterly fails him. Its field, alike of potency and of knowledge, is at this point shut in by an impassable barrier. Huxley confesses that pre-existing living matter is necessary to the development of the phenomena of life; and he admits that its influence on the material basis "is something quite unintelligible;"† while Pritchard affirms that "no chemist, with all his wonderful art, has ever yet witnessed the evolution of a living thing from those lifeless molecules of matter and force."‡

So far, then, as Science is concerned, we are as remote as ever from the solution of the problem of the origin of life. Scientists have neither been able to produce life, nor to trace it; they have only been able to observe its phenomena. They can see motion and development in the living protoplasm; but these are the effects of a life already in existence, not the essence of life itself. Herbert Spencer describes life as "a continuous adjustment of internal relations to external relations"; but this Delphian utterance, if it has any meaning at all, can only refer to the phenomena of life; it does not touch its essence, nor does it throw one ray of light upon its origin. That the life is inherent in, or evolved by, matter is inconceivable, for the living protoplasm often dies, and then, though all the material elements are still present, development ceases at once; the power which moulds and builds has gone mysteriously as it came, and no human agency can again vitalise the dead mass, which now obeys the ordinary laws of matter, and is resolved into its mineral constituents. "The living body resists the chemical agencies that are ready to attack it; the dead body at once succumbs to these agencies." Life is the power which moulds and builds up organisms, and preserves the matter of which they are composed from the dissolving force of the ordinary laws to which mere matter is subject. The teaching of Science, therefore, is, that life is something apart from matter; but what it is, whence it comes, and whither it goes, Science cannot tell. Its operation on matter is wonderful. It guides the chemical forces so as to arrange inert matter into shapes of the most exquisite proportions, and organisms of the most delicate and complicated mechanism—

* *Lay Sermons*, p. 138.

† Brighton paper.

‡ *Ibid.*, p. 137.

all of which are entirely distinct from those normal forms which the constituent elements would assume, if uncontrolled by the life-principle. And then, again, when the life departs, the very matter in which it existed, and which it moulded with such mystic power, speedily becomes a mass of loathsome rottenness, and dissolves into its original elements. Huxley is compelled to admit all this; but he yet tries to save his favourite theory by affirming,—not in accordance with, but in spite of logical sequence,—that the phenomena presented by protoplasm, living or dead, are its properties; and that all vital action may be said to be the result of the molecular forces of the protoplasm which displays it.* How, I ask, can vital action be the result of the molecular forces alone, when, according to his own admission, the influence of pre-existing living matter is shown by scientific observation to be necessary to vital action? The vital action is clearly the result, not of molecular forces, but of the life-principle operating on the molecules. In denying this Huxley sacrifices his logic to his theory; and he would do well to remember Tyndall's striking words:—"There is in the true man of science a wish stronger than the wish to have his beliefs upheld—namely, to have them true. And the stronger wish causes him to reject the most plausible support, if he has reason to suspect that it is vitiated by error. Those to whom I refer as having studied the question, believing the evidence offered in favour of spontaneous generation to be thus vitiated, cannot accept it. They know full well that the chemist now prepares from inorganic matter a vast array of substances which were some time ago regarded as the sole products of vitality. They are intimately acquainted with the structural power of matter as evidenced in the phenomena of crystallisation; they can justify, scientifically, their belief in its potency, under proper conditions, to produce organisms; but in reply to your question they will frankly admit their inability to point to any satisfactory experimental proof that life can be developed save from demonstrable antecedent life." And his final deliverance is contained in these words:—"In fact, the whole process of evolution is the manifestation of a power absolutely inscrutable to the intellect of man. As little in our days as in the days of Job can man by searching find this power out. Considered fundamentally, then, it is by the operation of an insoluble mystery that life on earth is evolved."† To the same effect Herbert Spencer writes:—"The consciousness of an inscrutable power mani-

* *Lay Sermons*, p. 137.

† *Address*.

fested to us through all phenomena, has been growing ever clearer. . . . To this conclusion Science inevitably arrives as it reaches its confines.”*

This is enough for my purpose. The limits of the province of Science are here drawn rigidly. Science shows that life is an entity, a power, apart from and above matter, but that in its essence it eludes the keen eye of the philosopher; that it cannot be discovered by the researches of the physiologist; that it will not emanate from the retort of the chemist, however skilfully he may arrange and manipulate the elements of its physical basis; that, in fact, it lies hid among those sublime mysteries of nature which human wisdom utterly fails to penetrate, and which the infinite wisdom of the Great Creator can alone reveal to the yearning spirit of His faithful creature. The whole teachings of Science are, so far as they go, in harmony with that sublime record:—“And 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.”

III. THE ORIGIN OF SPECIES.

Darwin is the Apostle of the doctrine of Evolution, though the idea was broached by Lucretius nearly two thousand years ago. To the naturalist, Darwin's book on *The Origin of Species* is one of the most important contributions to modern Science. As a scientific observer, an acute, laborious, profound student of nature, Darwin has no superior. The range of his researches, too, has been wonderful; he has travelled over the world to sift materials; he has recorded the results with a lucidity which leaves nothing to be desired; and yet one can, with perfect logical consistency, admit the whole of his observed facts, and reject the whole of his hypotheses. He and his disciples have a strange way of overlooking what logicians call the middle term—the connecting link between the fact established by scientific observation, and the conclusion which they profess to deduce from it. Professor Huxley, who may be regarded as Darwin's ablest interpreter, virtually acknowledges this when he says, “that notwithstanding the clearness of the style, those who attempt fairly to digest the book find much of it a sort of intellectual pemmican—a mass of facts crushed and pounded into shape,

* *First Principles*, p. 108.

rather than held together by the ordinary medium of an obvious logical bond." Then, after a lengthened critical analysis of Darwin's plan, investigations and reasoning, and after treating all opponents of the theory of evolution, and more especially Biblical scholars, with no small amount of scorn and ridicule, and after lavishing upon them a very ample vocabulary of hard names and epithets, Huxley, with admirable simplicity and praiseworthy candour, concludes as follows:—"There is no fault to be found with Darwin's method, then; but it is another question whether he has fulfilled all the conditions imposed by that method. Is it satisfactorily proved, in fact, that species may be originated by selection? that there is such a thing as natural selection? that none of the phenomena exhibited by species are inconsistent with the origin of species in this way? If these questions can be answered in the affirmative, Darwin's view steps out of the ranks of hypotheses into those of proved theories; but, so long as the evidence at present adduced falls short of enforcing that affirmation, so long, to our minds, must the new doctrine be content to remain among the former—an extremely valuable, and in the highest degree probable doctrine, indeed the only extant hypothesis which is worth anything in a scientific point of view; but still a hypothesis, and not yet the theory of species. After much consideration, and with assuredly no bias against Mr. Darwin's views, it is our clear conviction that, as the evidence stands, it is not absolutely proven that a group of animals, having all the characters exhibited by species in nature, has ever been originated by selection, whether artificial or natural. . . . Mr. Darwin is perfectly aware of this weak point, and brings forward a multitude of ingenious and important arguments to diminish the force of the objection. We admit the value of these arguments to the fullest extent; nay, we will go so far as to express our belief that experiments, conducted by a skilful physiologist, would very probably obtain the desired production of mutually more or less infertile breeds from a common stock, in a comparatively few years; but still, as the case stands at present, this 'little rift within the lute' is not to be disguised nor overlooked."*

The essence of Darwin's hypothesis is, that all forms of life, from the humblest zoophyte up to man, have evolved from one primordial germ. All species, he maintains, have been produced by the development of varieties from common stocks by the conversion of these first into permanent races and then

* *Lay Sermons*, pp. 294, seq.

into new species, by the process of natural selection, which process is essentially identical with that artificial selection by which man has originated the races of domestic animals—the *struggle for existence* taking the place of man, and exerting, in the case of natural selection, that selective action which he performs in artificial selection.*

The crucial point in this hypothesis is, that species may be originated by natural selection. But Huxley, and Darwin himself, admit that this has never been proved. Darwin, it is true, draws largely upon an infinite past. He says, "Nature grants vast periods of time for the work of natural selection;" and again, "The mind cannot possibly grasp the full meaning of a hundred million of years. It cannot add up and perceive the full effects of many slight variations accumulated during almost an infinite series of generations." Now as to this "almost infinite past," Sir Wm. Thomson, probably the most profound of our physicists, has dissipated all such speculation by showing that life-forms such as Darwin postulates could not have existed during an infinite past; "because, assuming that the heat has been uniformly conducted out of the earth, as it is now, it must have been so intense within a comparatively limited period, as to be capable of melting a mass of rock equal to the bulk of the whole earth."† But, be this as it may, one thing is clear, that Darwin and his fellow scientists admit their inability to *prove* the truth of the Evolution Hypothesis.

Another point set forth by Darwin is worthy of notice. In answer to the question, How do groups of species arise? he replies, "From the struggle for life. Owing to their struggle for life, any variation, however slight, and from whatever cause proceeding, if it be in any degree profitable to an individual of the species, in its infinitely complex relations to other organic beings and to external nature, will tend to the preservation of that individual, and will generally be inherited by its offspring. The offspring, also, will thus have a better chance of surviving."‡ The essence of this most remarkable hypothesis is, that all the wonderful adaptations which we find in the physical structure of the various species of animals, to the conditions in which they are placed, to the work they have to do, to the wants they have to supply, have sprung from a long and fortuitous sequence of natural events, to which Darwin gives the name Natural Selection. If this be true, then the

* See Huxley, *Lay Sermons*, pp. 292, *seq.*

† Frazer, *Blending Lights*, p. 4.

‡ *Origin of Species*, p. 61.

most beautiful and complex organs of animals—the heart and veins, the nervous system, the human hand, the eye, the mind itself, with all its faculties—have been constructed, not by the infinite wisdom of an Almighty Creator, adapting every part, organ, and faculty, with requisite skill, to the office it was designed to fill, but from a medley of blind chance, countless blunders, and innumerable minute accidental modifications, which occurred in the struggle for existence during myriads of past ages. The fish was not designed for the water; the bird was not designed to fly; the ear was not designed for hearing; the eye was not designed for seeing; all these, says Darwin, are just the fortuitous products of organised matter pushing its way at random, and after incalculable instances of trial and failure, during incalculable ages, at last hitting on what was best.*

And what is the scientific proof of this most wonderful conception? Nothing short of actual observation of the whole alleged process would make such a theory even credible. There has, of course, been no such observation. There could be none, for an “almost infinite series of generations” is postulated; and that lies outside the domain of Science. “By the theory of natural selection,” says Darwin, “all living species have been connected with the parent species of each genus, by differences not greater than we see between the varieties of the same species in the present day.”† Here, as it seems to me, lies the fundamental logical fallacy. He argues from the existence of slight varieties in the same species to the entire transmutation of species. The former is admitted on all hands; the latter has no logical connexion with it, and has no basis in scientific investigation. Yet Huxley records his conviction that this theory of Darwin, which traces all organisms and species to fortuitous trials and combinations, has given a death-blow to Teleology, that is, to the doctrine of design in nature, and of final causes.

Huxley's argument on this point deserves special attention. It is one of the most remarkable specimens of scientific reasoning it has ever been my good or evil fortune to read. It is as follows:—“The teleological argument runs thus: an organ or organism is precisely fitted to perform a function or purpose; therefore it was specially constructed to perform that function. In Paley's famous illustration, the adaptation of all the parts of the watch to the function or purpose of showing the time,

* See *The Darwinian Theory Examined*, p. 286.

† *Origin of Species*, p. 281.

is held to be evidence that the watch was specially contrived to that end; on the ground that the only cause we know of, competent to produce such an effect as a watch which shall keep time, is a contriving intelligence adapting the means directly to that end. Suppose, however, that any one had been able to show that the watch had not been made directly by any person, but that it was the result of the modification of another watch which kept time but poorly; and that this again had proceeded from a structure which could hardly be called a watch at all, seeing that it had no figures on the dial, and the hands were rudimentary; and that, going back and back in time, we came at last to a revolving barrel as the earliest traceable rudiment of the whole fabric. And imagine that it had been possible to show that all these changes had resulted, first, from a tendency in the structure to vary indefinitely; and, secondly, from something in the surrounding world which helped all variations in the direction of an accurate time-keeper, and checked all those in other directions; then it is obvious that the force of Paley's argument would be gone. For it would be demonstrated that an apparatus thoroughly well adapted to a particular purpose might be the result of a method of trial and error worked by unintelligent agents, as well as of the direct application of the means appropriate to that end. Now, it appears to us that we have here, for illustration's sake, supposed to be done with the watch what the establishment of Darwin's theory will do for the world.*

Well, if Paley's argument remain in force until we are able to produce a developed watch, my impression is it will last a long time; and, if Darwin's theory must wait for proof until that watch is discovered, then the process of proof will reach at least as far into the future as the process of the evolution of species reaches into the past. True, Huxley puts this illustration forward as a supposition; but, I ask, does it not seem like an insult to common sense? Teleology remains unmoved by such theories as these,—theories which one can only rightly describe, in the graphic phrase of Carlyle, as "diluted insanity."

We have now considered Huxley's opinion of Darwin's researches and theories; but how very differently some men of the highest scientific attainments interpret them may be gathered from the following eloquent words of Professor Pritchard:—"I know of no greater intellectual treat—I might even call it moral—than to take Darwin's most charming book on *The Fertilisation*

* *Lay Sermons*, pp. 301-2.

of *Orchids*, and his equally charming and acute monograph on the *Lythrums*, and repeat, as I have repeated, many of the experiments and observations therein detailed. The effect on my mind was an irresistible impulse to uncover and bow my head, as being in the too immediate presence of the wonderful prescience and benevolent contrivance of the UNIVERSAL FATHER. And I think such, also, would be the result on the convictions and the emotions of the vast majority of average men. I think the verdict would be that no plainer marks of contriving will exist in a steam-engine, or a printing-press, or a telescope."

Design in nature can be seen by every unprejudiced man who observes nature, or who thoughtfully reads the recorded observations of others. Every fresh discovery in physiology; every inquiry of the scientist into the mechanism of the animal frame; every inspection of the marvellous adaptation of insect organisms to the complicated structure of flowers; in a word, every new achievement of the naturalist in exploring the domain of nature, reveals more clearly, and establishes more firmly, the presence everywhere, and in everything, of an infinitely powerful and infinitely wise Designing Mind. Unseen by human eye, undiscoverable by scientific research in the mystery of its working, we yet discern the impress and recognise the beneficent control of that Infinite Mind in earth, and sea, and sky.

IV. THE ORIGIN OF MIND AND ITS CONCEPTION OF GOD.

The origin and nature of mind constitute the highest problem with which Science has ventured to grapple. Democritus, as I have said, held that the mind consists of fine, smooth atoms, like those of fire. Huxley seems to affirm that "those manifestations of intellect, of feeling, and of will, which we rightly name the higher faculties," are known only as transitory changes in the relative positions of parts of the body.* "Matter and spirit," he adds, "are but names for the imaginary substrata of groups of natural phenomena." Tyndall is a little more explicit when he thus writes:—"Not alone the mechanism of the human body, but that of the human mind itself,—emotion, intellect, will, and all their phenomena,—were once latent in a fiery cloud."†

* *Lay Sermons*, pp. 122, 143.

† *Address*.

These are startling statements, and read like a confession of a material atheism. But as the language is somewhat hazy, and as Tyndall and Huxley seem indignant that they should be charged with holding such a dogma, I leave them to explain their own meaning, and to give to the world, if they so desire, their scientific creed in intelligible language. One thing, however, is clear; whatever view of the origin and nature of the human mind the words are intended to convey, they do not even attempt to establish it by scientific proof. No observation has ever yet reached, or can ever reach, to the development of a fiery cloud into emotion, intellect, will, and all the phenomena of the human mind. It is a daring flight of imagination, and nothing more. Tyndall himself seems to shrink from it in moments of thoughtfulness, when imagination is restrained by judgment:—"What baffles and bewilders me, is the notion that from these physical tremors, things so utterly incongruous with them as sensation, thought and emotion can be derived. . . . You cannot satisfy the human understanding in its demand for logical continuity between molecular processes and the phenomena of consciousness. This is the rock on which materialism must inevitably split whenever it pretends to be a complete philosophy of life."* Herbert Spencer is right in asserting that of the substance of mind nothing is known, or can be known by Science. The faculties of the mind lie outside the field of pure Science.

This suggests another and most important point. It is by the mind the scientist obtains his knowledge of nature; all his knowledge, in fact, must come through that channel. The senses are only the material avenues through which the mind apprehends physical phenomena. The senses observe, but to their observations must be added primary beliefs or intuitions, ere any intelligible interpretation, even of the simplest phenomena, can be given. It is from intuition we derive our knowledge of the reality of the external world and everything in it; for sensation is only the apprehension by the mind of an impression made on the sensorium, and it is the mind itself which intuitively forms the conception of the reality of the object that made the impression. So, in like manner, from intuition we get our knowledge of the properties of matter, such as weight, extension, and force; it is by intuition we form comparisons; and it is from intuition we obtain our ideas of cause and effect. The senses, on whatever object exercised, and though aided by the utmost experience of the

* *Address.*

physicist, and the utmost precision of instruments, merely make certain impressions on the mind ; and those impressions must be interpreted by our intuitions ere they can be of use in science. So then, after all, our primary beliefs, or the intuitions of our mind, form the foundation of all scientific reasoning. Dr. Carpenter set this matter in its true light, when he said to the British Association (1872) :—“ Even in astronomy, the most exact of the sciences, we cannot proceed a step without translating the actual phenomena of nature into intellectual representations of those phenomena. It is this fundamental truth which gives rise to most of those differences which exist among scientists. The minds of some men are warped by theories ; others entertain peculiar views regarding primary beliefs ; and hence they interpret the very same natural phenomena in widely different ways. Darwin, for example, interprets certain observed phenomena so as to support his favourite theory of evolution ; while Kölliker, a German naturalist of great eminence, interprets the same phenomena in such a manner as to favour an opposite view.”

One point of supreme importance in regard to our intuitions I must notice ere I close. Among the most potent of our primary beliefs is that of *cause and effect*. It is, in fact, irresistible. Herbert Spencer thus describes it :—“ We cannot think at all about the impressions which the external world produces upon us, without thinking of them as caused ; and we cannot carry out an inquiry concerning their causation, without inevitably committing ourselves to the hypothesis of a First Cause.”* Science, by itself, does not reveal, because it cannot reach, that First Cause ; but Science, as we have seen, reveals phenomena which, being rightly interpreted, lead by sound logical sequence to a belief in that First Cause. And the mind by its irresistible intuitions leads us back to the conviction that the First Cause must be in every sense perfect, complete, total ; including within itself all power, and transcending all law. It must be one and absolute ; it must, in a word, be the God of Revelation.

And, further, the mind has other primary beliefs intimately associated with the belief in a First Cause. It has a belief that it is dependent upon a Higher Being, and that it owes allegiance to Him ; it has a consciousness of a moral law, that man is responsible for his obedience or disobedience, and that there is a future state of reward and punishment. This belief in a future state we cannot quench. Do what we will, reason as we will, our higher nature looks away onward, with

* *First Principles*, p. 37.

earnest, irrepressible, unceasing yearning, to immortality in another sphere. Tennyson has expressed this beautifully :—

“Thou wilt not leave us in the dust ;
 Thou madest man, he knows not why :
 He thinks he was not made to die :
 And Thou hast made him ; Thou art just.

“We have but faith ; we cannot know ;
 For knowledge is of things we see ;
 And yet we trust it comes from Thee,
 A beam in darkness ; let it grow.”

Science opens no field to which these intuitions belong, or in which they can find a resting-place. It cannot satisfy them. It leaves us in the dark, helpless and hopeless, on those very points which, constituted as we are with yearning affections and boundless aspirations, are of supremest importance. That very theory of “the survival of the fittest” is here completely at fault; for it would represent a series of beliefs to have been developed in the mind, which are yet useless and deceptive. No effort of genius, no perverse skill of sophistry, can ever reconcile these beliefs with any theory of evolution; for if this be the ultimate result of the latest combinations of atoms, if this be all that nature has done or can do, then this ultimate result is human life without adequate motive, “affections with no object sufficient to fill them, hopes of immortality never to be realised, aspirations after God and godliness never to be attained; and thus, too, myriads of myriads of other nebulae may still be the potentials of delusions, and their outcomes the kingdom of despair.”*

But a sounder and a higher philosophy, the philosophy embodied in the Revelation of God, gives far other teaching. It tells man that those grand intuitions were not implanted in vain. It leads him to look beyond the material universe for the satisfaction of his profoundest thoughts, and the realisation of his most earnest longings. It sees exhibited in some form by every nation, tribe, and family of mankind, a feeling of dependence on One greater than man, and of moral obligation to One holier than man. This feeling arises with the earliest development of consciousness, and it grows and strengthens with our mental growth. We cannot repress it; and the mind which is compelled to interpret the impressions received through the senses, as proofs of the reality of the material world, is in like manner compelled to interpret the intuitions

* Pritchard, *Address at Brighton*.

of dependence and moral obligation, as proofs of the reality of a spiritual world. And thus, as Mansell says, "In the universal consciousness of innocence and guilt, of duty and disobedience, of an appeased and offended God, there is exhibited the instinctive confession of all mankind, that the moral nature of man, as subject to a law of obligation, reflects and represents the moral nature of a Deity by whom that obligation is imposed." *

We now see the legitimate province of Science, in which it reigns supreme, and beyond which it cannot pass. In this province, in all its grand discoveries, we bid it God speed, for it is the handmaid to a knowledge higher than it can reach. Science shows the wondrous structure of vegetable and animal organisms, and the evidences of design in them all. Science unfolds the mechanism of the heavens, and the sublime simplicity of the laws that guide the stars in their orbits. Science reveals a harmony and a unity in all nature, adapting each particle of matter—each insect, plant, and animal—each planet, star, and constellation—to its own place, and making it fulfil its own mission in the universe. Science shows that there is nothing defective, nothing redundant. Science thus leads us up, step by step, to the culminating point of man's intellectual interpretation of nature—his recognition of the unity of the Power of which her phenomena are the diversified manifestations.*

Here, however, Science leaves us, and Revelation perfects our knowledge. Revelation solves the highest problems that occupy human thought—the origin, duty, and destiny of man, and the being and nature of God. The origin of intellect and conscience, with all their conceptions of law, obligation, a future state, and a holy God, is revealed in one pregnant sentence:—"God created man in His own image." And of these sublime truths, Revelation is the sole and complete exponent. Its expositions, too—whether of law, or morals, or worship, or faith, or hope, or charity—find such a response in our own profoundest feelings and loftiest aspirations, that we instinctively bow before it as a message replete with the infinite wisdom and goodness of God. While Science disappoints our most momentous inquiries, while Philosophy leaves an aching void in the human heart, Revelation fulfils all our desires, and satisfies all our hopes. It enables us to look through the dark vista of this life's labours and sorrows, to

* *Bampton Lectures*, p. 113.

† *Carpenter, Presidential Address*.

another where labour shall have its reward and sorrow shall be unknown. It opens before us a sphere where the perfect knowledge after which we here vainly toil, and the perfect happiness after which we as vainly strive, shall be fully and for ever realised.

The CHAIRMAN (Mr. H. Cadman Jones).—I am sure I may return the hearty thanks of this meeting to Dr. Porter for his exceedingly able paper. Before calling on those present to discuss it, I would venture to call attention to the question whether it can fairly be said that the hypothesis of the existence of atoms "has no clear logical connexion with any observed fact." If the connexion between the observed law of chemical combination in definite proportions and the hypothesis of the existence of atoms be not strictly logical, at all events that hypothesis furnishes, as I believe, the only explanation of the law that has ever been suggested. It is therefore a hypothesis which has strong claims to our attention. I cannot agree in the idea that an atom is unthinkable. Dr. Porter says:—"Now, to conceive of a piece of matter, having necessarily, because it is matter, length and breadth, and yet being indivisible, is, as I think, an absurdity." For my part, I cannot see that it is so. You cannot conceive of matter having length and breadth, and yet of its being inconceivable and theoretically impossible that it should be divided, but it is perfectly possible to conceive an atom which has length, and breadth, and depth, and which is yet so physically constituted that it cannot be divided; and this is all that is necessary for the atomic theory. Not that an atom is something which cannot theoretically be divided, and must be conceived incapable of subdivision; but something which cannot by any existing causes in nature be divided. I have now to invite remarks on the subject of the paper from any of those present.

The Bishop of BALLARAT.—We are greatly indebted to Dr. Porter for the luminous style of his paper, and for the well-selected quotations, by means of which he has put the views of eminent men which he combats before us in their own words. On page 44, near the bottom, the persistence of the "fit" is noticed as part of the theory of the universe expounded from Lucretius by Tyndall. It always seems to me that it postulates a God to provide that the "fit" should be the "good." The struggle for existence which, as I think Kingsley remarks, of itself would yield the survival of the biggest, the most brutal or most unscrupulous, issues on the large scale in the triumph of that which corresponds to our moral idea of the *best*. Why should "blind combinations" do that? Dr. Porter sums up section ii. by quoting, as the Bible philosophy of life, in contradistinction to theories which make it a property of protoplasm, the passage describing God's bestowal of "life" on *man*. Was not this a different bestowal from that on the "moving creature that hath life"? And does Scripture anywhere record the bestowal of "life" on vegetables? If, therefore, protoplasm could even be shown to have life as a property in vegetation,

this would not contradict the Scripture teaching, that *man's* life was a special endowment. I will just refer to page 63, near the bottom, where Dr. Porter alludes to man's universal sense of his dependence on God. This is true even of the Australians, a very humble and slenderly-equipped branch of the human family. I may here remind you of the absence of any indication whatever of emergence from an ape condition, even among the most backward of mankind. The phenomena show the Australians to have been degraded, not exalted, from their past condition. And their religious ideas exhibit an extraordinary incrustation of splendid primitive truths—reminiscences of some grand and even Scriptural beliefs—with the most grotesque and contemptible subsequent additions. The cave paintings of Australia point to a superiority in the past inhabitants of the land. Before I sit down, may I ask whether the marsupium of the Australian animals is not better explained by teleology than by mere natural selection? A kangaroo's pouch seems a provision for a waterless or droughty country, where a kangaroo mother might have to travel a hundred miles for water. If she left her young at home they would not be alive on her return. The natural perambulator enables her to take them with her in her search for this necessary of life. I leave to learned naturalists to say how far the development of this organ has been traced to purely natural combinations, but an old-fashioned enough to see in it myself a special provision for a special need, by One whose tender mercies are over all His works.

Mr. J. HASSELL: What is indicated on the second page of the paper is I think, important,—namely, that evolution is only an hypothesis, not a demonstrated fact. A short time ago, I met a book by a French author, and was much amused by his theory to account for the existence of mammals on the earth at the present time. His line of argument was as follows:—At some period in the far distant past, a number of fishes were left by the tide in shallow water, and, as the gills would not perform their proper functions, imperfect respiration was carried on by means of the swim-bladder, and this was repeated again and again until ultimately true lungs were developed. Now, let this theory be tested by fact. When fish come to the surface of the water to obtain more oxygen than their native element contains, it results, not in the development of the swim-bladder, but in inflammation of the gills, and in course of time the fish dies. The writer then goes on to show that, when the fish have developed the swim-bladder into a breathing organ, and so cease to be fish, they became reptiles first, and then by degrees are developed into mammals. It is the duty of those people who believe in Creation to show the fallacy of such theories as these. With regard to a point referred to on page 42 I would say that, when these evolutionists ask us to believe that life is the result of molecular motion, or combination, they are really asking us to believe a greater miracle than that which we ask their assent to when we say that God gave life; because, if life resulted from the non-living, it would be a greater miracle than for God, who is Life, to put life not matter. (Hear.) If we are taunted as being credulous because we believe

in miracles, then, may we not charge those who believe in life resulting from the non-living with being far more credulous? Early in Section 3 reference is made to one of the fundamental doctrines of evolution, namely, that all the changes which have taken place must have been for the ultimate benefit of the creature. Well, then, may we not ask: Of what benefit could it be to any terrestrial or aquatic mammal with four limbs to give up the use of the two hind limbs in order that it might be converted into a whale? One would think that the four limbs would be better than two, yet we are asked to believe that certain four-limbed animals left off using their hind limbs so that they became altogether obliterated, and that the product was a whale. Again, of what use could it be to the ape to lose the grasping power of the hind hand? Surely the monkey tribe were better off with a quadruple grasping power than with a dual; but, if it be true that man was developed from the ape, then he must have lost the use of the hind thumbs, retaining the power of grasping in the two fore ones only. Beyond all this, of what benefit could it be to the race to lose the hairy covering of their bodies? Surely it must have been better to possess a hairy covering than to have a bare back; and yet, according to the hypothesis, it must have been otherwise. I was reading to-day in Dr. Pusey's sermon on "Unscience, not Science, antagonistic to Revelation," a quotation from the late Dr. Darwin, who, speaking of the work he had been doing, said, "I have at least, I hope, done good service in aiding to overthrow the dogma of separate creations." Now if that was his object, it was not a very noble one, and if he has overthrown the dogma—which I don't think he has—he must have done a wonderful work. I believe that, as long as common-sense men and women see in the wonderful creatures around them such extraordinary examples of the adaptation of means to ends, we shall be able to look the evolutionists in the face and tell them that they never will be able to overthrow the truth—I will not say dogma—of separate creations. I feel deeply grateful to Dr. Porter for his valuable paper, and hope it will be widely circulated, as it shows that those who come forward as our teachers in these matters do not agree among themselves, and that they are endeavouring to make men believe that mere assumptions are demonstrated facts.

Mr. H. C. DENT.—I had the advantage of perusing Dr. Porter's paper before coming here, and did so with the greatest pleasure and delight. The paper, in my humble opinion, is a very clear statement of some of the grandest truths of science, the aims of science, and the metaphysical deductions drawn from the researches of science—all urged with irresistible force on our minds. I propose only to refer to one or two points in respect to the origin of species and natural selection. Dr. Porter says:—

"The crucial point in this theory is, that species may be originated by natural selection. But Huxley, and Darwin himself, admit that this has never been proved. Darwin, it is true, draws largely upon an infinite past. He says: 'Nature grants vast periods of time for the work of natural selection.' And again: 'The mind cannot possibly grasp the full meaning of a hundred million of years. It cannot add up and perceive the full effects of many slight variations accumulated during almost an infinite series of generations.'"

As to this almost infinite past, I hope to say a word in a minute or two. Later on in the paper we find this quotation from Darwin :—

“By the theory of natural selection, all living species have been connected with the parent species of each genus by differences not greater than we see between the varieties of the same species in the present day.”

Now, what says Sir Charles Lyell on species? He says: “Species have a real existence in nature. Each was endowed, at the time of its creation, with the attributes and organisation with which it is now distinguished.” And Darwin, in his book, even admits that the most eminent paleontologists, have unanimously maintained the immutability of species, though Sir Charles Lyell, in his old age, supported the other side. Tyndall (Belfast Address, British Association, 1874) says :—

“Natural selection acts by the preservation and accumulation of small inherited modifications, each profitable to the preserved being”; (and Wallace): “It is a fundamental doctrine of evolution that all changes of form and structure, all increase in the size of an organ, or in its complexity, all greater specialisation, or physiological divisions of labour, can only be brought about inasmuch as it is for the good of the being so modified.”

Then we ought to have a regular and systematically arranged order between every kind of species. But Professor Alleyne-Nicholson, in his *Manual of Zoology*, says this is not the case, and he adds :—

“For instance, Vertebrates belong to a higher morphological type than Molluscs, but the higher Molluscs, *e.g.*, the cuttle-fish, are far more highly organised, as far as their type is concerned, than the lowest vertebrate. Therefore, it is obvious that a linear classification is impossible, for the higher members of each sub-kingdom are more highly organised than the lower forms of the next ascending sub-kingdom; at the same time, they are constructed upon a lower morphological type.”

Then I should like to read two or three very brief extracts from Mr. Wallace's work on *Natural Selection*, as applied to Man. While upholding natural selection, as an evolutionist naturally would, he somewhat doubts when he comes to Man. He says :—

“It seems to me to be absolutely certain that natural selection could *not* have produced man's hairless body by the accumulation of variations from a hairy ancestor. Had it been abolished in ancestral tropical man, it is inconceivable that, as man spread into colder climates, it should not have returned under the powerful influences of reversion to such a long-persistent ancestral type.”

Then again he says :—

“That the perfectly erect form, short arms, and wholly non-prehensile foot so strongly differentiate man from the arboreal apes, that if continued researches in all parts of Europe and Asia fail to bring to light any proof of man's presence, it will be at least a presumption that he came into existence at a much later date, and by a much more rapid process of development. It will be a fair argument that just as he is in his mental and moral nature, his capacities and aspirations, so infinitely raised above the brutes, so his origin is due in part to distinct and higher agencies than such as have effected their development.”

Again he says :—

“Man is to be placed apart, as not only the head and culminating point of the grand series of organic nature, but as in some degree a new and distinct order of being.”

I will not keep you more than one moment longer. I wish just to refer to Darwin's “almost infinite series of generations.” One of Darwin's very difficult points is the sudden appearances of new groups of animals. He says that if this occurred it would be entirely destructive of his theories, and the only ground on which he rests the apparent finding of sudden enormous numbers of new species is, that the intermediate links have not been preserved. But if we go back to the Cambrian epoch, we find that enormous numbers—I think four out of five kingdoms of invertebrates—are fully representative and are in the highest perfection, and there is no record whatever in the underlying strata of any predecessors of them.

Dr. PORTER.—There is not very much for me to reply to ; but the first point I would venture to touch upon has reference to the remarks which you, Sir (the Chairman), have offered on the subject of atoms. I listened carefully to the words you used, and I thought there was one expression which seemed to grant all I ask. You said there are no appliances with which we are at present acquainted which would enable us to separate or divide an atom of matter, although you did not go so far as to say it was inconceivable that an atom of matter should be divisible.

The CHAIRMAN.—I contend only that there is no *à priori* reason why atoms should not exist which cannot be divided by any of the forces actually at work in the universe. I admit it to be unthinkable that there should be any portion of matter which you cannot conceive to be divisible.

Dr. PORTER.—That is all I ask. I think it inconceivable that a particle of matter, which as matter must possess length and breadth, is not capable of subdivision. Nobody has ever yet discovered an atom of matter. As to another point—that we are able to bring out the great facts that are taught in regard to nature and man in the Bible—facts as to the being of God, the origin of man, the origin of life—these are all things that are stated, and that we ascertain from the Bible, rightly interpreted. With reference to the question of life, various forms of life have been referred to. My object was to show that the origin of all life is to be traced to the distinct *fiat* of God—that no life, vegetable or animal, or human, which is the highest development of animal life, can have been derived from or evolved by mere matter. I might have entered into fuller explanations on this point, but time did not permit. May I say in conclusion that with regard to the proof of fundamental truths by history, history will not exactly reach all the truths I have referred to in my paper. The fundamental truths I speak of in it are these—the origin of matter and of the existing material universe. History cannot reach back to the creation ; neither can science. Creation is a matter of revelation, and as a matter of necessity all our knowledge must be derived from revelation. I look on that as a fundamental truth of Scripture. It involves the idea of the

creation of man by God. The origin of species is a lower doctrine ; but at the same time it involves the truthfulness of what is stated in the early chapters of the *Book of Genesis*, where we find each individual species traced to a Divine Author. As to the origin of mind, and of man himself, and the perceptions formed of the mind of God—these I regard also as fundamental truths which science cannot reveal to us, but which the Bible does. I have now to express my thanks to the meeting for the kindness with which I have been listened to. I am afraid my paper was rather long and that some parts of it were rather dry ; but my connexion with young men, and my responsibility in guiding them as far as possible in regard to these things, have led me to study the subject, and to prepare the paper I have read this evening. (Applause.)

The meeting was then adjourned.

NOTE.—The following letter from Dr., now Sir Andrew Clarke, Bart., F.R.S., was read at a recent public meeting :—“I take advantage of this hurried note to express the hope that in dealing with the relations of science and religion some one will point out what I have not myself seen pointed out—(1) that there is nothing absolute in the whole objective world ; no absolute standard of mass, quality, or duration ; that the knowledge of an absolute primitive weight of atom is impossible, and that what we call the ordinary weight of a body is not a thing of itself alone, but a product of the body by which it is attracted, the distance between them, and the disturbances occasioned by other invisible but active forces ; (2) that the assumption constituting the fundamental axioms of modern physics, that all true explanations of natural phenomena are mechanical is incompatible with demonstrable facts ; (3) that the progress of chemistry is becoming more and more irreconcilable with the theory of the atomic constitution of matter ; (4) that there is no law of physics, not even the law of gravitation, without great growing exceptions, and no theory of physical phenomena, not even the undulating theory of light, which is not now becoming more and more inadequate to explain the facts discovered within its area of comprehension ; (5) and that, therefore, the boasted accuracy and permanency of so-called physical laws and theories is unfounded ; that very probably the greater part of the so-called axioms of modern physics will be swept away as untenable ; that theories of natural phenomena, apparently the most comprehensive and conclusive, are merely provisional ; at present finality in this region is neither visible, attainable, nor clearly conceivable, and that after all there may be methods of spiritual verification which, within their condition, scope, and use, may compare not unfavourably with the methods so confidently depended upon in physical research.”

ORDINARY MEETING, DECEMBER 3, 1883.

J. A. FRASER, ESQ., M.D., INSPECTOR-GENERAL OF HOSPITALS,
IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

HON. CORRESPONDING MEMBERS :—Professor Maspero, Cairo ; Professor E. de Naville, Geneva.

MEMBERS :—T. Barber, Esq., Sheffield ; E. Bannister, Esq., London ; G. Fawcett, Esq., Wales ; J. Horne, Esq., M.D., Mauritius ; Rev. J. Kay, D.D., Edinburgh ; Rev. W. M. Lawrence, D.D., United States ; Lieut. W. H. Turton, R.E., St. Helena ; Rev. W. Tyson, South Africa ; C. S. Wilkinson, Esq., F.G.S., F.L.S., New South Wales ; A. Wylie, Esq., LL.D., Scotland ; P. B. Walker, Esq., M.R.S., Mem. Geog. Soc., N. S. Wales ; Rev. R. Collins, M.A., Huddersfield.

ASSOCIATES :—J. F. Anderson, Esq., Mauritius ; Rev. M. Archdall, M.A., N. S. Wales ; T. Barkworth, Esq., Essex ; Rev. H. A. Birks, M.A., Cambridge ; Rev. G. C. Blaxland, M.A., London ; W. Bowen, Esq., F.R. Hist. Soc., F.P.S. Lond., Trinidad ; T. Brindley, Esq., N. S. Wales ; Rev. J. F. Fotheringham, M.A., New Brunswick ; Rev. C. J. Garrard, M.A., Isle of Wight ; J. P. A. Garvin, Esq., N. S. Wales ; J. P. Goldsmith, Esq., Plymouth ; Prof. G. Stanley-Hall, A.M., Ph.D., United States ; Ven. Archdeacon W. C. Harris, M.A., New Zealand ; G. Houston, Esq. (LIFE), Scotland ; H. Hutton, Esq., J.P., South Africa ; Rev. E. D. Irvine, A.M., United States ; J. Jay, Esq., United States ; Rev. W. F. Kimm, M.A., Norfolk ; Ven. Archdeacon R. L. King, B.A., N. S. Wales ; Rev. Canon H. S. King, A.M., N. S. Wales ; Professor J. W. Lane, M.D., United States ; H. W. Monk, Esq., Canada ; C. M'Millan, Esq., M.D., Italy ; Professor C. M. Moss, Ph.D., United States ; Rev. President J. L. Porter, D.D., LL.D., Ireland ; Rev. Prof. C. Pritchard, D.D., F.R.S., Oxford ; W. Renner, Esq., M.D., M.R.C.S., W. Africa ; Rev.

R. R. Scrope, United States ; J. W. Stevenson, Esq., United States ; Ven. Archdeacon L. H. Streane, M.A., Ireland ; Rev. Canon A. H. Stephen, M.A., N. S. Wales ; Rev. W. H. Sharp, M.A., Warden, St. Paul's Coll., N. S. Wales ; Rev. Principal F. A. P. Shirreff, M.A., India ; Rev. Prof. R. B. Welch, D.D., LL.D., United States ; Rev. F. B. Tress, N. S. Wales ; Rev. J. Woolcock, Devonshire ; J. B. Wilson, Esq., N. S. Wales.

HON. LOCAL SECRETARIES :—Rev. Professor Cornish, LL.D., Montreal ; Rev. W. Wagner, LL.D., Philadelphia ; Rev. T. Hutchinson, M.A., London.

Also the presentation to the Library of the following works :—

"Transactions of the Royal Society."	<i>From the same.</i>
"Transactions of the Royal United Service Institute."	"
"Transactions of the Royal Geographical Society."	"
"Transactions of the Royal Colonial Institute."	"
"Transactions of the Geological Society."	"
"Transactions of the Society of Biblical Archæology."	"
"Transactions of the American Geographical Society."	"
"Studies in Anthropology." By Rev. J. Woolcock.	<i>From the Author.</i>
"Harmonies in Tones and Colours."	"

The following paper was then read by the Author :—

RECENT EGYPTOLOGICAL RESEARCH IN ITS BIBLICAL RELATION. By the Rev. HENRY GEORGE TOMKINS, Member of Council of the Society of Biblical Archæology.

VERY great and important have been the advances of Egyptology, both in the field and in the study, since my paper on the *Life of Joseph* was read to our Institute on the 3rd of May, 1880.

Three years before, on the 16th of April, 1877, I had communicated something on the *Life of Abraham*, illustrated by *Recent Researches*, which was afterwards expanded into an illustrated volume, entitled *Studies on the Times of Abraham*.* My endeavour has been fairly to lay the Biblical narrative side by side with other records and parallel information derived from Egyptian, Chaldæan, Assyrian, and other ancient sources, and to indicate the results arising from this comparison.

* Bagster, 15, Paternoster Row. I am preparing a new introduction to this work, bringing the subject down to the latest date.

The great historical personage next to Joseph in this survey would, of course, be Moses; and, indeed, I have been more than once invited to say something of the Exodus. From this, however, I shrank for the time, looking for more light, and meanwhile striking out some thoughts on *Biblical Proper Names, Personal and Local, illustrated from Sources external to Holy Scripture*. And now we cheerfully await further tidings from the Land of Goshen and from the northern outskirts of the Sinaitic peninsula. The Geological Expedition of the Palestine Exploration Committee will doubtless bring rich spoils of knowledge home, and the well-directed and successful excavations of the more recent Egypt Exploration Committee can scarcely fail, with God's blessing, to add quickly to the invaluable and certain results which we shall have before us this evening.

We have to thank the sagacity and well-trained zeal of M. Naville for these results, with the generous countenance and counsel of Professor Maspero, and I am most happy to say that M. Naville is now an hon. member of the Victoria Institute. Allow me to quote a few words from a letter, dated "Malagny, near Geneva, Sept. 15th," in which M. Naville says,—“While I was in Egypt you wrote to me once to ask me whether I should like to be inscribed among the honorary members of the Victoria Institute. I should be very glad and very thankful to be inscribed, having great sympathy for the work of that Society.”

And now I will try to bring into our store some fresh gleanings in the harvest-fields of Egyptology, especially from Deir-el-Bahri in the mountains of Western Thebes, and from Tell-el-Maskhuta, in the ancient “Land of Râmeses.”

The Great Discovery of Royal Mummies at Deir-el-Bahri.

Memorable and important as the great discovery of royal mummies in their dark hiding-place at Deir-el-Bahri has been in its general results, the points are not many in that long roll of Pharaohs which give any light on Biblical antiquity. Yet we may measure the seven centuries there represented, from about 1700 to about 1000 years before Christ, by landmarks of Holy Scripture. For four eras are distinctly marked, namely:—

- I. The War of Liberation against the Shepherd-Kings, or Hyksôs.
- II. The XVIII. Dynasty.
- III. The XIX. Dynasty.
- IV. The XXI. Dynasty.

If George the Syncellus is right in saying that Aphôphis, the shepherd-king, was the Pharaoh in whose time Joseph ruled, then the most ancient Egyptian prince found at Deir-el-Bahri was a contemporary of Joseph, who may himself well have looked on the countenance of the patriot Râ-sekenen, the Very Valiant, the calm placid features and rather oblique eyes, whose "counterfeit presentment" is given by the mask of the mummy-case which hides the reality.

The celebrated sphinxes of Sâh, discovered by Mariette, carry the royal titles of Aphôphis (Apepi), and have been considered as bearing the stern visage of Joseph's Pharaoh. I believe Professor Maspero doubts (Perrot et Chipiez, *Hist. de l'Art*, i. 683) whether the inscription is not a usurpation of a still older king's monument. And Lepsius has expressed the opinion that the sculptures of Sâh are to be assigned to the oldest, not to the latest, Hyksôs period. But this does not affect what I have said of Joseph and Râ-sekenen-tâi-aân, who began the war of liberation in earnest, which Ka-mes and Aah-mes carried to a prosperous end.

I would earnestly plead for those most interesting excavations in the Delta which will soon, we hope, bring to light fresh monuments of this important period, and enable us to know the certainty of these great problems affecting Biblical, no less than Egyptian, history, and the tantalizing cross-questions which the Nile and the Euphrates are asking of one another.

Meanwhile, the solemn "statue of flesh," the bodily frame of Râ-sekenen the Valiant, has in good likelihood seen Jacob's beloved son, and perhaps Jacob too, and bears witness to the fashion in which those patriarchs may reappear to the eyes of their descendants with names and titles written in hieroglyphic by the scribes of Joseph's household. I think this a very interesting thing. I do not suppose any mummy has been found so nearly corresponding with Jacob's burial as this: and if Joseph's mummy were recovered it would very possibly be in such a case as this is. All these touches bring home to us the inimitable "Egypticity" of the Biblical narrative, unfeigned as it is in its antique simplicity.

The next period, that of the eighteenth dynasty, was represented in the sepulchre of Deir-el-Bahri by its greatest monarchs, Aahmes the founder, who chased the aliens out of the Delta as far as Sharuhen (north-west of Beersheba); Amenhotep I. (in his garlands of bright flowers); Thothmes I., who pushed his victorious arms as far as the Syrian river-land of "Naharina"; his son Thothmes III., the "little corporal" of Egyptian history, whose memorable conquests are detailed

in those invaluable "Lists of Karnak," which give us hundreds of local names in Palestine and Syria, agreeing well with those of places named in the Biblical history of later times. "It is well to remark here," says M. Rhoné, "that about 1,600 years before Jesus Christ,—that is to say, some centuries before the Hebrews,—the *promised land* was an Egyptian possession, and it is to be believed that if the tribes of Israel succeeded in gaining possession of it, this could not be but by virtue of the troubles which, some centuries after Thothmes III., caused the dismemberment of the empire of the Pharaohs." (*Le Temps*, 31 Mai, 1882.) I should mention that the mummy of Thothmes III. was found dreadfully broken, and that the stature of that great Pharaoh was only about 5 feet.

The shepherds and herdsmen, no less than the fishers and fowlers, of the eastern lowlands and marshes of the Delta were let alone by the native Egyptian Pharaohs of the splendid eighteenth dynasty in "their useful toils, their homely joys and destiny obscure," as we may well believe; and Joseph had indeed given sage advice to his brethren in bidding them avow their calling, so gaining from the friendly shepherd-king "the best of the land, the land of Goshen," for their occupation. The field of Zoan is one which, God willing, is to be explored next spring at the instance of the Committee of the Egyptian Fund. The way taken by the Israelites in their Exodus was the way taken by our own forces as they marched to Cairo, Tel-el-Kebir being the place where the crowning victory was obtained; while the spot where our artillery were first planted and brought into action was the ruin-heap of the ancient Pi-Tum, about 12 miles from Ismailia. Due east of that place is the ancient road discovered by the Rev. F. W. Holland, and I hope it will not be long before some observations are taken of that road.

It was along the southern border of this land of Goshen that the great military road of the Pharaohs led out on the sandy, stony waste beyond. We must never forget that the early kings of the great twelfth dynasty, before the domination of the Hyksôs, had strongly fortified their eastern frontier by a towered wall, from which their sentinels looked out on the dreaded desert. A most important fortress was the key to the great entrance and outlet by which the kings of the eighteenth and succeeding dynasties led out their armies and brought back their captives and spoils. It was called Zar (or Zaru) ; and must have been at least as old as the twelfth dynasty, if not the sixth, since a curious treatise

in praise of learning, of such date, was "made by a person of Zaru." (Rec. viii., 147.) Zar was called by the Egyptians "the Sentinel at the Gate of Egypt." Brugsch has so positively asserted the identity of Zar with Zoan (Tanis), that it has been widely taken as granted. But De Rougé identified Zar with Sellé near lake Timsah, and this seems much nearer the true mark. For Dr. Dümichen, in his history of Egypt (in Oncken's *Allgemeine Geschichte*), has avowed his belief "that the identification of it with Tanis-Zoan, so strongly maintained by Brugsch, absolutely cannot be brought into accordance with the data found in the Egyptian texts as to its situation." And I think he has proved his point, as, indeed, had Dr. Haigh in 1876 (*Zeitschrift f. äg. Spr.*, p. 54). Now this brings us to a very interesting Biblical interpretation. In Gen. xiii. 10, we read that "Lot lifted up his eyes and beheld all the plain [*kikkar*] of Jordan, that it was well watered everywhere (before Jehovah destroyed Sodom and Gomorrah), like the garden of Jehovah, like the land of Mizraim when thou enterest Zar." The name זר may very properly be so read, as proposed by the learned Dr. Haigh in 1869 (*Zeit.*, p. 5), and in 1876 (p. 54).

The sandy wastes of the Shasu-land came up to the walls of Zar, but within the traveller saw opening before him the goodly green levels, irrigated by numberless canals and water-courses, the watered field of Zar (*Sekhet en Zar*), so flowery and beautiful that such a region was called in Egypt "the divine watered land" (*Sekhet Nuter*. Brugsch, *Dict. Geog.*, i. 13), as by the Hebrews "the Garden of Jehovah." This, then, was the view of "the land of Mizraim when thou enterest Zar," which represented the former glories of the warm, palmy Jordan plain "before Jehovah destroyed Sodom and Gomorrah."

Well did Moses know that familiar sight of "the land of Rameses," as it had greeted his eyes on his return from his long exile in wild Arabia. Dr. Dümichen takes for granted the Egyptian Zar as intended in Gen. xiii.

And now we leave the eighteenth dynasty, and come upon the celebrated kings of the nineteenth. At Deir-el-Bahri was found a broken coffin which had held the mummy of Rameses I., the founder of the new line, who reigned only six or seven years.

For Bible students the nineteenth dynasty is supremely interesting.

If Dr. Ebers is right, it was in the reign of Seti I., the son and successor of Rameses I., that Moses was born, and the "Pharaoh's daughter" was the celebrated and beloved

queen, Seti's daughter, whose name Dr. Ebers reads T-mer-en-

Müt, , answering to Thermüthis, the name

given by Josephus (*Antiq.*, ii. ix. 5; Ebers, *Durch Gosen*, &c., 2nd ed., 539).

Eusebius gives Merris as the name of the Princess. It is true that a daughter of Râmeses II. was called Meri, but the date would not agree so well. I have a profile portrait. If Dr. Ebers be right, this is the likeness, and, doubtless, a faithful one, of Pharaoh's daughter; and a very good-looking Princess she was.

The unequalled grandeur of the sepulchral halls of Seti I., in the Valley of Kings, is renowned, especially in England, where his grand translucent sarcophagus of alabaster (arragonite) rests in the Soane Museum. That was an astounding discovery when Dr. Emil Brugsch looked in and seemed, by the light of his lantern, to see the Pharaohs lying in such profusion that there was hardly one of the first rank in history who did not confront the astonished explorer. For Belzoni had found no Seti I. The venerated body had been taken away for safety, as we now know, and was found at Deir-el-Bahri, where his innocent child-like mask looked calmly at the intruder with broad dark eyes, as you see it in the photograph. The face looks like a baby's. It is almost always a surprise to compare the profile with the full face of an Egyptian sculpture. The full face is so much wider than one would suppose; while the profile is more delicate, and yet more decided and marked; often having a sub-aquiline nose, so that you would not suppose it could represent the same countenance as seen full-faced. The whole family of five generations showed perfectly well that they were a totally different people from the Egyptians, and were almost certainly descended from the Hittites. In the British Museum you may see a delightful head of Seti, with that engaging, frank, and bright expression so well expressed in Egyptian sculpture.

It was in reality Seti who dug the Sweet-water Canal from the Nile along the Wady Tumulât to Lake Timsah, and made the land of Râmeses green and lovely with the fertilising Nile rills. But the young Râmeses, of great Pharaonic birth from his mother Tuäu, was exalted from the cradle, since by his right the throne was established, and we need not wonder at the glory being given to him.

Now we will follow the living Seti, with his chariots and splendid army, in his first royal expedition over his eastern

frontier to chastise the insolent Shasu, the Bedouin hordes of the age.

He sweeps through the open portals of the twofold fortress of Zar, across the canal where crocodiles disport themselves, along the ancient road of the desert which our lamented traveller, the late Rev. F. W. Holland, found stretching "due east from Ismailia," far away over deserts and through Wadies, strewn abundantly with flint-flakes, with here and there a beautiful arrow-head of flint, "the route of Abraham from the Negeb into Egypt," as he wrote to me in May, 1880, adding:—"It is a very remarkable road, evidently much used in ancient times, and it is curious that it has remained unknown."

I trust that this important road will be soon carefully explored, for I think it quite within hope that the several fortified watering-places represented in Seti's great tableaux at Karnak as the halting-places in the desert may yet be truly identified.

This expedition of Seti's first year gives us as his object of attack not only "the land of Canaan" (Kanāna), but very notably "the fortress of Canaan," and in the October (1883) "Statement of the Palestine Exploration Fund," my friend Captain Conder, R.E., gives a very probable identification of the spot marked by the very name, south-west of Hebron (*Great Map*, sheet xxi., *Name Lists*, p. 399) Khūrbet Kan'ân, the ruin of Kanaan, Heb. כנען). I consider this an excellent discovery, but the advance was made not (as Captain Conder says) "from the vicinity of Gaza," but by that ancient route found by Mr. Holland, and in the latter part, perhaps, much in the line followed by the ever-regretted Palmer in 1869 (Palestine Exploration Fund, 1870). "The ruin occupies a knoll in a very important position on high ground. The two main roads to Hebron, one from Gaza by Dura (Adoraim), one from Beersheba on the south [this was Seti's route] join close to the knoll of Khūrbet Kan'ân, and run thence, north-west, about one and a half mile to Hebron. West of the ruin is 'Ain el Unkūr . . . which issues from the rock and gives a fine perennial supply, forming a stream even in autumn." I wish I could quote the rest of this most interesting description.

We have now approximately the starting-point, much, at least, of the route, and actually this point of attack of Seti's celebrated expedition. In his tableau we see the fort on its rocky knoll and the stream forming a pool in the valley; and the Shasu making their submission to the Pharaoh. It is curious that this particular spot, where the old name still

sprouts unchanged from the soil, should be the only local relic of the great name of the "land of Canaan," yet itself (as it seems) not mentioned in the Bible. It is in the triumphal return of Seti that we see the fortress of Zar and the outlying fortified wells of the desert.

I must deny myself the pleasure of entering on the war against the Kheta (Hittites) at Kadesh of the land of Amār

() , i.e., of the Amorites. Here we have such

cities "walled up to heaven," and tall warriors, as those whose sight melted the waxen hearts of the Hebrew spies. But this is an old story, and I seek for newer tidings. We will pass on.

Râmeses, the son of Seti, was brought up in court and camp, a Pharaoh and a soldier in earnest; and Moses was trained "in all the wisdom of the Egyptians," "mighty in word and deed," although he refused the proud title of "Son of Pharaoh's daughter," and clave to his own people.

The fine face and tall six-foot stature of Râmeses, so well known to Moses, are almost as familiar to us. Of all his likenesses surely none can be more beautiful than the exquisite statue in the Museum of Turin, where you see him enthroned in all the springing vigour of his youth. More than sixty years later the aged frame was embalmed and entombed, to come forth more than three thousand years later still to the light of day. Three times had he been translated for greater safety, and at last laid with his father and grandfather in the narrow gallery of the priest-kings of Thebes. I have brought hither some likenesses of the great Rameses; for, well known as he is, many of us may not be familiar with the beautiful statue of him at Turin, which ranks as the first Egyptian statue in Europe. This [showing it] is a photograph of the statue. It is carved in a material harder than marble, but not a limestone. I should also say that I have the profile from Rosellini—a very good profile of Rameses in his younger days. Here also is a photograph of the mummy, and here is a copy of the portrait which is beautifully carved in wood on the mummy case. I must halt here to say that this was said not to be the mummy of Râmeses II., and there was a controversy in the *Times* as to whether it was really Râmeses the Second or the Twelfth, a later Pharaoh. The doubt arose from the coffin in which the mummy was found. But there were discovered on the wrappings of the mummy hieroglyphic inscriptions in marking-ink which made it perfectly plain that it was

indeed Rameses the Second. But, as to the mummy-case, it was a new one supplied by a Pharaoh whose history is one of great interest. He was of the XXIst Dynasty, the celebrated founder of that line. A very talented lady learned in Egyptology, Miss Edwards, suggested that the face found on Rameses's mummy-case was that of this King Hérhor. I put in juxtaposition the delicate, refined profile of the Priest-king Hérhor from Rosellini, with a photograph of the face on the coffin of Rameses II., and I think any one will say that the profile goes along with the full face of the former. If that be so, it gives a very interesting portrait in the first style of Egyptian carving, of King Hérhor, the founder of the XXIst Dynasty, of the Priest-kings of Thebes.

But with Râmeses was not his son Merenptah, the Pharaoh of the Exodus. Whatsoever the manner of his death at an advanced age, he was not found with his fathers.

Some interesting points bearing on the Biblical history of this great time may be mentioned here.

Merenptah was the thirteenth son of Râmeses.

Kha-em-uas, an elder son of his royal mother Isi-*nefert*, had been co-regent with his father, but had died during his lifetime, on which Merenptah was exalted to his late brother's place. Kha-em-uas was a religious devotee, and chose to be buried in an Apis-sepulchre where Mariette found his remains.

A similar cast of character marked Merenptah, of whom M. Lenormant writes (*Hist.*, ii. 281), "he was neither a soldier nor an administrator, but a spirit turned almost exclusively towards the chimæras of theurgy and magic, resembling in this respect his brother Kha-em-uas. When the book of Exodus makes him reside in Lower Egypt, a little way from the land of Goshen, it speaks with the most precise historic truth, for this prince dwelt almost constantly at Memphis or Tanis. And the Biblical book is not less exact when it depicts him surrounded by magician-priests."

The monuments agree with the Bible in showing that Merenptah lost a son, of his own name, co-regent with himself, and presumably his eldest son. This is testified by an inscription on a statue of Usertesen I. at Berlin (Ebers, *Durch Gosen*, &c., 90, 541).

When we remember the exalted rank of the Hebrew Moses, and the previous greatness of Joseph, it is most interesting to find such a record as Mariette has described in his *Catalogue of Abydos* (p. 421). Some sepulchral inscriptions show that Merenptah had a Prime Minister bearing the true Egyptian names Râmeses-em-pi-Râ Meri-An, who was nevertheless an

alien of Semitic origin, the son of the foreigner Iupaää



The same officer is afterwards called "beloved of Râmeses, Meri Amen" (Râmeses II.), and here his native name comes out: "Ben Matsana of the land of Tsar Basuna." On the whole series of names here recorded Mariette remarks: "See, then, in a group of seven inhabitants of Abydos, three Egyptians, three Semites, then a seventh person of Syrian origin with two surnames, one Egyptian, the other Semite."

I would apply this to illustrate the adoption and advancement of Moses at the same period, and the Egyptian names Petesêph ascribed to Joseph by Chærêmôn, and Osarsiph assigned by Manetho to Moses (Josephus, *Con. Ap.*, i. 32; i. 26, 29).

These I have elsewhere shown to be genuine Egyptian names (*Life of Joseph*, Tr. Vict. Inst., May 3, 1880, p. 8).

Thus the likelihood of these statements emerges into light as we advance in real knowledge of the countries and periods in question.

The name Osarsiph (Ὀσαρσιφ, Ὀσαρσυφ) "from Osiris the God of Heliopolis," Manetho tells us, was the original name of Moses, who was a priest, a Heliopolitan by birth, afterwards called Moses when he had joined the Hebrews.

Now Josephus, in quoting this, contends that it is not probable that Moses was first called Osarsiph "while his true name was Moses, and signifies a person preserved out of the water, for the Egyptians call the water Mōu,"



See on "Moses" Ebers, *d. Gosen, &c.*,

2nd ed., 539. I will not here discuss the name משה. But the more I think on "Osarsiph" the more does the name grow in interest. For it is a veritable name of the great god

Osiris (𓂏𓂐𓂑𓂒) as dead, and raised from the dead out

of his sepulchral chest; as it is said in an Egyptian religious papyrus: "Come! be resuscitated, *Osir-sapi!*" (*Devéria, MSS. du Louvre*, 172).

Now what more natural than that the Egyptian princess, seeing the little ark (or chest) floating like that of Osiris on the Nile, and opening it to find the babe living and weeping, should say in her playful tenderness: "Return to life, little Osir-sapi!" Indeed, it was on this Tanitic branch of the Nile, they said, that Osiris was committed to the water when slain

by Set his brother,—the very stream where Thermuthis in all likelihood found the Hebrew babe among the papyrus stems. The alternative names are quite Egyptian. Well might Moses be called Osarsiph and Mushé, and peradventure Tisithen too, as Manetho says.

It is worthy of notice that among the thousand relics of Deir-el-Bahri was found a beautifully-made oblong box of papyrus like a very neat little hamper, but with the papyrus-leaves so closely joined that it might well be made water-tight by bitumen. It has a carefully-fitted lid. Doubtless the pious love of the faithful Hebrew mother laid her handsome babe in such a floating ark as this.

I need not mention that every noun used in the story is a genuine Egyptian word. The readers of Canon Cook's admirable essays in the "Speaker's Bible" are familiar with this (vol. i., 484). One other relic of great interest found in the dark hiding-place of Deir-el-Bahri reminds us of the history of the Israelites. It is the large, elaborate, and beautiful tent of leather used to form the darkened chamber of the funereal barque for the obsequies of Queen Isi-em-Kheb, the last royal personage committed to that sepulchre. This has been carefully described and represented in colours by Mr. Villiers Stuart in his work "The funeral Tent of an Egyptian Queen." The beautiful rose-coloured leather, said to be gazelles' skins, may well recall to our memory the "rams' skins dyed red," of which one of the coverings of the sacred tabernacle was made, and this fine example of Egyptian work bears witness to the skilful use of such a material for exactly such a purpose.

Like Seti I. and Râmeses II., his grandfather and father, Merenptah is well known by face to students of Egyptian antiquity. Handsome and lordly features he inherited, but a haughty ungenial expression mars their beauty. The plates in Rosellini are most careful copies of the sculptures. It is remarkable that the Egyptians never give the eye in proper perspective as an English artist does. For this we must make allowance in looking at Egyptian reliefs or pictures.

Pithom and Râmeses.

Chabas and others have argued that the fortified arsenal Râmeses must have been built for the only Râmeses (namely the second), who lived long enough to suit the data of the life of Moses.

The able treatise of Chabas on the nineteenth dynasty was by most Egyptologists thought conclusive.

Now Lepsius had found in 1849 very strong reason to conclude that a place in the Wady Tumulât, by the old Sweet-water Canal, called Abû-Keshêb, was the store-city of Râmeses, and so it has seemed till this year. But the important discoveries of M. Naville have now fixed for us absolute points of date and place by which our drifting opinions must be anchored fast.

I will try to make clear these points as shortly as possible for those not versed in the intricate details of Egyptian research.

About twelve miles from Ismailia westward up the shallow valley of the Sweet-water Canal is a place of ruins now called Tell-el-Maskhuta. It is the same place called Tell-Abû-Keshêb, the reputed Râmeses, and here on this mound our horse artillery planted their guns in the first action fought on the westward movement towards the more renowned Tell-el-Kebîr on the 24th of August, 1882.

From monuments taken thence long ago to Ismailia, M. Naville was convinced that the place was not Râmeses, but Pithom (פִּתּוֹם) Pi-Tum, the sanctuary of Tum, the setting-sun god of Egypt; and this he confirmed by fresh monuments which he brought to light. For the name occurs in the inscriptions many times as that of the place, and the local name of Râmeses (Pi-Râmessu) not once. Although the illustrious veteran Lepsius still upholds his opinion that the place is Râmeses, I cannot but believe that when M. Naville has produced in detail his evidence it will be clear that of the twin-cities this is Pithom.

But the locality in which it stands is scarcely less interesting in another light; for it is many times designated by the

inscription found there as Seku, or Sekut (), identified by Brugsch and Naville with the Succôth (סֻכּוֹת; LXX, Σοκχῶθ) of the book of Exodus.

Now I know that at first sight this seems a strained identification, and it needs to be explained and justified. This, however, can be done. I can now only refer to the instances cited by Brugsch in the *Zeitschrift für ägyptische Sprache* 1875, p. 7, which sufficiently prove that the lasso-shaped hieroglyph , generally considered to represent the sound of θ in Greek, or *th* in the English word *thin*, was sometimes equivalent to the sibilant expressed by ס in Hebrew.

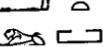
The tendency to hiss the θ sound is exemplified in the last (Oct. 1883) Statement of the Palestine Exploration Fund, p. 235, where Mr. Pickering Clarke tells us that the name of

the well *Themed* was pronounced by his Arabs "*Summed*," a precisely similar case to  סכת. In Exodus the LXX give Σοκχῶθ, but *translate* the סכות of Genesis xxxiii. 17, Σκηναί. Perhaps, after all, the Egyptian name was not the Semitic plural meaning "tents."

The temple, then, gave the name of Pi-tum, and the ordinary or civil name of the place was Sekut. Thus we have here the first local names of the Exodus that have yet been surely ascertained, the eastward of the twin store-cities and the first halting-place of the Israelites on their eastward march, not harassed but helped and urged onward by the terrified Egyptians.

But this is not all, for another well-known name cleaves to the same place.

In the book of Genesis xli. 28, we are told that Jacob "sent Judah before him unto Joseph to direct his face unto Goshen, and they came into the land of Goshen. And Joseph made ready his chariot [probably at Zoan] and went up to meet Israel his father, to Goshen." But the LXX version written in Egypt, tells us that Judah went to meet Joseph at Heroöpolis, in the land of Ramesses, and that Joseph met Israel, his father, there. The Coptic version gives the name of the place as Πεσωε, that is, Pithom, and it turns out that all are right, for at Pi-tum M. Naville found Roman inscriptions bearing the name ERO, ERO CASTRA, the (Roman) camp Ero, and ΗΡΟΥ in Greek. Therefore this is the place in the land of Goshen, the land of Râmeses, where Joseph and his father met. The Greek ΗΡΟΥ well represents the Egyptian

Aru, plural of  magazine, or storehouse; and this is the true derivation of the name, as M. Naville believes from the use of the word in the inscriptions on the spot.

This not only represents the sense of the word rendered "treasure-cities" (מסכנות), but it is entirely borne out by the structure of the place.

For this arsenal of Râmeses II. is enclosed by an enormous wall of crude brick, containing in its circuit only a little more than twelve acres of ground; and this straitened space is occupied in a strictly military manner by storehouses, excepting only the temple and its small precinct. The storehouses had no access through their side-walls; but only from their vaulted roofs, where the grain was put in according to the representations of Egyptian granaries engraved by Wilkinson and others (*Anc. Eg.*, ed. by Birch, i. 371). As M. Naville has said:—"Armies which went to Syria and Mesopotamia had

the desert to cross, and were obliged in consequence to take with them the necessary food." Here, then, in "the best of the land," "the land of Goshen," still further irrigated and made fruitful as "the land of Râmeses," the troops could take up their commissariat stores just before issuing through the gates of the great frontier fortress of Zar on the waste lands swept by the hordes of marauding Shasu, the scene of Israel's wanderings and trials. The results of careful examination at Tell-el-Maskhuta correspond singularly well with the history given us in the Bible. The place was built by Râmeses II. There are no earlier monuments than his. It was Pi-tum. It was a fortified store-city, the place of military supplies nearest to the walled frontier-line of Egypt: the first halting-place of the Israelites, Succoth. And there are certain minute particulars which stamp the story on the structure itself. M. Naville found "very thick brick walls, remarkably well built, with *mortar* between the layers of brick," &c. This was not the usual mode of building with sun-burnt brick in Egypt. I quote from the fine new work of MM. Perrot and Chipiez on "Ancient Art" (vol. i., *Egypte*, 115):—"As to crude brick it does not differ perceptibly from *pisé* [which in Devon I should translate *cob*]; placed one on another, after undergoing only an incomplete drying, these bricks under the action of pressure (*tassement*), and of atmospheric influences, finish by no longer forming anything but a homogeneous mass, where one does not even distinguish the courses of work." But at Pithom M. Naville found "*mortar* between the layers of brick." This at once brings us to the Israelites whom the Egyptians made "to serve with rigour; and they made their lives bitter with hard bondage in *mortar* (חמר), and in brick," &c. (Ex. i. 13). Here [exhibiting it] is a photograph of bricks of the time of Rameses, and stamped with his royal mark. These contain bits of chopped straw.

Now, as for the brick itself, we learn that the straw was withholden from the Israelites, and they had to gather it for themselves, and yet to do the same tale of work (Ex. v.). "And they were scattered throughout all the land of Mizraim to gather *stubble* for *straw*," that is, to make the necessary chopped material. The word rendered *stubble* is an Egyptian word (𓂏 = Eg.,  𓂏). K&U, *arundo, calamus*), used for the reeds of which the scribes made their pens. And this is just what M. Naville found:—"I may add," he writes, "that some of them (the bricks) are made with straw; or with *fragments of reed*, of which traces are still to be seen, and some are of mere Nile mud, and without any straw at all." So that

even the reeds of the marsh ran short, or the time to gather them.

But there are some topographical traces which lead beyond Succoth on the route of the Exodus. A large and most important tablet of Ptolemy Philadelphus gives indications of other places, and among them of Pi-keheret, which seems to be the *Pi-ha-khirot* (פיהחירת) of the Exodus. And now we must patiently look for further results from the labours of those who are continuing M. Naville's researches for the Egypt Exploration Fund Committee, and you will not think me unreasonable in appealing for support to the Committee in that work, so needful to fill up the measure of Biblical archæology.

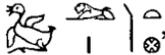
The Palestine Fund has already accomplished grand things, and is still engaged in a suspended survey on the east of Jordan, of which Captain Conder, R.E., has just published a most interesting account in his volume, *Heth and Moab*. The Egyptologist has already come to the assistance of the surveying officer, as we know, and it is clear that in the neglected ruin-heaps of Goshen, and the unexhausted quarry of monuments in "the field of Zoan," we may hopefully expect to find materials for the further elucidation of Israel's sojourn in the land of Mizraim and divine deliverance by the hand of Moses.

It is not the scientific explorer, nor the assiduous archæologist, who will lightly speak a word of doubt, much less of supercilious rejection, while he ponders the sacred archives of the Bible. "Always it speaks," says Bishop Temple, "with the authority of its origin. I have read many books," he continues, "which do much for the human intellect and for the human spirit, and have felt that I have learned much; and still feel that these books, though they are my teachers, are not my rulers; that, though they instruct me, they cannot command me. But when I turn to the Word of God it takes me straight, as it were, into His very presence, and gives its message there by an authority of His and His alone."

These are the solemn words of one who has not been easily inclined to take sacred things for granted. Let me add, for my own part, the witness of an honest and diligent student of the earliest historic antiquity. The most searching and microscopic examination only leads to higher degrees of conviction that the history is recorded by Moses; that the revelation which transfigures this history is supreme and divine, and "able to make us wise unto salvation through faith which is in Christ Jesus." "If ye believed Moses," said our Lord Himself (St. John v. 46), "ye would believe me; for he wrote of me. But if ye believe not his writings, how shall ye believe my words?"

The **AUTHOR**.—Before the discussion commences, I wish to read a letter from Monsieur Naville, to whom I sent a proof of my paper. After a careful perusal of it, Monsieur Naville, in the commentary he has forwarded, only takes exception to three or four points. Upon one or two of these you will see that I have not expressed myself with any degree of certainty, and when the discussion is in print I hope to reply to Monsieur Naville's letter in detail. It is dated "Malagny, near Geneva, November 24," and contains the following remarks :—

P. 74. It seems to me beyond any doubt that the so-called Hyksôs monuments are of an earlier date. I think anybody who has seen the ruins of Sâh will come to the same conclusion. They belonged to a group of statues and other monuments of the twelfth and thirteenth dynasties, which were together at the entrance of the great temple, and several of which have been left on the spot. Nearly all the monuments have been usurped later, sometimes twice over, by kings of the nineteenth, twentieth, or twenty-first dynasties, who did the same as Apepi had done before them. If Apepi had erected the sphinxes which have been attributed to him, he would not have engraved his name so negligently on one of the shoulders, so that it might easily be rubbed off.

P. 77. I do not agree with you on Seti I. having dug the canal of the Ouadi Tumulât. At present we have not found anything more ancient than Rameses II., and it is likely that he built the cities and dug the canal at the same time. As far as I can judge at present, the route of Seti I. is not through the Ouadi Tumulât; it is the northern route which went through Tanis in the direction towards the Mediterranean and Gaza. It is on that route that we shall find the site of , and I think I know where, only I do not feel at liberty to name the spot without quoting the text on which my evidence rests. The Israelites issuing from Succoth would not come near Zar.

P. 74. I should not say that in good likelihood Râ-sekenen had seen Joseph, and, perhaps, Jacob. We have no reason to assail the testimony of the Syncellus, saying that the Pharaoh of Joseph was Apepi; but the war which broke out between the two kings must have been after Joseph's death. The Scripture describes the time when Joseph lived as a time of peace, and it is not likely that there was much intercourse between two sovereigns of a different race altogether.

P. 80. As for the Egyptian name of Moses, I believe it to be 
or , which means a child, a boy. The Hebrews transcribed it in a form which gave to the word a Hebrew meaning, as it is very often the case. As for the name of Osarsiph, it is very possible that it has been given to Moses, but I should think not when he was a boy, but late in life, when he had been instructed in the sciences and religion of the Egyptians

which must have given him the rank and title of an Egyptian priest. Besides, in the myth of Osiris the child is always called Horus. I was very much interested in the name of Iskhut, taken from Esarhaddon's campaign, which seems to correspond very well with Succoth. Tell el Masxût is not an old name. It means the tell of the *statue*, and the name is derived from the granite monolith which has been known for many years.

The CHAIRMAN (J. A. Fraser, M.D., Inspector-General of Hospitals).—The very pleasant duty now devolves upon me of asking you to accord a vote of thanks to the author for his paper, as to the great merits and the interesting nature of which I am sure there will not be a dissentient voice. I am particularly interested in Egyptology; but, at the same time, can scarcely claim a special knowledge of the subject, being only one of those whom Professor Huxley has described as "Lookers-on at science and literature." Therefore I shall be glad if those present who possess that special knowledge will favour us with such remarks as may add to the information already laid before us. There is one thing I may add, that there are numerous and vast discoveries yet to be made in the interesting land of Egypt, of which at the present moment it may be said that the surface has merely been scratched.

Mr. W. ST. CHAD BOSCAWEN.—Upon a paper so full of sound and valuable research as that just read by Mr. Tomkins I can have but little to say. I think the Victoria Institute is to be congratulated on having so able and learned an Egyptologist as Mr. Tomkins as one of its members. Having read two or three papers written by him, I may venture the remark, that if everybody who undertakes to read an essay, before this or any other institute, would take as much trouble in the way of research as he has done, the proceedings of our learned societies would be worth twice or three times what they are at present. The researches now going on in the valley of the Nile are of the greatest possible interest, and those who have visited that portion of the globe may sometimes forget, as they pass by temple after temple, that when they have got beyond Cairo they are leaving behind them things of far greater interest to us Western people than the grander ruins of Thebes—of greater interest as connected with our own social life at the present day. We take up a newspaper or a letter from a friend, and we little think that the characters in which it is written or printed are now considered to have been first invented by the dwellers in the land of Goshen. Passing briefly to some of the points touched upon by Mr. Tomkins, I come to one which is brought forward in connexion with future explorations—namely, the gateway by which nomad people were brought into contact with the Egyptians—the outer eastern gate by which they found their way into Egypt. When they had thus found their way there, they had great influence on the civilisation of that country, and we cannot doubt the contact with Egyptian civilisation was a matter of great importance to the Semitic people. As to the influence of the Semitic people in Egypt, we have the best and most undoubted evidence. About the period of the eighteenth or nine-

teenth dynasty the Egyptian people underwent a great change, as great a change as we underwent at one time by our relations with France. The language of Egypt also underwent a considerable alteration, and a number of Semitic words were then introduced into that language, just as a large number of French words were inserted into ours, until at length it became a mark of good breeding to interpolate the literature of Egypt with Semitic words. This was one of the great effects produced by the contact that had taken place between Semites and Egypt. But there is another question that awaits solution on the part of those who wield the pick and the shovel, and that is, What was the influence of Egypt on the Semites, and what did the Jews bring out of Egypt? It is a very remarkable thing, with regard to Numbers and Exodus, that there are numerous strong proofs of the truly historical and Egyptological character of these books. It is important to notice the numerous indications of Egyptian knowledge exhibited by the writer of the Pentateuch, yet it is quite evident that the Levitical code was not based upon an Egyptian model, but rather was a revival and elaboration of the code common alike to all the great Semitic family in Arabia, Syria, and the Euphrates Valley. The discovery of the dyed leather funeral tent of the Egyptian queen proves the employment of such materials by the Egyptians at the time of the Exodus as are described in the Hebrew writings as used in the construction of the Tabernacle; but the Tabernacle itself must be regarded rather as a form of the great sacred tent common to the Arabs long before the time of Abraham; while the sacrificial code resembles in the most minute details that of the Semitic Babylonians. I think that, if the explorations that are to be undertaken are carried out on the site of Zoan, we shall have put before us more clearly and fully the influence that was brought to bear on the Jews. In the houses and lower parts of the town we may find records of the Jews, even at the time of the Exodus, and possibly some few specimens of the writing which the Jews brought out of Egypt, and which they borrowed from the Egyptians. There is one point on which I might be able to throw a little light derived from the evidence coming to us of the civilisation of Asia. The word Zar has been much spoken of in this paper, and attention is called to the passage which is quoted from the 13th chapter of *Genesis* :—“Lot lifted up his eyes and beheld all the plain (*Kikkar*) of Jordan, that it was well watered everywhere (before Jehovah destroyed Sodom and Gomorrah), like the Garden of Jehovah, like the land of Mizraim when thou enterest Zar.” It is a curious fact that, in the appendix to Mr. Rassam’s paper on the interesting discoveries recently made in Assyria, reference is made to that extremely fertile plain to the north of Babylon, which was watered by the Tigris and the Euphrates, and which was called by the word Akkadians Edina, and that this word was translated by the Semitic people as the word ZERU. Therefore, the peculiar expression which appears in the passage quoted as first referring to the Garden of Eden, and then to Zar, would seem to indicate a rich, fertile plain, and the entrance to such a plain from desert, when Egyptian civilisation was at its height. I would just refer to another matter. The expedition for which Mr. Tomkins has pleaded

to-night, and which the Palestine Exploration Fund is to carry out for the purposes of geological survey in the Jordan Valley, and the valleys leading down to the Gulf of Akaba, is said to be in connexion with the scheme of the Jordan Valley Canal. I have seen it so stated in different newspapers, and I ought to say that it is in behalf of research alone, and is in no way connected with any such scheme, having been proposed before the Jordan Valley mania came on. It was originally broached last year.* There is also another point connected with the explanation given as to Zoan or Tanis. I am glad to see Egyptologists are at last shaking down to some agreement of opinion as to the remarkable monuments at Tanis (Zoan), which seem to me to be undoubted relics of the Hyksós kings, and to resemble the monuments of Carchemish. There is a large slab at Jerabis representing Hittite deities standing on the back of a couchant lion. The fore part of the animal is exactly like the fore portions of the Sphinxes at San. Mariette has pointed out that the warlike head of the great Hyksós invasion was in all probability a band of Hittite warriors, leading on hordes of Semites, similar to the Arabs of the Soudan, of whom we hear so much at the present day. These discoveries may help to clear up the relations between the Hittites and the Hyksós, and to prove that the wars of vengeance entered upon by Râmeses II. against the Kheta and Syrian allies were vengeance upon them for the part they had taken in leading the Hyksós into Egypt. I will conclude by saying that Mr. Tomkins's paper bristles with sharp little discoveries, and some important ones, and I can only hope that the work he has pleaded for may be carried on, and that in a few years we shall have some great and important discoveries from the Delta of the Nile.

Rev. H. G. TOMKINS.—I spoke of the tantalizing cross questions which the Nile and the Euphrates are asking of one another, and

* Since these remarks were made, "Professor Hull has returned with materials for the construction of a geological map of the Holy Land very much in advance of anything which could hitherto be attempted. He has traced the ancient margin of the Gulfs of Suez and Akaba to a height of 200 feet above their present level, and is of opinion that at the time of the Exodus there was a continuous connexion of the Bitter Lakes and the Red Sea. (Palestine Exploration Fund Journal, April, 1884, p. 137.) The Dead Sea, he has discovered, formerly stood at an elevation of 1,400 feet above its present level,—that is to say, 100 feet above the level of the Mediterranean. He has also found evidences of a chain of ancient lakes in the Sinaitic district, and of another lake in the centre of the Wady Arabah, not far from the water-shed. The great line of dislocation of the Wady el Arabah and the Jordan Valley has been traced to a distance of more than a hundred miles. The materials for working out a complete theory of the origin of this remarkable depression are now available. They are found to differ in many details from the one furnished by Lartet. The terraces of the Jordan have been examined, the most important one being 600 feet above the present surface of the Dead Sea. The relation of the terraces to the surrounding hills and valleys shows that these features had already been formed before the waters had reached their former level. Sections have been carried east and west across the Arabah and Jordan Valley. Two traverses of Palestine have also been made from the Mediterranean to the Jordan."—ED. (revised by Prof. Hull).

Mr. Boscawen has raised a few points which I will not just now take up time by going into. With regard to the sphinxes of San, he has raised a most interesting argument, and the photographs of the lion which my friend Dr. Gwyther has brought home are of great value. I quite agree that that is a good parallel of the shaggy sphinx, with its mane. With regard to one or two points he has brought out I agree, after having read everything I can get hold of about Egyptian influence on the Jews, and the beautiful work of the late Abbé Annessi—who died at an early age—on the book of Leviticus and other things in which Egypt was supposed to influence the Mosaic doctrines and code, that Mr. Boscawen has touched the right string. I say this from what little I know, and after taking a vivid interest in everything that might help me in finding out the points of intersection between the Egyptian and Assyrian. It is in regard to these great points that we find the most valuable results in recent discoveries, and it does appear that there is a marked contrast between Egyptian and Mosaic piety; between the Egyptian moral code and the moral and spiritual code of the Hebrews; between the forms of holiness and ideas of righteousness held by the Egyptian and by the Hebrew, more particularly when I remember that the only things I have ever met with that come home to one's heart and conscience as Biblical outside the Bible, are the piteous wailings of the stricken heart in the fragments of penitential psalms of the Assyrians, Babylonians, and early Chaldeans, these being the only extra-Scriptural sources in which I have found the sense of sin in the veritably-awakened conscience. Therefore, I quite agree that the higher spiritual morality and yearnings are to be found much rather by the side of the Euphrates than on the banks of the Nile. But upon this point I should like some one to make further inquiry. With regard to the tent of the Egyptian queen, I only point out, as a curious matter, the material of which the tent was composed, and suggest a certain likeness to what we read with reference to the Tabernacle. I am glad to say I have anticipated Mr. Boscawen's notion of the etymology of Zar in some notes I made at the Church Congress, where I had to speak upon these matters. I am very much indebted to Mr. Boscawen for his remarks, and I hope that such meetings as these may prove the means of increasing our information on such great topics as this. I trust also that the explorations in Egypt may go on, and that, during the next six months, much more than we yet know may be learned about the Nile Delta. I have only now to thank all for the attention bestowed on my paper, and for the kindness and courtesy with which I have been received.

The meeting was then adjourned.

NOTE BY THE AUTHOR, Aug. 12, 1884.—The last number of the *Zeitschrift* of the renowned and regretted Lepsius contains an important article by Brugsch-Pacha, in which he frankly accepts Naville's site of Pithom, and places Rameses further north on the eastern frontier of the Delta. The latter site must not be regarded as ascertained.

APPENDICES.

ON RECENT ADVANCES IN BIBLICAL CRITICISM AND IN HISTORICAL DISCOVERY IN RELATION TO THE CHRISTIAN FAITH.*

THE topic prescribed for me is "The Bearing of Egyptology, in its most Recent Phase, on the Bible." I would first say this: that to show the bearing of Egyptology on the Bible is rather to prove, by innumerable small coincidences, that which Ebers has so well called the *Egypticity* of the Pentateuch, than to establish any particular historical point by external and monumental evidence. But that function of Egyptology is a very important one indeed. For instance, the life of Joseph is supported at every point in the strongest probability by the parallel between the Egyptian monuments and the record in the Bible. I will not, however, take up much of your time in arguments this evening. I would point out that in the main, roughly speaking, the Delta of the Nile is almost the Biblical Egypt. We have so little in the Bible beyond the Delta, that we may say that the Delta is almost the Egypt of the Bible. I will now take three points in the Delta. The first is that of the Biblical Zoan, the S^{an} of the present day, where the immense ruin-heaps are waiting to be explored. Here, already, the results of comparatively superficial examination by Mariette are so very important, in having recovered the sculptures of the "Shepherd Kings," that we may expect something still more important from a thorough search of the ruins. The "Field of Zoan" of the Bible is called by the same expression in Egyptian records. The Field of Zoan was the scene of the great wonders which God performed by the hand of Moses. I do not think that Zoan is, as Brugsch supposes, the Zar of the Egyptian monuments. But now we will come to that point—to the place called Zar or Zaru on the Egyptian monuments, and here we come upon a very curious Biblical coincidence. In the 13th chapter of the Book of Genesis, where is described Lot's choice of the Jordan plain, it says: "The plain was well watered everywhere, even as the garden of the Lord, like the land of Egypt as thou comest unto [when thou enterest] Zoar." But there is very strong reason for believing that these words should be read not "as thou comest unto Zoar,"—which is far away from the land of Egypt,—but "when thou enterest Zar." [The Hebrew word *exactly* suits this.] And I want to say a word about that place Zar. It was a most important military point, for it was the place of starting for all the Egyptian expeditions into Syria during the great reigns of the Thothmes and Rameses Pharaohs. They started from "the fortress of Zar"; and there is still to be seen at Karnak that magnificent tableau which represents the triumphal return of Seti I. from one of these expeditions. You can see the "Fortress of Zar," and the

* *An Address delivered at the Reading Church Congress, October, 1883. By the REV. HENRY GEORGE TOMKINS, late Vicar of Branscombe. Reprinted, by permission, from the Official Report.*

Pharaoh in his chariot, at the head of strings of captives who are being taken into bondage in the land of Goshen. The open portals of the fortress are to be seen, and the fortified points of the great military road from Syria; and this is very important, for it is surely connected with a discovery of the late lamented F. W. Holland, Vicar of Evesham. In a letter to me, in May, 1880, he said: "The road which I discovered to the south of that (viz., of Brugsch's route of the Exodus), running due east from Ismailia, will, I hope, have had a special interest for you, as the route of Abraham into Egypt. It is a very remarkable road, evidently much used in ancient times, and it is curious that it has remained unknown." Mr. Holland described his route in a paper read before the British Association, and reprinted in the Quarterly Statement of the Palestine Exploration Fund for April, 1879. I hope this most important ancient road will not remain unknown much longer, for it ought to be very carefully surveyed. It is the road by which the fathers came into Egypt; the road at the termination of which, a little within that "Fortress of Zar," Joseph went to meet his father, with all the pomp of Egyptian monarchical grandeur, with his chariots and his escort; the road by which the great armies of Egypt went out upon their wonderful expeditions, which Sir Charles Wilson has referred to, against the Hittites and their other enemies; and therefore I say it is a road well worthy of being thoroughly surveyed. And I cannot help thinking that, since we know approximately the situation of that fortress of Zar, which was the key to the great military inlet to Egypt, by which our own troops so lately led our expedition to Cairo,—I cannot help thinking that if we were to put one thing and another together, we should find ourselves on the eve of very important results. The inlet of this ancient road must needs be closely connected with the great military position in the strong eastern fortified wall of the ancient Pharaohs, the key to Lower Egypt, the fortress of Zar, hitherto confused by Bible readers with Zoar, in the passage I have quoted. And that discovery of the true Zar of Gen. xiii., which was made by the learned Dr. Haigh, in 1876, is taken for granted by Dr. Dümichen in his important history, now in course of publication. That Zar is a place which should be carefully looked for. Now we will go a little further, about twelve miles along the land of Goshen, along the line of the Sweetwater canal, along the exact line of our recent military operations, and to the spot where I think the first engagement took place. We find there, at Tell el-Maskhûta, the ruin-heaps and the ancient fortified walls of a most important place—one of the twin store-cities which were built by the Israelites for their oppressor, Rameses II. The venerable Lepsius distinguished himself, among many other achievements, by the identification of this place, upon apparently unassailable grounds, with Rameses. It has been taken for granted, and the railway station there is called "Ramsis." M. Naville, in the course of his excavations made there for the Committee of the Egypt Exploration Fund, has found very important monumental evidences. I can give you a short account of his results, but I have not time to argue. I am perfectly aware that Dr. Lepsius still adheres to his original idea that Tell el-Maskhûta was Rameses, and I have read his recent article in his *Zeitschrift* with the greatest attention. Now, M. Naville has found a very great and strong wall of circumvallation of that ancient fortress. It is built of crude bricks, enclosing a restricted area of about twelve acres, but those twelve acres are occupied in a strictly military manner by the magazines of a "store-city." These store-chambers are very interesting indeed. They had high walls, and were strongly built, and they had the peculiarity of being opened only at the top. There were no doorways, and no inlets at the sides, and that peculiarity entirely tallies with the well-known representations of Egyptian granaries and

store-chambers given by Wilkinson and Rosellini. While this was a store-city, it was a sanctuary as well, according to the custom of the Egyptians. Like other towns, it had a two-fold name, a religious and a civil name, as, for instance, our own Verulam is called St. Alban's. The secular name of this place was Seku, *i.e.*, Succoth, of the Bible. Let me remark that Brugsch has vindicated the sibilant pronunciation of the first Egyptian consonant, the well-known lasso-shaped hieroglyph, in Lepsius's *Zeitschrift*, 1875, p. 8. It is, then, a most interesting fact that the secular name of this place was Succoth. I take this as proved, for it is established by the mention of Seku or Sekut twenty-two times in the inscriptions found there. There are the priests of the well-known setting-sun-god, Tum, of Sekut. And the sanctuary is called, fifteen times over, Pi-tum—the abode of Tum. If any one should question this, I will gladly give the references by which I think it is clearly established. Thus it was the first halting-place of the Israelites in their exodus. And that is the first nail yet driven hard and fast in their route. We have had many theories and contests, and an agreeable diversity of opinion, but from henceforth I believe that the theory of Brugsch, that Pharaoh's host was swamped by the setting in of the waters of the Mediterranean in the Serbonian marsh, must be given up, and the old theory that the escaping tribes went along the valley of the Sweetwater canal must be regarded as firmly established.

And now we are passing out of the region of vain conjectures into the region of historical realities.

There is another point. Tell el-Maskhûta is not only the Pithom and the Succoth of the Bible, but a very interesting place, of which we read in the Septuagint version. When Joseph went to meet Jacob, and Judah was sent to meet Joseph on behalf of his father, the meeting-place was Heroópolis. The identity of the spot is pointed out by Roman inscriptions there with the name ERO, ERO CASTRA. The derivation of the name given by M. Naville is very interesting, namely, the Egyptian word "Ar," a storehouse, of which the plural is "Aru," identical with the Greek ΗΡΟΥ found on the spot. Thus the name is found, and the road is found, by which Jacob came and Judah went on before him. I may say besides that there is a curious confirmation of the Biblical account of the work of bondage. The walls are very well built. The bricks are of Nile mud, and embedded in mortar, which reminds us that the Egyptians "made the children of Israel to serve with rigour, and made their lives bitter with hard bondage, in mortar and in brick" (Ex. i. 14). There are three kinds of brick used, the first made with straw properly provided; the next are made with reed (the "stubble" of our Bible, and the word used is pure Egyptian, *Kash*; *arundo*, *calamus*); and the third kind are made of sheer Nile mud, when even the reeds were exhausted. All these M. Naville has found at Pithom.

I will only add a few words more in following the illustrious engineer officer, Sir Charles Wilson, whom I am happy to see here in the interest of the Palestine Exploration Fund, and that is, that I am a humble member of the committee of the Egypt Exploration Fund, not by way of rivalry, for I have been a local secretary of the Palestine Fund for many years. The one is the complement of the other. Sir Charles Wilson is himself on the committee of the Egypt Fund. I will therefore only make the shortest possible appeal, and ask, Is it not worth while to pay for pickaxes to get at the wisdom of the Egyptians?

THE EXCAVATIONS AT PITHOM.

M. NAVILLE'S excavations at Tell El-Maskhûtah, which he identified with the Biblical Pithom, are referred to in a letter from Mr. Stanley Lane Poole, to the *Athenæum* last year, from which the following quotations are made: It appears that a small corner of the present excavation had already yielded a sculptured group, representing Ramses II. between two gods, and four other sculptures, all of which had been removed to Ismailia. "These M. Naville noticed were dedicated to the god Tum, the setting sun, and that Rameses II. was described as the friend of Tum. The conclusion was, that they must have come from one of the several cities which bore the sacred or temple name of Pe-tum, and M. Naville conjectured that the Petum in question, associated as it was with Ramses II., might turn out to be none other than the treasure-city of Pithom which the children of Israel "built for Pharaoh" (Exodus i. 11). This finally decided him to begin his exploration at Tell El-Maskhûtah, whence these monuments dedicated to Tum had been brought. He found the site marked out by extensive but not lofty mounds, and at the corner where the previous diggings had been made a red granite group representing Ramses II. between two gods (the fellow-group to that at Ismailia) was still standing *in situ*, and some unworked blocks of stone lay near by.

"This was all that had been done when M. Naville began his work of excavation in the beginning of February, 1883. When I visited the spot M. Naville had been at work for six weeks, and had carried the excavations almost as far as he meant to go. He had employed about a hundred men daily, and had cleared away 18,000 cubic metres of soil. He had laid bare the entire enclosure, and excavated a great part of the interior chambers and the whole of the remains of the temple. He had identified this walled city with Pithom, the strong city of Exodus, and had established its Greek and Roman name. He had ascertained that the builder of the city was Ramses II., traced its existence through several kings of the twenty-second dynasty to Ptolemaic and Roman times, and arrived at other important historical and geographical conclusions. No more triumphant success in the first trial of our exploration society could have been desired, and M. Naville may well be congratulated on having added to his distinction as an Egyptologist the laurels of a discoverer of the first rank. His method of work, his deductions, and his brilliant conjectures, which afterwards proved uniformly correct, evince the rarest of gifts—the instinct for discovery.

"The excavations are only a few hundred yards from the railway and canal. Standing on the high mounds on the south side of the canal, a comprehensive view is obtained of the whole position. Immediately in front we see a cluster of mounds and brick walls, clearly of the Roman period. These represent the Roman town of Hero or Heroöpolis, which adjoined the fortified camp. Beyond the town, looking southwards, is a slight valley, and on the other side of this is the square enclosure where the monuments were found which identified this enclosure with the Biblical Pithom and with the Greek fortress and Roman camp of Hero. At the south-east corner of the enclosure are the minaret and other vestiges of the ruined and (save by one Greek) abandoned Arab village of Tel El-Maskhûtah, and not far from the south-west corner is a deserted building formerly used by the engineers of the freshwater canal. Near the corner where the mosque stands, the dry bed of the old Pharaonic canal is seen, as it curves round towards the line

of the present canal. The fort or store-city was thus well supplied with water.

"Crossing the valley to the square enclosure, we are able to realise its peculiar character. The enclosing walls are about two hundred mètres long on each of the four sides, and are exceedingly massive. They are built of crude brick, made without straw, of an unusually large and solid kind, and the average thickness is no less than seven mètres. Within the enclosing walls the whole area is seen to be full of large excavated pits, which on closer examination prove to be solidly-built square chambers of various sizes, but all of the same general appearance. Almost the whole space within the walls, except the corner devoted to the temple, is honeycombed with these chambers, which are divided from one another by partition walls of from two and a half to three mètres thick. There is nothing resembling these curious chambers in Egypt; they are unique, and I think they are in some respects the most interesting part of M. Naville's discovery. The walls are not only unusually thick, but unusually well built. The bricks are very large, well squared, and laid with mortar with great care and regularity, while the perpendicular of the wall seems faultless. But the strange thing about these strong rooms is that they have no doors. M. Naville has cleared them down to the foundations, but not a door or gate could he find! The explanation of this is, however, easy and satisfactory. About ten or twelve feet from the foundation there is a sort of ledge, of the depth of a brick or two, running all round the walls, as though the floor of an upper story had rested there; and a little below the ledge there are square holes in the walls, with the remains of wood in them, as though the ends of beams had been inserted in them in connexion with the support of the upper floor. Below the ledge the wall is of plain brick, but above it is often covered with a coating of white plaster. All this seems to point to one conclusion—the doorless chambers below were entered by trap-doors from the upper stories, which were possibly dwelling-rooms; and the lower chambers, entered by trap-doors from above, must have been storehouses or granaries. When it is remembered that the Pithom with which M. Naville has identified this site is described in Exodus i. 11 as a "store-city," or treasure-city, the unique importance of these singular doorless chambers will be fully appreciated. No more remarkable confirmation of the accuracy of this particular statement in Exodus could well be demanded. It should be added that the bricks are made both with and without straw, that they are set with mortar as a rule, and that M. Naville has turned over thousands of them without finding a single cartouche like the one in the Berlin Museum, which Lepsius states came from this very site. The chambers near the old canal are in a much less perfect state than those in other parts of the enclosure; and the reason is seen in the fact that the more ruined parts were nearest to the water, and were, therefore, longest lived in and built over.

"The Temple of Tum, at the southern side of the enclosure, had its own enclosing wall, of which M. Naville has uncovered a good deal. Within this space were found all the monuments, with the exception of a black granite statue, which was evidently thrown over into the adjoining store-chamber. The temple was a small one, as might be expected in a place which was a fortress rather than a city—a place to take refuge in, not to live in. There were two sphinxes, now at Ismaïlia, before the entrance, and also the two groups of Raumes II. between gods already described; but no traces can be found of an avenue, or, indeed, of any extensive outworks. Of the temple itself almost nothing remains. The limestone used in its construction was very soft, and its natural decay was hastened by the action of later builders. The red baked brick of the Roman camp is seen over part of the

temple's site, and the materials of successive cities had to be supplemented from the remains of the Abode of Tum.

"The monuments found in the temple enclosure by M. Naville are these:—

"1. The oldest is a hawk with the name of Ramses II., nineteenth dynasty.

"2. Twenty-second dynasty. Small inscription of Sheshonk (Shishak); granite statue of Osorkhon II.; another of Takeloth. Probably the great black granite statue which lies broken in the storehouse next the temple belongs also to Osorkhon II.

"3. Ptolemaic. A great (hieroglyphic) *stela* of Ptolemy Philadelphus and his sister and wife Arsinoë. (Arsinoë is placed, in double, among the gods and goddesses, with a new and unknown cartouche in addition to her usual cartouche. The *stela* relates to the construction or restoration of the canal to the Heroöpolite gulf by Ptolemy Philadelphus.) Also a statue with the same new cartouche of Arsinoë.

"4. Roman. A milestone, with the names of Galerius Maximian and Severus (306 or 307 A.D.) and the distance, AB ERO IN CLVSM A MI VIII [≡] (the MI in monogram), and another stone describing the place as ERO CASTRA; and some *nomos* coins, mostly of Hadrian and Trajan.

"From these monuments the following facts have been deduced:—

"I. *The Identification of Tell El-Mashkâtah with the Biblical Pithom.*—This is proved by the juxtaposition of the names of Petum and Thuku (the latter previously identified with Succoth by Heinrich Brugsch Pasha) on the back of the Ptolemaic statue of a priest. The same name Petum occurs three times on a magistrate's statue of the reign of Osorkhon II., and both names are found on a third statue. "Petum [the abode of Tum] in the city or region of Thuku," *i.e.*, Pithom in the city of Succoth, fixes the site beyond a doubt; and its position in the Wady et-Tumilât, the valley that divides the desert and offers a direct and practicable road from the eastern border to Memphis, corresponds exactly to the description of "Thuku at the entrance of the east." Thus the excavations at Tell El-Mashkâtah have not only identified the strange brick enclosure with the strong store-city which is said in Exodus to have been actually built by the Israelites, but, by also establishing the connexion between Pithom, the sacred name, and Thuku, the ordinary name, they have fixed the position of the first encampment on the route of the Exodus (Exodus xii. 37). Not only do we see the actual storehouses which the children of Israel are related to have built, but we now know the first station on their journey from Egypt into Palestine. The position is certainly by no means where Brugsch placed it. At present it is enough to say that one point in the Exodus is definitely fixed, without entering into the question how to square this point with other points which at present rest upon conjecture. When more sites have been explored—such as San (Tanis) and Daphnæ—we may be able to lay down the route with more precision.

"II. *The Identification of the Builder of the City and Temple with Ramses II.*—M. Naville is convinced that Ramses II. built the temple, and that he was not able to complete his design. The oldest monuments bear his name, and hard by lie blocks of unworked granite and other stone, with sculptors' marks, evidently intended to be used in the decoration or enlargement of the temple. The identification of Ramses II. with Pharaoh the Oppressor is thus confirmed. The temple was afterwards restored or added to by several sovereigns of the twenty-second dynasty.

"III. *The Identification of Tell El-Mashkâtah and Pithom with Hero or Heroöpolis.*—This follows from the two Roman inscriptions, and another stone bearing the ΗΡΟΥ shows that the name went back to Greek times. Further, M. Naville traces the name Hero or Ero to Ara, the Egyptian word for storehouse, which occurs in the title of the priest on the statue which first

settled the identity of Pithom : "chief of the *storehouse* of the temple of Tum or Thuku." Other points are the appellation *castra*, and the distance from Clysmā, which is clearly nine Roman miles. There is no trace of an L before VIII, unless the monogram of M with a perpendicular line through it stands for M L instead of MI, which is improbable. If Hero or Pithom was only nine miles from Clysmā, the site of the latter must be looked for near Lake Timsāh, or more probably towards the ancient head of the Bitter Lakes.

"We still wait the decipherment of the great *stela* of Ptolemy Philadelphus and Arsinoë ; but meanwhile to have traced the history of Pithom-Succoth-Heroópolis from the foundation by Ramses II. in the fourteenth century B.C., through the twenty-second dynasty and the Ptolemies, under its Egyptian name, and then in its Greek and Roman name till 306 A.D., is no slight feat.

"I should add that, though I am indebted to M. Naville for the details above recorded, he must not be held responsible for any errors, either in description or inference, which may have crept into my notes."

ORDINARY MEETING, JANUARY 7, 1884.

H. CADMAN JONES, ESQ., M.A., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

MEMBERS :—Rev. S. H. Buchanan, D.D., United States ; E. Burton, Esq., N. S. Wales ; G. A. Spottiswoode, Esq., London.

LIFE ASSOCIATES :—R. J. Finnemore, F.R.G.S., F.Z.S., Natal ; Rev. G. H. W. Lockhart-Ross, B.A., Sudbury.

ASSOCIATES :—The Right Rev. the Bishop of Tuam, Ireland ; the Ven. Archdeacon P. Teulon Beamish, D.D., LL.D., Victoria ; Rev. D. N. Beach, United States ; Rev. E. Chichester, B.A. Camb., Dorking ; Rev. B. C. Young, Birmingham.

HON. LOCAL SECRETARIES :—Rev. F. A. Allen, London ; C. S. Eby, Esq., Japan ; Rev. F. R. Young, Reading.

The following paper was then read by the Author :—

*THE CUNEIFORM INSCRIPTIONS AND THE ERA OF
THE JEWISH CAPTIVITY.* (B.C. 605-538.) By
W. ST. CHAD BOSCAWEN.

“THE Jewish captivity,” writes the late Emanuel Deutsch, “was one of the most mysterious and momentous periods in the history of humanity. What were the influences brought to bear upon the captives during that time we know not. But this we know, that from a lawless, reckless, godless populace, they returned transformed into a band of Puritans.”* The people who had so often and so easily yielded to the seductions of the rites of Baal and Ashtoreth,—a people so rebellious as to call forth the rebuke, “This is a

* *Literary Remains of Emanuel Deutsch*, “Essay on the Talmud,” p. 12.

rebellious people, lying children, children that will not hear the law of Jehovah" (Isiah xxx. 9). This same people returned from a captivity, nominally of seventy years' duration, but in reality about fifty,* zealous of Jehovah, banded together in one homogeneous whole against the encroachments of all rulers who would paganise the nation, and enforcing the formerly neglected Law with a fanatical sternness. The Captivity was the birthday of all the vital elements in Jewish nationality; the revival of national and religious enthusiasm, the codification of laws and literature, all owe their origin to this important epoch. Twenty years have elapsed since the lines with which my paper commenced were written, and great and important discoveries have, during that time, been made in the grave-mounds of the land of the Captivity, which throw a flood of light upon this dark epoch, revealing some, at least, of the potent forces which wrought this wondrous change in the chosen people. It will be my endeavour in this paper to place before you this "light from the monuments," which has been re-kindled by the magic touch of the spade-wands of Sir Henry Layard, Mr. Hormuzd Rassam, Sir Henry Rawlinson, and other explorers, and to show you how valuable it is in elucidating, elaborating, and confirming the Biblical narrative. In dealing with this subject, we have now to start and to work upon entirely new ground to that formerly the basis of treatment. Hitherto all we knew of the wonders of Babylon, and the glory, and wisdom, and learning of the Chaldeans, was derived from the second-hand, hearsay evidence of the Greek writers, Herodotus, Ctesias, Xenophon, and others, together with a few incidental notices in the later books of the Old Testament. Now we have before us a series of strictly contemporaneous documents, which reveal to us, not only the life and acts of the kings of Babylon, but numberless details of the social and religious life of the nation. We have now open to us an overwhelming mass of literature, which, in thought, language, and expression is a sister of the Hebrew tongue. It is, therefore, apparent to all how important it is that this evidence should be sifted to its utmost limit in the cause of truth. In dealing with this evidence, I purpose to treat of it under three headings:—historical, religious, and social.

It is clear that to prove the importance of such an epoch as that of the Captivity in the history of the Jewish nation in particular and the world in general, it will be necessary, first

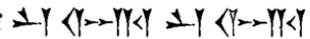
* *Dunker's History of Antiquity*, vol. vi., p. 80.

of all, to prove the historical accuracy of the documents relating to the period.

The Hebrew people owed much of the part which they played in the political dramas of Western Asia to the geographical position of the land they lived in. From a geographical position it was, as Dean Stanley has fitly called it, the Piedmont of Western Asia; so, politically, it became the Austria of the ancient world. Situated midway between the two great Oriental empires of Egypt and Assyria, it was ever yielding to the influence, first of the one, then of the other; and, when these mighty powers met in the clash of battle, it was upon the plains of Palestine or Syria that the conflict was waged. The great battles of the Egyptian age, as we may call the period from the seventeenth to the twelfth centuries before the Christian era, were fought upon the plains or in the northern borders of the land.

The battles of Mageddo and Kadesh, in which Thothmes III. and Rameses II. (Sesostris) crushed the Syrians (Ruten), the Hittites (Keta) and the Asia Minor allies, were fought, the one beneath the slopes of Carmel, the other in the Orontes valley, the northern gateway of Palestine. In the Assyrian age, from the ninth to the seventh centuries B.C., we have several important battles. The battle of Karkar (B.C. 558), in which Shalmanesar III. defeated the Syrian allies, among whom was

Ahab  A-Khi-bu, King of Sirlai or Israel, was fought in the Orontes valley; in the neighbourhood of Hamath.* During the long struggle between Egypt and Assyria, the great battles of Raphia (B.C. 720) in which Sargon stemmed the tide of the Egyptian invasion and forced Sibakhe, the So of the Bible (2 Kings xvii. 4-5), the Sabaka of the hieroglyphic inscriptions to give tribute, and Eltakeh, in which Sennacherib crushed the rebellion that Tirhakah had raised in Philistia and Judea (2 Kings xix. 9), were both fought in southern Palestine. The sieges of Ashdod, Samaria, Tyre, Sidon, and Jerusalem show how unceasing was the struggle between the Nile and the Euphrates for the dominion

* The City of  Ka-ar-Ka-ar, Hebrew  is represented on the bronze gates found by Mr. Rassam at Ballawat (pl. 14 of the Soc. Bib. Arch. publication). It was situated near to Hamath, and I am therefore inclined to identify it with either Kalát-el Sedgar, the ancient Larissa, or Kalát-el Mudjik the ancient Apamea. Both of these places, especially the latter, would be important strongholds in times more ancient than the Roman and Greek ages.

over the fertile plains of Palestine, and the rich merchant cities of Phœnicia, and how heavy a brunt of the conflict fell upon the Jewish people. It is in this unceasing hostility between the two great powers of the East, which was ever being carried on, either by latent currents of intrigue or in the fierce flame of battle, that we find the causes which led to the fall of the kingdoms of Israel and Judah.

The long chain of bloodshed and assassination which forms the concluding chapter of Israelite history is terminated by the reign of Hoshea, who seized the throne of Pekah. In the earlier part of his reign he appears to have been an ally of Assyria, but during the siege of Tyre by Shalmanesar IV. (B.C. 727) he yielded to the intrigue of So (Sabaka), king of Egypt (2 Kings xvii. 4-5), and withheld the tribute due to Assyria, declaring himself an ally of Egypt by "sending messengers to the court of Egypt." This drew upon him the vengeance of Shalmanesar, who "came up throughout all the land, and went to Samaria and besieged it three years." During the wars against Tyre and Samaria, the Assyrian king Shalmanesar died, and Sargon the Tartan, or *Commander-in-Chief*,* seized the throne. He completed the capture of these cities, and carried away into captivity, as he states in the Khorsabad inscriptions, 27,280 of the inhabitants. The fall of Samaria took place in B.C. 721, the first year of Sargon's reign.

The place of the Israelites was filled by bands of colonists, who had no doubt exhibited too strong a favouritism for the Babylonian rebel prince Merodach Baladan; and who were consequently transported from their native cities of Cutha Ava and Sepharvaim (2 Kings xvii. 24) and from Hamath, whose king Ilubadi had been defeated by Sargon. The causes, and indeed the *modus operandi* of the fall of the kingdom of Judah about a century and a half later, were almost exactly the same.

The intrigues of the Pharaohs of the twenty-sixth Egyptian dynasty brought about the fall of Judah, as those of the twenty-fifth had culminated in the fall of Samaria. The vacillating attitudes of Jehoiachim, Jehoiachin, and Zedekiah

* The Tartan Hebrew תַּרְתָּן was the *tar-tan-nu* 𐎲𐎠𐎲𐎠𐎲𐎠 of the Assyrian inscriptions. This word is an abstract derivative from *tertu*, "a law," the Hebrew תִּרְיָה and the Tartan was therefore the chief lawgiver or commander, and ranked, as we know from the Eponym canons, next to the king. There is in the British Museum (W. A. I., vol. i., pl. liv., No. 3) a despatch from Sennacherib when acting as *tartan* to his father Sargon.

drew down upon the land the severe vengeance of Nebuchadnezzar, "the servant" (Jer. xxv. 9; xxvii. 6; xliii. 10), chosen by the Lord to punish the rebellious people.

It has been necessary to trace briefly the events which led to the fall of the northern kingdom in order to show that the causes which brought about the fall of the southern kingdom were not new ones, but only the outcome of old rivalry between Egypt and the dominant state of the Tigro-Euphrates valley.

The fall of Samaria was contemporaneous with the foundation of the Sargonide dynasty, the most glorious of all the houses of Assur. This dynasty lasted a little less than a century (B.C. 721 to B.C. 625), and was, indeed, the "golden age of Assyria." The wars of Esarhaddon and Assurbanipal had crushed the power of Egypt. And Elam, a dangerous Eastern rival, Armenia, and even distant Lydia were submissive to the rule of the kings of Nineveh. The short but severe struggle of Merodach-baladan against Sargon and Sennacherib had ended in the conquest and annexation of Babylonia; and the house of Assur was, indeed, at the zenith of its power. Yet at this very time, shortly after the capture of Thebes, the Nia- \rightarrow \gg Υ Υ Υ Υ Υ . DP *Ni-a* of the Assyrian inscriptions (W. A. I., vol. v., pl. 1), and the No of the Scriptures, the prophet Nahum was pouring forth his bitter denunciations against "the bloody city": "Art thou better than populous No, that was situate among the rivers, that had the waters round about it, whose rampart was the great river?"* "Yet she was carried away, she went into captivity."† We may, guided by these passages, place the prophecy of Nahum as being uttered during the reign of Assurbanipal (B.C. 668—625), the Sardanapalus of the Greeks. The writer of this book must have been a spectator of the two great events of the latter part of the seventh century before the Christian era, and passages in his book which show that he knew the general features of Nineveh, if not from personal experience, at least from contemporary evidence. In one passage,‡ "The chariots shall rage in the streets, they shall jostle one against another in the broad ways" (Nahum ii. 4), we have clearly a reference to the streets and squares for which the city was famed, and from which it derived the name *Ar Reheboth*, ער רהבות (Genesis x. 11),§ "the city of broad streets."

* Nahum iii. 8. † *Ibid.*, iii. 10. ‡ *Ibid.*, ii. 4.

§ The Assyrian inscriptions show that the reading of this passage (Gen. x.

Nineveh was the city of Istar, the Ashtaroth of the Zidonians, and her temple was the chief fane of the city. "She was the Queen of Heaven and the Stars," and was attended by her two maids, Samkhat and Kharimat, personifications of Pleasure and Lust. The knowledge of these facts add point to the bitter curse of the prophet, "Because of the multitude of the whoredoms of the well-favoured harlot, the mistress of witchcrafts" (Nahum iii. 4). The trade of Nineveh, which was very great, is amply illustrated by the large collection of contract tablets in the British Museum, which show how indeed the merchants of Nineveh were "multiplied above the stars of heaven" (Nahum iii. 16). The fall of Nineveh is closely connected with the fall of the house of Judah, and must have indeed been anxiously waited for by the nations under her iron rule. The monuments and the Greek writers all agree in placing the fall of Assyria, or the siege of Nineveh, in or about B.C. 625. There are now many additional proofs of the accuracy of this date, and, as they have an important bearing on Hebrew prophecy, I will give them.

The Canon of Ptolemy, which is founded upon astronomical data, gives the following series of Babylonian rulers during this period :—

			First year.
Asaridinus.....	13 years	B.C. 680.
Saosduchinus.....	20	„ B.C. 667.
Isinladanus } or Kinlidinus } 22	„ B.C. 647.
Nabapalassar.....	21	„ B.C. 625.

The accession of Esarhaddon, the Asaridinus of the Canon of Ptolemy, is fixed by an entry in the Assyrian Eponym Canon as occurring in the Eponymous year of *Nabu-akhi-eris*, that is B.C. 681. His first year as distinguished from his accession year would be, therefore, B.C. 680, as Ptolemy states. His son Assurbanipal succeeded him in B.C. 668 as King of Assyria, the throne or viceroyalty of Babylon being given to the younger brother, *Shamas-Suma-Ukin*, the Saosduchinus

11) must be "Out of that land he (Nimrod) went forth into Assyria, and builded Nineveh," the City of Streets, "and Calah, and Resen between Nineveh and Calah." Esarhaddon (W. A. I., vol. i., pl. 40) speaks of the $\rightarrow\text{Y}\leftarrow\text{E}\text{E}\text{X}\rightarrow\text{Y}\leftarrow$ *ri-i-bu-ti*, or streets of Nineveh, through which he made his captives to pass.

of Ptolemy. The name of this prince, who played a very important part in Babylonian history is written $\Upsilon \rightarrow \Upsilon \Xi \Upsilon \rightarrow \langle \Xi \rangle$
 $\rightarrow \Upsilon \rightarrow \langle \Xi \rangle \rightarrow \Upsilon$ and read D.P. *Shamas-suma-ukina*, "the Sun-god has established a name," was originally read *Saul mugina*, but tablets recently discovered by Mr. Rassam establish this reading as the correct one.* In an inscription brought home by Mr. Rassam from Babylon in 1881, Assurbanipal speaks of him as $\Xi \rightarrow \Upsilon \rightarrow \langle \Xi \rangle \rightarrow \Upsilon \rightarrow \langle \Xi \rangle \Upsilon \rightarrow$ *akhi ta-li-mi* "my own brother," a phrase which may be compared with the Scripture name *Bar tholomew* ("sons of one's own brother," Matt. x. 3). His conduct towards his elder brother, the King of Assyria, seems to have been anything but brotherly. He revolted against him, and soon the loving and familiar epithet, which we find in the cylinder above, is replaced by $\Xi \rightarrow \Upsilon \rightarrow \langle \Xi \rangle \rightarrow \Upsilon \rightarrow \langle \Xi \rangle \Upsilon \rightarrow$ *akhi khidhuti* "my wicked brother." By means of gold, silver, and treasure, taken from the treasure-house of the Temple of Esaggil at Babylon, of Nebo at Borsippa, and Nergal at Kutha, the most ancient of the Babylonian temples, he bribed Umman-nigas, king of Elam, to join him in revolt against his brother. After a long and bloody war, the details of which are very fully given in the inscriptions of Assurbanipal, the rebellion was put down, and Shamas-suma-ukin set fire to his palace and perished in the flames. It was probably this death of the brother of Assurbanipal's that gave rise to the story of the death of Sardanapalus, or Assurbanipal himself, in such a manner. On the overthrow of *Shamas-suma-ukina*, in B.C. 648, Assurbanipal assumed the crown of Babylon himself, but appointed a deputy named $\Upsilon \langle \Xi \rangle \rightarrow \Upsilon \rightarrow \langle \Xi \rangle \rightarrow \Upsilon \rightarrow$ (*Kin-la-da-nu*), the Kinladanus of Canon of Ptolemy. Tablets dated in his reign have been found by Mr. Rassam at Abbo Hubba. There are also in the British Museum tablets dated in the reign of Assurbanipal, as King of Babylon, the latest

* In a bi-lingual list of royal names (*Proceedings Soc. Bib. Arch.*, vol. iii., p. 40), the royal name $\Upsilon \langle \Xi \rangle \langle \Xi \rangle \rightarrow \Upsilon \rightarrow \langle \Xi \rangle \rightarrow \Upsilon \rightarrow$ is explained by D.P. *Shamas-upakhhir*, "The Sun-god has assembled or gathered together." This establishes the reading of the complex group which begins the name. The *Shamas*, on account of the weakness of the $\langle \Xi \rangle$ in Babylonian, and its similarity to Υ was corrupted by the Greek writer into *Saos* from *Savaos*.

bearing date in the twentieth year. Counting from the overthrow of the brother, this would bring us to B.C. 628, or about three years before the siege of Nineveh by the Northern allies, according to Greek writers; and two years before the accession of Nabupalassar to the Babylonian throne. The date of this accession is fixed by the eclipse of the year B.C. 621. Ptolemy records that in the 127th year of the Nabonassar period, that is the 127th year from B.C. 747, the first year of *Nabo-nassar* 𐎠 𐎡 𐎢 𐎣 𐎤 𐎥 𐎦 𐎧 𐎨 𐎩 𐎪 𐎫 𐎬 𐎭 𐎮 𐎯 𐎰 𐎱 𐎲 𐎳 𐎴 𐎵 𐎶 𐎷 𐎸 𐎹 𐎺 𐎻 𐎼 𐎽 𐎾 𐎿 (Nabū na-zir (Nebo protects), which would be B.C. 621, there was an eclipse of the moon in the month Athyr, and that year was the *fifth* year of the reign of Nabupalassar, King of Babylon. His accession was, therefore, in B.C. 626, and first year in B.C. 625, as stated in the canon.* An inscription, recently obtained from Babylon, enables us to fix this date in another way. In this text we have a record of the overthrow of the Median power, under Astyages, by Cyrus, and its date accurately fixed.

In this chronicle of the latter days of Nabonidus, found on a Babylonian tablet (*Trans. Soc. Bib. Arch.*, vol. vii., p. 156).

(a). 𐎠 𐎡 𐎢 𐎣 𐎤 𐎥 𐎦 𐎧 𐎨 𐎩 𐎪 𐎫 𐎬 𐎭 𐎮 𐎯 𐎰 𐎱 𐎲 𐎳 𐎴 𐎵 𐎶 𐎷 𐎸 𐎹 𐎺 𐎻 𐎼 𐎽 𐎾 𐎿

IS - TU - VE - GU ZABI SU IPPALKIT - SU - VA INA KATI

Astyages his soldiers revolted against him in hands

𐎠 𐎡 𐎢 𐎣 𐎤 𐎥 𐎦 𐎧 𐎨 𐎩 𐎪 𐎫 𐎬 𐎭 𐎮 𐎯 𐎰 𐎱 𐎲 𐎳 𐎴 𐎵 𐎶 𐎷 𐎸 𐎹 𐎺 𐎻 𐎼 𐎽 𐎾 𐎿

ZA - BAT A - NA D.P. KU - RAS ID - DI - NU

they took (and) to Cyrus they gave him

(b). 𐎠 𐎡 𐎢 𐎣 𐎤 𐎥 𐎦 𐎧 𐎨 𐎩 𐎪 𐎫 𐎬 𐎭 𐎮 𐎯 𐎰 𐎱 𐎲 𐎳 𐎴 𐎵 𐎶 𐎷 𐎸 𐎹 𐎺 𐎻 𐎼 𐎽 𐎾 𐎿

KU - RAS A - NA MAT A - GAM - TA - NU ALU - SARRUT - U

Cyrus to the land of Ecbatana and the royal city

𐎠 𐎡 𐎢 𐎣 𐎤 𐎥 𐎦 𐎧 𐎨 𐎩 𐎪 𐎫 𐎬 𐎭 𐎮 𐎯 𐎰 𐎱 𐎲 𐎳 𐎴 𐎵 𐎶 𐎷 𐎸 𐎹 𐎺 𐎻 𐎼 𐎽 𐎾 𐎿

ERub KASPA KHURATZA SA - ŠU SA - GA

entered silver gold furniture and gods (he captured).

* The Babylonians calculated the regnal years of their kings as follows:— From the death of the previous ruler until the first day of the succeeding month Nisan, the first month of the year (March and April) was called 𐎠 𐎡 𐎢 𐎣 𐎤 𐎥 𐎦 𐎧 𐎨 𐎩 𐎪 𐎫 𐎬 𐎭 𐎮 𐎯 𐎰 𐎱 𐎲 𐎳 𐎴 𐎵 𐎶 𐎷 𐎸 𐎹 𐎺 𐎻 𐎼 𐎽 𐎾 𐎿 *sanat ris sarrutu*, "the year of the beginning of Royalty," or accession year. This is the period referred to in 2 Kings xxv. 27, as "the year that he began to reign." The first year began with the first day of Nisan in the king's reign.

The sixth year of Nabonidus, both according to the monuments and the Canon of Ptolemy, was B.C. 550, and was, as we see, synchronous with the last year of Astyages, king of Media. Calculating the reigns of the Median kings, therefore, as recorded by Herodotus, we get the following dates:—

Deioces	53 years from	B.C. 700
Phraotes.....	22 „ „	B.C. 647
Cyaxeres.....	40 „ „	B.C. 625
Astyages.....	35 „ „	B.C. 585

This restored chronology confirms the statement of Josephus that the revolt of the Medes took place soon after the miracle of the dial of Ahaz, in the fourteenth year of Hezekiah (B.C. 712). This would bring the Median revolt into synchronism with the Median wars of Sargon and Sennacherib, and the accession of Phraotes would be contemporary with the Elamite and Babylonian war resulting from the revolt of *Shamas sumakina* against his brother, while the accession of Cyaxeres is contemporary with the fall of Nineveh and the rise of the new Babylonian empire under Nabupalassar in B.C. 626.

The great convulsion of the northern invasion, which led to the overthrow of Assyria and the destruction of Nineveh, was not unknown to the Hebrew writers. It is clearly foreseen by Ezekiel (chap. xxxi.), who, after speaking of the wide empire of Assur “as a cedar of Lebanon, with fair branches,” goes on to foretell the overthrow: “I have therefore delivered him to the mighty one of the heathen; he shall surely deal with him;” “and the strangers, the terrible of the nations, have cut him off and have left him”; “I have made the nations to shake at the sound of his fall.” The prophet Zephaniah (chap. ii. 13) and Jeremiah also (chap. vi. 23) foresee this convulsion. Judging by a comparison of the writings of these prophets (Zeph. i. 1; ii. 13–15; and Jer. i. 1; and xxv. 3) the northern invasion by the Medes, Scythians, &c., must have taken place between, soon after the thirteenth year of Josiah, B.C. 628, a date which agrees with the monumental testimony. The Canon of Eusebius makes the invasion take place in about B.C. 635, according to the earlier version of St. Jerome, or B.C. 632 according to the Armenian version. In the year B.C. 677 Esarhaddon defeated in Khupuska, north-east of Assyria, Teuspa, the Gimirrean, “a barbarian,” as the Assyrian scribe calls him, and the horde which he led might be regarded as the advance guard of the Scythian invaders. The disturbed state of the Assyrian empire after B.C. 648 renders documentary evidence scarce, yet there are some tablets of very great importance

belonging to this period. They were obtained from the excavations at Koyunjik by Sir Henry Layard. Here we have Assurbanipal mentioned in conjunction with his son *Assur-akha-iddina*, or Esarhaddon II., and the tablets dated in the eponym of $\text{𐎶 𐎶𐎵 𐎶𐎵} \ll \text{𐎶} \text{ Natri-sár-ra-utzur}$. There is, as

I have pointed out in my paper on the Egibi tablets (*Trans. Soc. Bib. Arch.*, vol. vi., pt. i., pp. 1-133), no ground for identifying this monarch with Esarhaddon, the son of Sennacherib. From these tablets it appears that a great rebellion had broken out in the north-east provinces of Assyria, and a powerful confederation, consisting of the

$\text{𐎶𐎵 𐎶𐎵} \text{ Gi-mir-ai}$, $\text{𐎶𐎵 𐎶𐎵} \text{ Ma-da-ai}$, Medes, and $\ll \text{𐎶𐎵 𐎶𐎵} \text{ Man-na-ai}$, or Mineans, was marching against Assyria under the leadership of a chieftain named $\text{𐎶 𐎶𐎵} \text{ Ka-as-tu-ri-ti}$. The name

of this leader very closely resembles that of Cyaxeres, the son of Phraotes, and the date between B.C. 648 and B.C. 625 agrees with the classical authorities. We are told that Cyaxeres marched against Nineveh to revenge the death of his father, who was slain by Sardanapalus. As Kastariti is here only called "general" or leader, the war probably took place during the life of Phraotes and prior to B.C. 625. The effect of this invasion upon Nineveh and its king is recorded in the tablet, and it is a valuable comment upon the repentance of Nineveh as described in the book of Jonah, though hardly of that date. The passage is thus translated :—

"O Sun-god, great lord, I have prayed to thee.

O God of fixed destiny, remove our sin !

From the current day, 3rd day of this same month, Airu (2nd month), to the 15th day of the month, Abu (5th month), of the current year, for *one hundred days and one hundred nights consecutive, let the chiefs proclaim rites and festivals.*"

The revolt spreading to Babylonia, Egypt, and the other provinces, the fall of Nineveh was accomplished. The Babylonian revolt taking place in B.C. 626, headed by Nabupalassar, was the most important; and soon after this, apparently in B.C. 609-10, Necho "marched against [the weak] King of Assyria," and slew Josiah, his ally, at Mageddo (B.C. 609). The allied armies of Nabupalassar, Cyaxeres, and Necho accomplished the overthrow of Assyria,

and all that remained of that once great empire became a Median province. The references I have given to the Hebrew prophets indicating their knowledge of the Scythian invasion receive a remarkable confirmation from a passage in one of the cylinder inscriptions of Nabonidus, found by Mr. Rassam at Abou Hubba, the ancient Sippara or Sepharvaim. In one of these inscriptions the king states that the temple at Harran, dedicated to the Moon-god, had been destroyed by the wicked *Sabmandai*, or barbarians. It is evident that the Gimireans, or Scythians, are meant, as we have seen the Teuspa, or Teispes, the opponent of Esarhaddon, was called *Sabmanda*, or barbarian. In the Behistun inscriptions, the tall cap wearing *Iskunka* is called by the Persian *Sakka*, "the Scythian," but in the Babylonian version "Gimirrai," the Gimirean. The alliance formed between the rebels against Assyria did not last long, and the aggressive policy of Necho soon brought down upon him the armies of the Chaldean. Four years after the battle of Mageddo, Nebuchadnezzar, acting as general of his father, defeated Necho at Carchemish, and but for the death of his father he would have besieged Jerusalem (2 Kings xxiv. 1, and Jer. xlvi. 1). In the third year,—that is, B.C. 603,—he revolted, and was punished by the invasion of southern Palestine by the trans-Jordanic tribes of Syrians, Moabites, and Ammonites (2 Kings xxiv. 2), and his son Jehoiachin, who succeeded him, was deposed in B.C. 598, and carried captive to Babylon (2 Kings xxiv. 12), and set up Zedekiah in his stead. By these campaigns Nebuchadnezzar had gained complete possession of Syria, "so that the King of Egypt came not any more out of his land, for the King of Babylon had taken from the river of Egypt [Wady el Arish] unto the river Euphrates all that pertained to the King of Egypt" (2 Kings xxiv. 7). The old strife between the two great empires was renewed in the reign of the successor of Necho, *Uahbara*, the Hophra of the Bible. He invaded Phœnicia apparently with success, as portions of a temple erected by him are found at Gebal (modern Jebeil), and captured Gaza, a strong Philistine fortress, inducing Zedekiah to break his allegiance with Babylon, and make a treaty with him (Ezekiel xvii. 15). The result of this rise of Egyptian power in Syria was a Babylonian invasion, ending in the defeat of Hophra (Jer. xxxv. 5-8), and the final overthrow of the Jewish power (2 Kings xxv.). The fall of Jerusalem was synchronous with the nineteenth year of Nebuchadnezzar (2 Kings xxv. 8; Jer. xxxix. 1-2), that is, B.C. 587-6. The Babylonian king at the time of the fall of Jerusalem was encamped at Riblah. This city, which

stands at the northern extremity of the fertile valley of Cælo-Syria, the modern Buká, seems to have been a favourite camping-place of the invaders of Syria, as both Necho (2 Kings xxiii. 33) and Nebuchadnezzar (2 Kings xxv. 6) held courts there. The Babylonian king had just commenced, or was preparing, to enter upon his long siege of Tyre, which lasted some thirteen years (B.C. 586–573). There have recently been discovered in the rocky gorges of the Lebanon two valuable inscriptions, which prove the presence of Nebuchadnezzar in Syria at this time. The first of these was found by Dr. Looitved, the Danish Consul at Beirut, in August, 1880, on the rocks near the mouth of the Nahr-el-Kelb, or Dog River (the classical Lycus), a short distance north of Beirut. I published a translation of the best preserved portion of this inscription in the *Athenæum* (Oct. 29, 1880, p. 563). The inscription is evidently not historical, but relates to some of the great works carried out by the king in Babylonia. The inscription was probably cut by some of the soldiers of the Great King who formed the garrison placed at this important post during the siege of Tyre.

A few months ago, as described by M. Ganneau in the *Times*, M. Pognon, the chief Interpreter of the French Consulate at Beirut, discovered a long inscription engraved upon the rocks of the Wady Birsa, a short distance from Hermul in the Lebanon. The inscription was much injured, and the figure of Nebuchadnezzar, which would have been a valuable addition to our gallery of Assyrian and Babylonian portraits, was too mutilated to be recognised. This inscription, like the one at the mouth of the Nahr-el-Kelb, is not historical, but contains a long account of the king's works in Babylon, and the offerings he made to the temples.

Unsatisfactory as these records are in not affording us historical information from a Babylonian point of view respecting the wars in Syria, they are valuable as showing the presence of the royal armies of Babylon in the Lebanon and the regions of Cælo-Syria. The inscriptions near Hermul are only a few miles from the village of Rabli,—the ancient Ribla,—and must have been cut under the personal superintendence of the great king. It is most probable, as suggested by M. Pognon, that the Wady-Birsa was an emporium where the wood-cutters of the Babylonian king brought the beams of cedar which they had cut in forests of Lebanon to be trimmed and prepared for transport to Babylon. In the India House inscription Nebuchadnezzar speaks of the temples being decorated with beams and planks of cedar which he brought "from the verdant Lebanon."

The direction of the siege of Jerusalem seems to have been in the hands of a commission composed of those important officials, and headed by Nebuzaradan. As we read in Jer. xxxix. 3, "And all the princes of the king of Babylon came in, and sat in the middle gate, *even* Nergal-sharezer, Samgar-nebo, Sarsechim, Rab-saris, Nergal-sharezer, Rab-mag." In our authorised version the names of officials and the offices they held were confused, so we may arrange these names as follows:—

- | | | |
|--------------------|-----|-------------------------|
| 1. Nebuzaradan | ... | "Captain of the Guard." |
| 2. Nergal-sharezer | ... | — |
| 3. Shamgar-nebo | ... | — |
| 4. Sarsechim | ... | The Rab-saris. |
| 5. Nergal-sharezer | ... | The Rab-mag. |

All these names are purely Babylonian, and their equivalents in the cuneiform character may be ascertained from the inscriptions of the period:—

- | | |
|----------------------------|----------------------------------|
| 1. <i>Nebu-zar-adan.</i> | 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 |
| בְּנִיזְרָאדָן | NABU - ZIRA - IDDI - NA |
| | <i>Nebo has given seed.</i> |
| 2. <i>Nergal-sharezer.</i> | 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 |
| נֶרְגַל שַׂרְאֲצֻר | NERGAL RA ŠAR - UTZUR |
| | <i>Nergal protects the king.</i> |
| 3. <i>Shamgar-Nebo.</i> | 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 |
| שָׁמְגַר נְבוֹ | SUM - GAR - NABU |
| | <i>Reverenced is Nebo.</i> |
| 4. <i>Sarsechim.</i> | 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 |
| שַׂרְשַׁעִים | ŠAR - SU E - KI - IM |
| | <i>The king makes wise.</i> |

The first of the Nergal-sharezers is a most important person, as he afterwards became king of Babylon, and was of royal blood. In the Egibi contract tablets of the latter part of the reign of Nebuchadnezzar we find *Nergal-sarra-utzur* taking part, as well as in the reign of his successor, Avil Marduk 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 𒍪 the Evil Merodach of the Scriptures (2 Kings xxv. 27). He calls himself in these

over nature and the fortunes of mankind. We are not without many traces of this observation of the stars in the Hebrew writings. In that beautiful book so full of all appertaining to desert life, the book of Job, we have numerous references, as, for example, Job iii. 9: "Let the stars of the twilight thereof be dark. Let it look for light, but have none. Neither let it behold the eyelids of the morning." "Behold the height of the stars, how high they are" (Job xxii. 12). "Canst thou bind the cluster* of the Pleiades, or loose the bands of Orion? Canst thou lead forth the Mazzaroth in their seasons? or canst thou guide the bear with her train?" (xxxviii. 31, 32). And the beautiful simile from shepherd life: "He telleth the number of the stars; he giveth them all their names" (Ps. cxlvii. 4, R.V.). And this very symbolism, so familiar to Abram the Chaldean, is made the means of foreshadowing one of the most important prophecies: "And he brought him forth abroad, and said, Look now toward heaven, and tell the stars, if thou be able to number them. And he said unto him, So shall thy seed be" (Gen. xv. 5).

At the time when Abram left his Chaldean home, the astronomy of Chaldea had attained nearly as high a development as it ever reached, and so the phases of the moon, the measurement of time by the stars, &c., would be known to him and some of the family, and no doubt some of the servants and followers of Terah were worshippers of the moon and stars.†

We now turn to the Hebrew record, and we find the first step in the migration was the removal from Ur of the Chaldees to Haran—"And Terah took Abram, his son, and Lot, the son of Haran, his son's son, and Sarai, his daughter-in-law, his son Abram's wife; and they went forth with them from Ur of the Chaldees, to go unto the land of Canaan, and they came unto Haran and dwelt there" (Gen. xi. 31). Considerable discussion has taken place as to the site of Haran, but inscriptions now before us seem definitely to settle this question. I will first of all take the various references to this city which occur in the Hebrew Scriptures. In addition to the reference above quoted and its repetition (xii. 5), we have also the command of Jacob to flee from Esau—"Now, therefore, my son, obey my voice; arise, flee thou to Laban, my brother, to Haran" (xxvii. 43); and bearing upon this we read

* Really "family."

† The worship of the stars was prohibited to the Jews (Deut. iv. 19), but this did not debar them from admiring them, studying them, and deriving most beautiful similes from them.

The epithet applied to Cyrus in the inscription,

“Cyrus, king of Anzan, his little servant,”

is a remarkable one on account of its resemblance to the words of the prophet Isaiah, “That saith of Cyrus, He is my shepherd [prince], and shall perform all my pleasure.” Again, “Thus saith the Lord to his anointed, to Cyrus, whose right hand I have holden to subdue *nations* before him” (Isaiah xlv. 28 ; xlv. 1).

There we may conclude that in B.C. 550 Cyrus, by overthrowing the allied tribes under Astyages, and assuming the crown of Media himself, acted as a deliverer to the weakened empire of Babylonia, and was regarded by the people as a saviour raised up by the great god, Bel-Merodach.

The Median affairs and the war with Cræsus, king of Lydia, which culminated in the burning of Sardis occupied the attention of Cyrus for the next ten years, and it was not until B.C. 540 he began his war against Babylon. The movements of Cyrus appear to have been very carefully watched by the Babylonians and recorded in the Chronicle. Thus, under date of the *ninth* year of Nabonidus, that is B.C. 547, we read: “Nabonidus, the king, was in the city of Teva, the son of the king (Belshazzar), the chieftains, and the soldiers were in the land of Akkad (North Babylonia).” “The king till the month Nisan (first month) to Babylon went not, Nebo to Babylon came not, Bel went not forth.” “In the month

Nisan, the mother of the king (~~𐎶𐎵𐎶~~ 𐎶𐎵𐎶 *um sarrî*) in the fortified camp on the Euphrates above Sippara (𐎶𐎵𐎶 𐎶𐎵𐎶 𐎶𐎵𐎶 Si-par) died. The son of the king and the soldiers for three days weeping was made. Also in the month Sivan (third month) in the land of Akkad there was weeping made over the mother of the king. In the month Nisan

Cyrus, King of Persia (𐎶𐎵𐎶 𐎶𐎵𐎶 𐎶𐎵𐎶 Mat Par-su), his army gathered and below Arbela the river Tigris he crossed. The chronicle is here mutilated, and it can only be seen that Cyrus marching across the northern portion of the Euphrates valley levied tribute of a distant king. This was probably one of the campaigns connected with the war against Cræsus, and the rising power of the now united Medes and Persians was anxiously watched by the Babylonians. Nabonidus, judging from this chronicle, appears to have been a weak ruler, neglecting the affairs of state and religion, and leaving the government, or, at least, the command of the army in the

hands of his son 𐎶 𐎠𐎺𐎠 𐎠𐎺𐎠 𐎠𐎺𐎠 𐎠𐎺𐎠 𐎠𐎺𐎠 𐎠𐎺𐎠 *Bel-sarra-utzur*. The king appears to have spent most of his time in the city of 𐎶𐎠𐎺𐎠 𐎶𐎠𐎺𐎠 *Te-va-a*, which Mr. Pinches thinks was one of the quarters of Babylon, probably on the west bank of the Euphrates.

The mourning made for the mother of the king, who died in the camp of her son's army, would lead us to regard her as a woman of importance, and probably of royal parentage.

I would suggest, as a solution of the statement of the writer of the book of Daniel (v. 2), that Belshazzar was the son of Nebuchadnezzar; whereas the inscriptions prove him to have been the son of Nabonidus,—that his grandmother may have been a daughter of Nebuchadnezzar, who had been given in marriage to *Nabu-baladh-su-ikbi*, the father of Nabonidus, and thus on his mother's side he would have been the son of Nebuchadnezzar. From the seventh year of his father's reign (B.C. 549) until the fall of the empire, he appears to have been the leading spirit and ruler of the kingdom, and this may account in some measure for his prominence in the book of Daniel.

In his cylinder inscription found in the Temple of the Moon-god at Ur (Mughier), Nabonidus thus prays for his son (I have given the transliterated text. The inscription is printed in W. A. I., vol. i., pl. 68, col. lines 19 *et seq.*):—

<i>Text.</i>	<i>Translation.</i>
1. YATI, NABU-SAID ŠAR BABILI	As for me, Nabonidus, king of Babylon
2. INA KHIDHU IZUTI-KA	In the fulness of thy
3. RABUTI VA ZIPANI VA	Great divinity (grant me
4. BALADHUT MURUKUTI	Length of life
5. ANA (YUMI RUKUTIN)	To remote days,
6. VA SA BEL ŠARRA-UTZUR	And for Belshazzar,
7. ABLU RISTU	My first-born son,
8. TZIT LIBBI-YA*	The offspring of my heart.
9. PU LUKHTI ILUTI-KA RABUTI	Reverence for thy great divinity
10. LIBBUS-SU TAKIN	Establish thou in his heart.
11. AI-IRSA	May he not be given
12. KHI DITI	To sin.
13. LA LEKHIAVVI.	

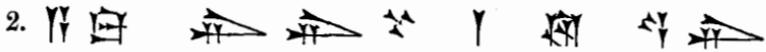
* The expression *ablu ristu tzit libbi*, when literally translated, loses much of its beauty; it may be rendered "My first-born son, the thought or desire of my heart."

It is evident from the chronicle inscription that the whole brunt of the short struggle against the invader fell upon Belshazzar, who perished on the night of the capture of Babylon.

The inscription reads as follows :—

1. 
 INA ARKHI DUZI D.P. KU - RAS ZAL - TUV INA
In the Month Tammuz Cyrus fighting in the

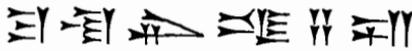

 RUTUV INA ELI
city of Rutu upon

2. 
 NAR NI - ZAL - LAT ANA LIBBI ZAB - NI
the river Nizallat to the midst of the army

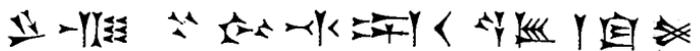

 D.P. AKKADI KI EBI - SU
of Akkad. He made

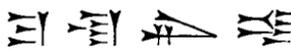
3. 
 NISI D.P. AKKADI NAPALKATTA IZRUKHU
The men of Akkad a revolt raised and the


 NISI TIDUKI YUMU XIV SIPPAR
fighting men on the 14th day the city of Sippara

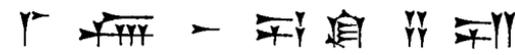

 BA - LA ZAL - TUV ZA - BIT
without fighting took.

4. 
 NABU - NAID INNABIT YUM XVI UG - BA - RU
Nabonidus fled (and on) the 16th day Gobyras


 PIKHAT MAT GU - TI - UM U ZABANI KU - RAS
prefect of the land of Gutium and the soldiers of Cyrus


 BA - LA ZAL - TUV
without fighting

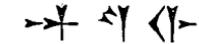
5. 
 ANA BABILI ERUBU ARKU NABU - NAID KI
To Babylon entered. Afterwards when Nabonidus


 IRKA - SA INA BABILI ZA - BIT
had bound into Babylon he brought.

Such is the brief account which a contemporary scribe gives of the fall of Babylon. The narrative is most important for our consideration on account of the great light it throws upon this important event, enabling us to fix the year, month, and day of the capture of the city, and as proving its agreement with the statements of the classical writers and the author of the book of Daniel. The ancient writers all agree that the fall of Babylon took place by a surprise-attack on the night of a great festival. Herodotus thus describes it:—"The outer part of the city had been already taken, while those in the centre, who, as the Babylonians say, knew nothing of the matter owing to the extent of the city, were dancing and making merry, for it so happened that a festival was being celebrated." So also Xenophon says, "When Cyrus perceived that the Babylonians celebrated a festival at a *fixed time*, at which they feasted for the whole night." Or do the Hebrew prophets seem unaware of this surprise of the city of the doomed Chaldeans, as in Jeremiah, "In their heat I will make their feasts, and I will make them drunken, that they may rejoice"; and again, "I will make drunk her princes and her wise men, her captains and her rulers and her mighty men" (Jer. li. 39, 57); also, "The night of thy pleasure is turned to horror;—the table is prepared, there is eating and drinking." We have also the record of the writer of the book of Daniel (Dan. v. 1). Among the inscriptions obtained from Babylon is a large tablet con-

VOL. XVIII. K

taining, when complete, a calendar of the year with various notes appended to each day as to its being lucky or unlucky, or a fast or feast day. I published a *résumé* of this important inscription some years ago in the *Academy*. I have since made a second copy of the tablet, which I have compared with fragments of other tablets of the same class. The calendar of the month Duzu,  or Tammuz of the Chaldeo-Aramean calendar, the month in which Babylon was taken, is, fortunately, complete, and we are thus able to obtain the festivals celebrated in it. The month Duzu or Tammuz, corresponding to our June or July, was the midsummer month, and, as such, was called "the month of the benefit of the seed." It derived its name from the god Duzu, or Tammuz, the Adonis of the Babylonian and Phœnician pantheon, whose worship was adopted by the idolatrous Jews, as we learn from the prophet Ezekiel: "He brought me to the door of the gate of the Lord's house, which was towards the north; and, behold, there sat women weeping for Tammuz" (Ezek. viii. 14). This worship of Tammuz, whose Babylonian name Duzu or Tamzi means the "Sun of Life," was a very favourite one with the Babylonians, and the festivals were celebrated with great ceremony, the chief of them falling in the month which derived its name from the god. The army of Cyrus, commanded by Gobyras, entered the city "without fighting" on the 16th of the month Tammuz, or, most probably, on the night of the 15th. We now will examine the calendars so far as they relate to this important month up to the day of the capture of Babylon.

1.   

ARKHU DUZU YUM I.

KI - IS - TI D. SAM - SI

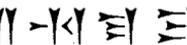
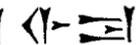
Month Tammuz 1st day

the tree of the sun-god

2.  

YUMU II. BI - KI - TUV

2nd day of Lamentation

3.      

YUMU III. KHU - BA - BA

I - LI

NU

RA U



MA TAP - SE

4. [𐎶] 𐎶 𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶 𐎶 𐎶𐎶𐎶
YUMU

5. [𐎶] 𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
YUMU V. ZI GU MAGARU

The fifth day an offering is fortunate.

6. 𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
YUMU VI. NA - AS - PAR - TI D.P. Samas U
The 6th day the adornment of the sun-god and

𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
D.P. Istar GAM - LU
Istar they complete

7. 𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
YUM VII. BAT AB - SE - GI - DA
The 7th day an omen is fortunate

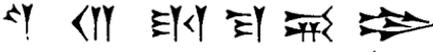
8. 𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
YUM VIII. SU - BAT IZ - BA - TU
The 8th day a seat one takes

9. [𐎶] 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
YUM IX. GIBIR TU - TU - PA
The 9th day fire burns

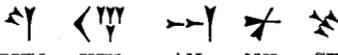
10. 𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
YUM X. TA - NU - KU D.P. EREM DEM AL - DIB - BA
The 10th day of the magician a divination he takes

𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
NA AN DIB BA E - DIR - TUV
It is taken (and) it is obscure

11. 𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶 𐎶𐎶𐎶
YUM XI. DENU MA - GIR
The 11th day a judgment is good.

12. 
 YUM XII. DA - BA - TAN SARRI
The 12th day fortunate for the king

13. 
 YUM XIII. ISTARTUV MAGAR libbit MAGAR
The 13th day the goddess is favourable a divination is good

14. 
 YUM XIV. AN - NU SE
The 14th day one is not fortunate

15. 
 YUM XV. ANTALU D.P. SIN
The 15th day an eclipse of the moon.

This tablet, written partly in Akkadian and partly in Semitic Babylonian, reveals to us very clearly the superstitious character of the Babylonians, their blind trusting in omens and divinations, and is an interesting commentary on the book of Daniel. It will be noticed that the month opens with a festival of the Sun-god, that is Tammuz, as the summer sun, restored in all his beauty to his bride Istar, the Moon. This festival is, as I have shown, the same as that of Atys, the Phrygian Adonis, celebrated at the same time. The festival began with the cutting of the sacred fir-tree in which Atys had hidden himself, a symbol of the dark winter which had killed the ruddy summer sun. This worship of Atys and the mother goddess Amna was probably introduced into Phrygia from Babylonia, and the account of the festivals agrees with the records in this inscription. The fir-tree in which the god Tammuz had hidden himself is referred to in a hymn in the British Museum, which states that the sacred dark fir-tree which grew in the city of Eridhu was the couch of the great mother goddess, and in it dwelt the spirit of Tammuz (W. A. I., vol. iv., p. 32). The sacred tree having been cut and carried into the sanctuary of the temple, there came the search for Tammuz, when the devotees ran wildly about, weeping and wailing for the lost one, and cutting themselves with knives. The remarkable tablet in the British Museum, which contains the legend of the descent of Istar into the under-world in search of Tammuz, has a rubric

attached, which gives the direction for the ceremonial as celebrated in the temple. The statue of Tammuz was placed on a bier and followed by bands of mourners weeping, and crying, and singing a funeral dirge. This dirge is used by Jeremiah in bitter sarcasm against Jehoiakim, whose wicked reign had filled Jerusalem with blood (2 Kings xxiv. 2). "They shall not lament for him, saying, Ah! me, my brother; ah! me, my sister; ah! me, Adonis (Adonai); ah! me, his lady." The same festival seems to be referred to by the prophet Amos in the words, "I will make it as the mourning for the only son"; Tammuz being called the only son (Amos viii. 10). The festivals of Tammuz and Istar, his sister and wife, extended over all the first half of the month, the day of lamentation being the second, and the sixth the procession. On the 15th day was celebrated the great marriage feast of Istar and her husband Tammuz, and it was a wild orgy, such as only the lascivious East would produce. It is here marked as the day of an "eclipse of the moon"; but, as I have shown (*Athenæum*, July 9, 1881), this is a metaphoric expression for the meeting of the Sun-god and his bride. It was this festival that Belshazzar was celebrating on the night when Babylon was taken, and it was, perhaps, the only great festival in which "the king, his wives and concubines," would be present.

The description of this festival, given by the writer of the book of Daniel, is quite in agreement with our knowledge of Babylonian life; and, indeed, there may have been an additional air of desperation imparted to the ceremony by the fact that the prince must have known how, by the flight of his father and the overthrow of the army, all was lost; and this was his last feast. The bringing forth of the gold and silver vessels,—the treasure of the sacred temple of the Jews,—was an act such as became the doomed king. These vessels would be stored in the Temple of Bet Saggal, the Temple of Bel Merodach, and must have been brought thence to the royal palace to gratify the impious whim of the last of Nimrod's line, whose thoughts have found such poetic expression at the hand of Mr. Edwin Arnold ("Belshazzar's Feast") :—

"Crown me a cup, and fill the bowls we brought
From Judah's temple when the fight was fought;
Drink, till the merry madness fills the soul,
To Salem's conqueror, in Salem's bowl.
Each from the goblet of a god shall sip,
And Judah's gold tread heavy on the lip."

The wine, the flowers, the music, the myriad lamps, and blazing tripods which scented the air around with sweet perfume, and, above all, the azure vault of an Eastern summer sky, form a picture that ill becomes the deathbed of an empire. Yet such it was. The tramp of armed men, the clash of swords and spears, a short, sharp struggle, and Babylon, the glory of the Chaldeans, became the victors' prize.

So on that night, Tammuz the 15th, B.C. 539, Babylon, the glory of the Chaldeans, fell, and Cyrus became king.

There must have been great joy among the Hebrew captives at the fall; and with what joyous hearts must they have welcomed Cyrus, "the anointed." He who was to say to Jerusalem, "Thou shalt be built, and to the Temple, Thy foundations shall be laid" (Isaiah xlv. 28). The inscribed monuments of this period throw a new and important, though at first startling, light upon the character of Cyrus. Judging by the passages in the xlv., xlv., xlv. chapters of Isaiah, the conqueror appears as "a man after God's own heart," an iconoclast, a rigid, stern monotheist and hater of idolatry. The selection of Cyrus as the deliverer of the Jews, and the exposition of the worship of Jehovah which the prophet Isaiah gives in these chapters, and which so closely resembles the praises of Ahuramazda in the Persian inscriptions and the Zend Avesta, have usually been considered by commentators to have been in some measure due to the purity of the Zoroastrian faith, of which Cyrus was considered to have been a follower. In support of this supposition we may compare the following passages from the Hebrew writings, with others from the inscriptions of a true Zoroastrian king of Persia, namely, Xerxes, the son of Darius :—

"I have made the earth, and created man upon it ;
I, even my hands, have stretched out the heavens ;
I form the light and create darkness ;
I make peace and create evil."

Isaiah xlv. 12 and 7.

"Oh, great god, Or Mazda, who is the greatest of the gods, who created this earth, who has created that heaven, who has created mankind, who has given happiness to man."—*Inscript of Xerxes at Van.*

Passing now to the cylinder inscriptions of Cyrus, inscribed soon after his occupation of Babylon, we meet with the following passage :—

"The gods dwelling within them (the temples) to their places I restored and the gods of the land of Sumir and

Akkad whom Nabonids to shame had put. To the midst of Suana (the sacred quarter of Babylon) by command of the great lord Merodach, in peace in their dwellings he caused to dwell. Each day to Bel and Nebo who prolong my days, perfecting and blessing my happiness; to Merodach, my lord, I spoke for Cyrus his worshipper, and Cambyses his son. To compare this passage with the words of the prophet, "Bel boweth down, Nebo stoopeth. They stoop, they bow down together; they could not deliver the burden, but themselves are gone into captivity" (Isaiah xlvi. 1, 2) would seem at first to condemn these chapters; but when we awake to the fact, now most conclusively shown by the inscriptions, that Cyrus, though a Persian, was not a Zoroastrian, but an idolater, we may yet see the plausibility of the prophet's words, whose vision of Cyrus as the chosen deliverer and the destroyer of Babylon, of whom Nebo and Bel were the divine representatives, had carried him away in his praise of the great one."*

In the genealogy which Cyrus gives in the above-mentioned Cylinder we have restored to us the lost line of Persian kings prior to Darius Hystaspes.

He there says:—

"I am Cyrus, King of multitudes, the great King, the powerful King, King of Babylon, King of Sumir and Akkad, King of the four quarters, son of Kambyses the great King of the City of Ansan, grandson of Cyrus, the great King, King of the City of Ansan, and great-grandson of Tiespes, the great King, King of the City of Ansan."

The genealogy of the Persian conqueror, which is preserved to us in this inscription, is most important, as it affords us a key to the extremely tolerant, if not indifferentist, policy of Cyrus in religious matters. It will be noticed that from the time of Tiespes (𐎶 𐎠𐎺𐎠𐎹𐎶𐎠𐎹𐎶, *Si-is-pi-is*), the Achæmenian, the ancestors of Cyrus do not assume the title

* The Assyrian of the passage is from W.A.I., vol. v., pl. 35, line 32.

"Ilani asib libbi su-nu ana asri sunu utir va,
 Ilani mat Sumiri u Akkadi sa DP Nabu-naid ana
 Asgati bil ili useribi. Ana kirib Suanna (ki) ina,
 Kibiti DP Marduk bil rabū ina salimiti ina
 Mastaki suna usesib. Yumi sam makhar Bel u,
 Nabu sa araku yumi ya litamu u litibakaru,
 Amata dunki ya ana Marduk bil ya ikbū sa
 Kuras palikh su u Kambuzi ya abil su.

of the Kings of Persia, but of "the City of Ansan,"
 𐎠𐎹𐎧𐎺 𐎠𐎹𐎧𐎺 𐎠𐎹𐎧𐎺 𐎠𐎹𐎧𐎺, D.P. *An-sa-an*; and, in the chronicles
 of Nabonidus, Cyrus is not called King of Persia until
 B.C. 547, two years after the overthrow of the Median
 kingdom and his assumption of the royalty over that
 kingdom.

The position of the land of Ansan is very clearly
 established both by the geographical tablets in the Royal
 Library of Assyria, and by local inscriptions from the land of
 Elam, of which the city and district of Ansan were an
 important part. In a geographical tablet (W. A. I., ii., 47, 18),
 the land of *Anduan*, which, we are told, was to be pronounced
 Ansan, is given as a synonym of Elamtuv, or Elam.

This fixes, in a general manner, the locality as on the
 east of the Tigris, in the land now called Khuzistan. In the
 Elamite inscriptions of the kings of Susa, brought to this
 country by Mr. Loftus, the kings assume the title of GIG.

SUNKIK ANZAN (✱ 𐎠𐎹𐎧𐎺 ✱) "strong ruler of Ansan," as do
 also the rulers whose inscriptions are carved on the rocks at
 Kul Farun and Mal Amir, in the Bakhtiary Mountains, a little
 east and south-east of the ruins of Susa. These facts seem
 to show that we must look for this important city in the
 regions of the Bakhtiary Mountains and the fertile valleys of
 the Karun Disful, and other rivers of that region. The
 travels of Sir Henry Layard and the Baron Auguste de Bode
 in these districts show how full the country is of memorials
 of the past,—rock-cut sculptures and inscriptions in the
 mountains, and vast mounds, marking the sites of ruined
 cities on the plains, yet the whole district is practically
 untouched by the archæologist.

There are two important plains here, both of which have
 extensive remains of the cities of past inhabitants, which
 entitle them to be the "land of Ansan." The first of these,
 plain of Ram Ormuzd, lies to the east of the Bakhtiary
 Mountains, and in the district of Arabistan. It was a favourite
 abode of the Persian kings of the dynasty of Darius
 Hystaspes, and of the later Sassanian rulers, but seems to
 me to be too far eastward to be a dependency of the King of
 Susa and Elam. The second locality where we may seek to
 place the royal city of Cyrus and his ancestors is in the plain
 of Mal Amir, which is thus described by Baron de Bode
 (*Travels in Luristan and Arabistan*, chap. xvii.) :—"The plain
 of Mal Amir is above two farsangs in length from south to
 north, and in some places nearly two in breadth. On this

plain are several artificial mounds, one of which may be compared with the great mound at Shush [the ancient Sushan], near Disful, in height. It lies about three-fourths of a farsang to the east of some natural caves in the hills; the intervening space, both in the plain and up the face of the mountain, bearing traces of former habitation." In these caves are a curious series of sculptures of divinities and attendant worshippers, and a long inscription, in which (Layard's *Inscriptions*, 36-37) the kings assume the title of Kings of Ansan. Its close proximity to Sush, the ancient Susa, which afterwards became the residence of the Persian kings (Esther i. 2), would give it more claim to be the Ansan of the Elamite and Babylonian inscriptions than the plain of Ram Ormuzd. In his valuable paper on this cylinder of Cyrus (*Journal Royal Asiatic Soc.*, vol. xii., New Series, p. 76 *et seq.*), Sir Henry Rawlinson records a curious tradition respecting this region Ansan. He says:—"The Greek and Roman writers are entirely silent as to the country and city of Ansan, in Western Persia." There is, however, a notice of Ansan, or Assan, in a very early and learned Arabic writer, Ibn-el-Nadím, who had unusually good information as to genuine Persian traditions. This writer ascribes the invention of Persian writing to Jamshíd, son of Virengan (who, with the Zoroastrians, was the eponym of the Persian race), and adds that Jamshíd dwelt at Assán, in the district of Tuster, the modern Shuster" (*Kitab al Fihrist*, p. 12, line 22).

These facts lead us, therefore, to look for the royal city of Cyrus in the region of Mal Amir. The rise of this Sub-Persian, if we may so call it, kingdom, founded by Tiespes, the Akhæmenian, would seem to be, judging by generations about synchronous with the fall of the Assyrian empire, and was no doubt the result of the weak state of the Elamite empire after the overthrow of that kingdom by Assurbanipal. In these events we may see perhaps an explanation of the prophecies of Jeremiah regarding the land of Elam:—"The word of the Lord came to Jeremiah, the prophet, against Elam, in the beginning of the reign of Zedekiah, king of Judah" (B.C. 598); "Behold, I will break the bow of Elam, the chief of their might;" "and I will set my throne in Elam, and will destroy from thence the king and princes, saith the Lord" (Jer. xlix., 34-39). In these regions Cyrus and his ancestors would be brought in close contact with the Turanian, Shamanistic creeds of the Elamites, the Proto-Medes, and the other nations of this region, and their creed would assume rather the aspect of Magianism, in contradistinc-

tion to the Mazdean creed of Darius and his Zoroastrian followers.*

A proof of the non-Zoroastrian creed of Cyrus and Cambyses is shown in the fact that Gomates, the Magian, who declared himself to Bardes, the Barziya of the inscriptions, the son of Cyrus, was a distinct opponent of the Zoroastrian rites. For Darius, in the Behistun inscription, states that he restored the sacrifices, rites, and sacred chants which Gomates, the Magian, had taken away. Had Cyrus been a rigid Zoroastrian Monotheist, the claimant who personified his son would hardly have acted in this heretical manner. The inscriptions at Mal Amir of the King Suttur-Kit, son of Khanni-Kit, and which represent the dialect of the population and the edicts of a dynasty reigning in the interval between the fall of Susa, B.C. 645, and the rise of the Akhæmenian sub-kingdom of Ansan, are cognate in dialect with the Proto Median or Amardian of the second column of the Behistun inscription. It was among this people that the ancestors of Cyrus ruled, and so little was the great Zoroastrian god known to them, that Ormuzd is called *annap Arrinyam* (Behistun Col. iii., 77-79),—"the god of the Aryans,"—in their version of the royal proclamation. These facts show that all the surroundings of Cyrus and his ancestors were non-Aryan and anti-Mazdean; and these, taken in conjunction with the facts that the name of Cambyses and Cyrus, which are the typical ones of the dynasty, do not admit of a satisfactory explanation by Aryan philology, would seem to dispel for ever the idea of the Zoroastrian creed of Cyrus, or of the apparent references to it in Isaiah. The same conclusion, on somewhat different grounds, seems to have been arrived at by Canon George Rawlinson (*Contemp. Rev.*, Jan., '80, p. 93), for he says, "A wholly new light is thrown on the character of the great Persian monarch, who, instead of being inspired, as was supposed, by Monotheism, and an almost fanatical hatred of idolatry, appears to have been a politic prince, cool, cautious, somewhat of an indifferentist in religion, and, if not a renegade from the faith of his fathers, at any rate so broad in his views as to be willing to identify his own Ahuramazda, the maker of heaven and earth, the all-bounteous Spirit, alike with the one god of the Jews," or with Merodach, the great Lord of the Babylonians.

The conduct of Cyrus, with regard to the chief gods of the Babylonians and the God of the Jews, is exactly in accordance

* On the difference of the creeds see Lenormant's *Chaldean Magic*.

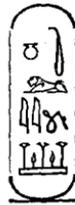
with that of Cambyses his son on a similar occasion in Egypt. It is recorded by Herodotus that Cambyses, after his Ethiopian expedition, returned to Memphis, where he found the people rejoicing over the festival of an Apis bull. He commanded the sacred bull to be brought before him, and then manifested his scorn for the superstition of the Egyptians by thrusting his sword into the beast's thigh. The thigh-bone was much injured, but the priests took away their wounded idol, and nursed him so skilfully that eventually he recovered and lived to a good old age.

Notwithstanding the statement of Herodotus, which seems to have monumental confirmation, the fact that the Apis bull, born in the reign of Cambyses, received divine honours from the Persian king, is proved by the Apis tablets of that period. His conforming to the religio-political necessities of the situation, after his conquest of Egypt, is brought very clearly before us in the inscription on the statue of the official named Uza-hor-em-pi-ri-is in the Vatican (Brugsch. *Hist. Egypt.*, 2nd edit., vol. ii., p. 305). We there read the words of the

official, who says—"When King Kanbut



(Cambyses) came to Sais he entered the temple of the goddess Neith in person. He testified in every good way his reverence for the great exalted, goddess. He did this because I made him acquainted with the high importance of the holy goddess." We may, therefore, conclude that Cambyses was following in the footsteps of his equally politic father, and was guided in these acts by the precedent his father had set him in Babylonia. Even Darius, who prided himself on his pious veneration for the great god Ahuramazda, was so far influenced by the circumstance of his rule in Egypt as to build a great temple to Ammon in the oasis of El Kargeh, and to adopt a prenomem embodying the name of the sun-god, Ra, namely, *Ra-mer-i* Ntariush. It matters but little what were the motives which induced Cyrus to restore the Jews and honour Jehovah by rebuilding the Temple, in that in doing so he was fulfilling the decree of the Most High; and, though his motives may have been selfish and political, yet he was unconsciously acting as the servant of Jehovah.



The statement in the Chronicle inscription that Goybras, the prefect of Gutium, was the general who captured Babylon, is in accordance with the statements of classical writers. Pliny states that "the large city of Agranis (Agadhe, or

Akkad, part of Sippara*), which lay on the Euphrates where the Nahr Malka flowed out of the river, was destroyed by the Persians, and Gobares, so some say, had drawn off the Euphrates (see *ante*, p. 20).” Xenophon also states that the capture of Babylon was effected by Gobyras, and that his division was the first to reach the palace.

Cyrus himself did not enter Babylon until later in the year, —namely on the 3rd day of Marchesvan, four months after,— when he “proclaimed peace to all Babylon,” and Gobyras, his governor and governors, he appointed.†

This statement, which is given both in the Cylinder and the Chronicle seems to show that Gobyras was made viceroy of Babylon during the reign of Cyrus. This brings us face to face with one of the most difficult problems of the chronology of this period, “the reign of Darius the Mede.” The identity of this ruler is only known to us from the book of Daniel, where he is twice mentioned: “And Darius the Median took the kingdom, being about threescore and two years old”; and again, “In the first year of Darius, the son of Ahashuerus, of the seed of the Medes” (Dan. v. 31; ix. 1).

It is here that we come in contact with the book of Daniel, and it will be necessary, in order to explain the matter and at the expense of being somewhat prosy, to enter fully into the details of the facts to be gathered from the inscriptions.

From the Chronicle inscription we get the following series of dates for the year of the fall of Babylon, B.C. 538 :—

1. Capture of Sippara, *Tammuz* 14th.
2. Capture of Babylon, *Tammuz* 16th.
3. Entry of Cyrus into Babylon, and appointment of Gobyras as the viceroy, *Marchesvan* 3rd.
4. Death of Nabonidus, *Marchesvan* 11th.

Among the dated tablets in the British Museum, the contracts give the following dates :—

1. Last date in the reign of Nabonidus, Elul 5th, in the 17th year.
2. First date in the reign of Cyrus, Kisleu 16th, in Accession.

An interval of 111 days.

* See my notes on this name in the Appendix to Mr. Hormuzd Rassam's paper on “Babylonian Cities.”

† *Ugaru* BP *Pikhati su (w) pikhatu in a Babili iptekid. Pikhatu*, a prefect, is in the Hebrew פיקח

We may, therefore, conclude that contracts were not dated in the reign of Cyrus until after the *third* or *eleventh* of Marchesvan, the days of the entry of Cyrus into Babylon, and the death of Nabonidus. There is, therefore, no space for the rule of Darius the Mede as an independent king, and no tablet has been found bearing his name.

Numerous theories have been proposed for the explanation of this difficulty, and will continue to be propounded as long as no monument of his reign, if such there was, is found.

The most prominent may be noted:—

I. That of the late Mr. J. W. Bosanquet, expounded very fully in the Journals of the Society of Biblical Archæology, that Darius Hystaspes and Darius the Mede were one and the same.

This system would, however, necessitate a complete disarrangement of the chronology of both Oriental and Western history, and is quite opposed to monumental evidence.

II. That Darius the Mede was Astyages, whom Cyrus had deprived of the Median throne in B.C. 550.

This is the theory most favoured by the writer of the *Speaker's Commentary on the Book of Daniel*.

III. That Darius the Mede was Gobyras acting as viceroy of Cyrus.

IV. That Darius the Mede was Cambyses, ruling partly in conjunction with his father.

With the newly-acquired evidence of the inscriptions of Cyrus and Darius before us, the two last seem to be the most tenable, especially that in favour of Gobyras.

The points most in favour of this theory seem to be that Gobyras, the *Ugbaru* of the inscriptions, being formerly prefect of Gutium, or Kurdistan, was ruler of a district which embraced Ecbatana, the Median capital, and "the province of the Medes" (Ezra vi. 2), and was, moreover, as his name indicates, a Proto-Mede, or Kassite by birth.*

That Cambyses was associated with his father is shown by

* I am inclined to think that the name Ugbaru of the Babylonians, and Gobyras or Gobares of the Greek writers, is a corruption of the Kassite name $\text{U} \text{---} \text{K} \text{---} \text{E} \text{---} \text{W} \text{---} \text{E} \text{---} \text{N} \text{---} \text{Y} \text{---} \text{K} \text{---}$ KHU-BUR-YAS, which would have been pronounced as GŪ-BURYAS, the Assyrian translation of which, according to the bilingual tablets (*Proc. Soc. Bib. Archæ.*, vol. iii., 38, and Dilitsch, *Die Sprache der Kossäer*, p. 25, No. 34) would be *Avil bel Matati*, "Man of the lord of the land."

the discovery of tablets dated in his eleventh year, and of his name appearing in the cylinder and other inscriptions in conjunction with that of Cyrus.

The death of Nabonidus and the accession of Cyrus closed the dark epoch of the Captivity, and opened the bright day of the restoration of Israel, a joy which finds expression in the Psalms of the Return (Ps. lxxxv. and Ps. cxxvi.) :—

When Jehovah turned again the Captivity of Zion, we
were like them that dream.

Then was our mouth filled with laughter, and our tongue
with singing.

Then said they among the nations, Jehovah hath done
great things for them.

Jehovah hath done great things for us, therefore we are
glad.

Turn again, O Jehovah, our captivity, as the rivers in
the South.

They that sow in tears shall reap in joy.

He that goeth forth weeping, bearing precious seed,
Shall doubtless come again rejoicing, bringing full
sheaves.*

Such was the outburst of grateful joy to Jehovah for the deliverance which he had wrought by the hand of Cyrus, His servant.

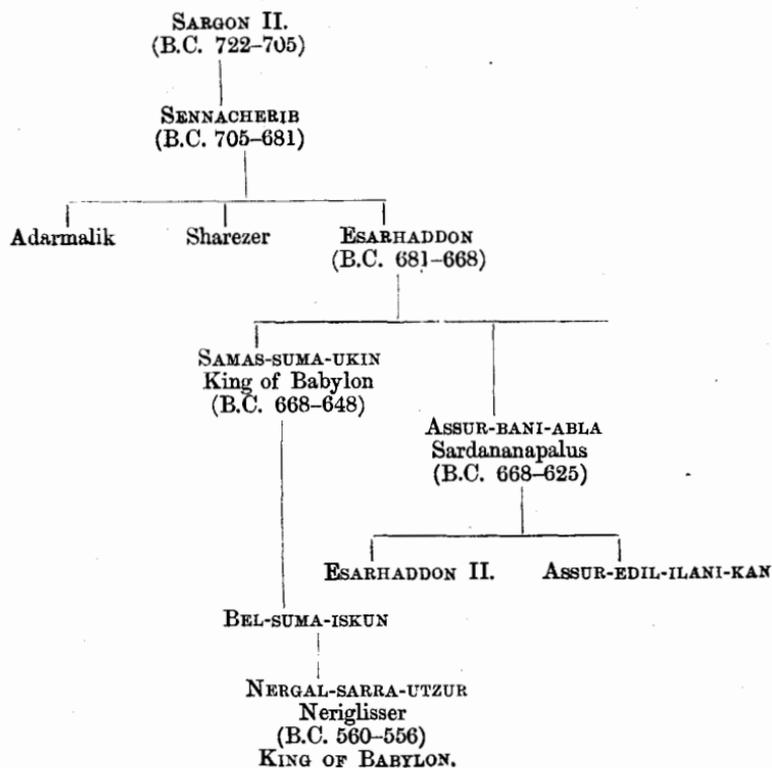
I have endeavoured thus far to show the various historical events which the Jews must have been witnesses of before and during the Captivity, and to point out how vividly, and with what minuteness of detail, these are foretold in the writings of the Hebrew prophets. These in some measure account for the remarkable changes which came over the people; but other and more potent forces lay in the religious and social influences to which they were subjected, in contact with the great civilisation of Chaldea.

* It is to be noted that, in this and other cases in the paper, Mr. Boscawen has given his own, or a different, translation of the sacred text.—Ed.

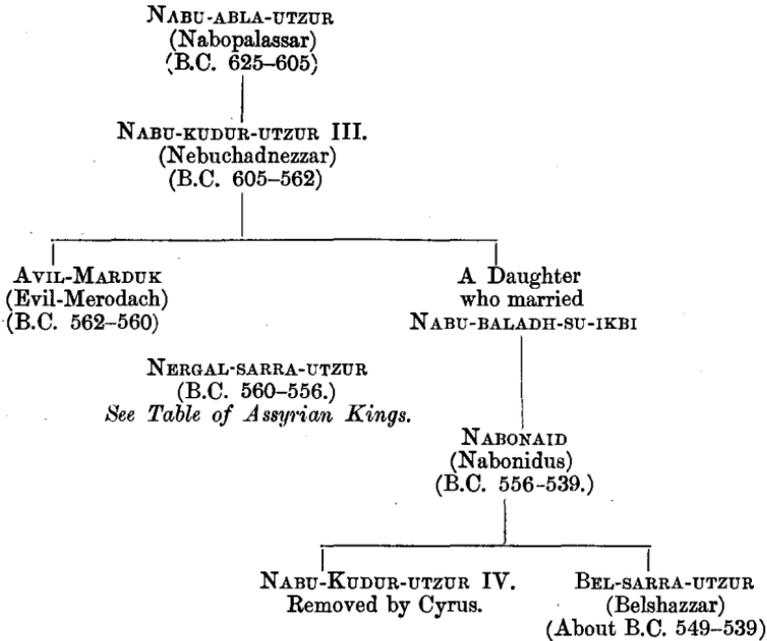
GENEALOGICAL CHART
OF
ASSYRIAN, BABYLONIAN, AND PERSIAN KINGS,

From B.C. 721 to 521.

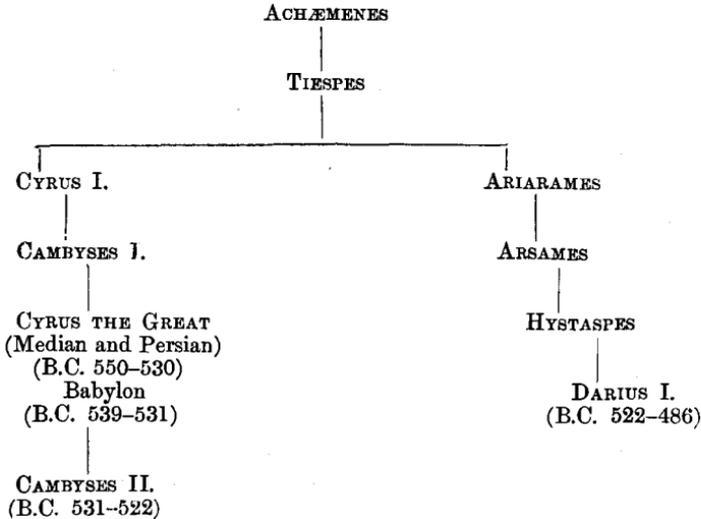
SARGONIDE DYNASTY.



BABYLONIAN KINGS.



PERSIAN KINGS.



The CHAIRMAN (Mr H. CADMAN JONES).—I am sure the meeting will unanimously authorise me to return its thanks to Mr. Boscawen for the very interesting glimpse he has afforded us into an important period. What must strike everybody as one of the most interesting questions in Jewish history is that with regard to the influences which were brought to bear on the Jews during their Captivity. Every one is familiar with the fact that the character of the people seems to have been changed during that time—that they were constantly falling into heathenism prior to their Captivity, but that after it they resisted heathenism in the most complete way. How such a great change could have been brought about in the course of seventy years is a most interesting problem; and it is to be hoped that further search into the Assyrian records will, in time, throw a flood of light upon the subject.

Mr. HORMUZD RASSAM.—I have but little to say upon the learned and most interesting lecture of my friend Mr. Boscawen. With regard to the tiles I discovered in the Palace of Belshazzar, I have already exhibited some of them here, and we are told by ancient historians that they portrayed certain hunting-scenes. In reference to the work I have myself done, I can safely say that, although I have been engaged in exploring and excavating for nearly forty years, my discoveries amount to but a drop in the ocean, in comparison to what I believe will yet be found. It is a disgrace, not to England alone—for England cannot work alone—but to Europe in general, that people do not join together and try to make a thorough examination of the ruins existing in those ancient countries. All Assyrian and Biblical students know that there must have existed a link between the cuneiform characters and what is called Syriac. Although I have been excavating for so long a period, I have found nothing whatever of the kind. There is, nevertheless, some connexion between the two languages to be found. I am almost certain, also, that we should find Jewish records both in Media and Babylonia. Last year, when I was in Mesopotamia, I was told that Assyrian inscriptions had been found in different parts of the border-land between Turkey and Persia, which means, of course, Media. I am sorry to say I was not allowed to go and examine them. The Turkish Government has shown lately a great deal of jealousy against our explorations, as they are told by mischievous men that they are fools to allow the English to take all their valuable antiquities away, and that they could make a fortune out of them. Even letters have been written to newspapers on the same subject, and have had a bad effect. It is said that the Ambassadors have done their best, but if Lord Dufferin would only do as Sir Henry Layard did,—that is, go to the Sultan and ask him,—permission would be at once given for carrying on the necessary excavations. It is deplorable that these inscriptions should be allowed to be broken and destroyed by the Arabs. The latter are actually excavating now, and we have lately received in the British Museum inscriptions dug up by the Arabs in our own trenches. There must always be a certain amount of loss by breakage, and so, when these antiquities are dug up, I have had inscriptions go to pieces as soon as they were exposed to the air. In this way we have lost most valuable relics. In consequence of the clandestine

manner in which excavations are carried on, wholesale destruction cannot be prevented. There are about twenty different Jews and Armenians who are trying to enrich themselves by the sale of these inscriptions. The Turks prohibit excavations, and these men, being unable to dig openly and in the light of day, are obliged to excavate at night. The consequence is, that for one inscribed object they procure whole, they break nineteen. You will find in the British Museum a cylinder I bought from three different people, and at the time I did not know that the pieces were all portions of the same record. It was found whole in the same soil, and the men who found it destroyed half an inch of the inscription by hacking it with a saw. They had made a contract with different Jews, and, as they had not found anything for a week previously, they cut the cylinder in three pieces and gave a piece to each. (Laughter.) It is a shame that England does not bestir herself. The relics we have in London and Paris are, comparatively speaking, insignificant in comparison to what I believe is still underground. I do not intend to go again to Babylonia, but I know that it is for the benefit both of those who love their Bibles and science that further discoveries should be made; and I have no doubt that some day inscriptions of the most valuable nature will be found which will surprise us more than all those already brought to light. What have hitherto been mysteries in the books of Daniel, Jeremiah, and Isaiah, have been verified by the already-discovered inscriptions, and most of the prophecies seem to have been fulfilled to the letter.

Rev. F. S. COOK, D.D.—It is said that the siege of Babylon, described by Herodotus as successfully carried out by Cyrus, is not the same as the siege which has been spoken of to-night, but a later one, by Darius. Is that the case?

Mr. BOSCAWEN.—It seems probable that it is one of the sieges to which Darius refers in his inscriptions. Babylon underwent so many sieges that confusion might have arisen on the part of even the later Babylonian priests who told Herodotus.

Rev. Dr. COOK.—You think that one name absorbed the other?

Mr. BOSCAWEN.—Yes; Nebuchadnezzar became very much, as Dean Stanley has said, a second Nimrod. Mr. Rassam spoke of broken inscriptions. There was one among the inscriptions obtained by Mr. Smith which was broken on the way to England. The name of Merodach-sarra-utzar appeared upon it, and I identified that monarch with Belshazzar. I gave the theory up, but have gone back to it again, because I am quite sure that for the last few years of the reign of his father Belshazzar was associated on the throne with him. Unfortunately, about a hundred tablets in the centre of the case were broken on account of a heavy piece of work being placed on the top of them. I am, however, quite sure that, as one inscription of this class was found, we shall obtain others.

Mr. W. GRIFFITH.—I think that some of the evidence Mr. Boscawen has spoke of will enable us to rectify the errors made by Herodotus. Although Herodotus was always a most patient gleaner of knowledge, and although he endeavoured to get at proofs, yet in many cases

he was deceived, for he had often to depend upon what has been called "the muddy stream of tradition." This may account for the discrepancies to be found in the accounts of the siege of Babylon as given by Herodotus and Daniel. It seems impossible to reconcile the statements of Herodotus respecting Babylonian history with those of Xenophon, still less those of both Greek writers with those of the Babylonian priest and historian, Berosus. It was once esteemed a probability that the account of Berosus, as to "Nabonnidus," joint-sovereign with Belshazzar, was accurate. I think this probability has been made a certainty by the recently-discovered monumental inscriptions. Similarly, after two thousand years, Daniel's solitary testimony respecting Belshazzar has been confirmed. The hearsay of Herodotus and the historical novel of Xenophon are now entitled to less weight than the corrected statement of the prophet. The papers read before the Victoria Institute corroborate the following assertion in the notes to the Speaker's Bible. On every page of Daniel undesigned coincidences with the now known external features of the age and localities in which the book was written and the prophet lived are to be found. "Incidental touches, delicate shades of expression, statements otherwise unintelligible, indicate the hand of one bred and resident in courts and among men with whom the monuments have made us familiar." We are certainly much indebted to Mr. Boscawen for the interesting account he has given us of the capture of Babylon, and for having identified not merely the capture, but the dates connected with it. Such minute coincidences as those he has pointed out to us carry with them almost the force of demonstration. As a matter of fact, we do possess some of the literary remains of this time. Sir H. Layard has given it as his opinion, founded on the imagery employed therein, that the "Book of Baruch" was written about this time. The history of Tobit, too, shows the literary power that was being developed in those days. It shows the power of genius and that ability to write novels and romances, which proved that the Jewish people were developing higher talent than they had done in former times; and I am of opinion that the Jews benefited by being carried away to Babylon. The Targums show that the activity of the Jews was very great in literature. A cursory consideration of the books of Jeremiah and Ezekiel would lead us to the same conclusion. Jeremiah's advice was that captives should marry and acquire land, and act in an orderly manner, and they accepted that advice and acted upon it. They were not slaves, they were colonists, and some of them were given the highest offices in the State, as, for instance, Daniel and the Hebrew children, and Ezra and Nehemiah. In Ezekiel we find a higher degree of polish than in Jeremiah. He is very particular about details, and a very painstaking writer. I can scarcely hope we shall find many more literary relics of the Jews, because most of the inscriptions seem to have been of a public character.

Mr. BOSCAWEN.—We have got about 22,000 private inscriptions in the British Museum. They are mostly private contracts of various characters, and there are a few Jewish names in them. We get the names of Baruch

and Hosea. In all there are about twenty Jewish names. I am, however, much inclined to think that the example of the Three Children in changing their names was largely followed by other Jews.

Dr. J. A. FRASER, I.G.H.—Alluding to the plaster on which the writing on the wall appeared, as mentioned in the Bible, did I understand Mr. Boscawen to say that Mr. Rassam knew of the existence of such plaster?

Mr. BOSCAWEN.—I found a number of the bricks covered with a coating of plaster.

Mr. RASSAM.—I may say that I have only to excavate a couple of feet in order to find out whether a ruin is of a Babylonian or Assyrian origin. In Arabic, plaster means anything forming the outer part of a wall. The difference between the embellishment of the Assyrian and Babylonian palaces was this,—the former panelled their rooms with slabs of marble or alabaster, on which they engraved battle and hunting scenes, while the latter contented themselves by plastering their walls with some peculiar mud or cement, and painting thereon the same kind of representations as the Assyrians did.

Dr. FRASER.—I differ from the speaker, who said there was not much chance of our finding Jewish memorials. I think that if we hit on one, we shall hit upon many thousands all together.

Mr. RASSAM.—If we find anything about the Jewish Captivity, it will probably be at Coutha, where I made some excavations. The place, however, may be considered as large as Westminster, and I only excavated on an area about twice the size of this room.

Mr. BOSCAWEN.—There are one or two points I may as well reply upon now. With regard to the Targum, an interesting ray of light is thrown on the question in the fact that the interpreter (*targumanni*) is frequently mentioned as a witness to contracts.* The fact that the Jews must have been acquainted with a great deal of Babylonian literature at this time, is clearly shown by the number of legends in the Talmud, which are clearly copied from Assyrian tablets. Of the literary activity of Babylon at this time, we have a proof in the schools which rose up there; and so great was the importance of Babylon to Jewish literary students, that it was called for a long time after the Captivity the "Crown of the Law," because there the law was most studied. Of private contracts, and of matters relating to private life, we have an enormous amount of information. Mr. Pinches recently discovered an interesting probate case, in which a wife brought an action in one of the high courts of Babylon, before six judges, for the purpose of recovering certain property seized by her brother-in-law, and I have examined over fifteen hundred tablets relating to sales of land and slaves, one of them containing a plan beautifully drawn, and giving all the plotting of a field with considerable mathematical skill. Another tablet I found contained a list of precedents. You know how these precedents crop up in the Talmud, and it is quite possible to show, and has been shown by Dr. Schrader and other

* *Proceedings Soc. Bib. Arch.*, p. 73, Feb. 6, 1883.

writers, not only that a number of these precedents are borrowed by the Jewish people, but that in some cases peculiar Assyrian words have passed into the Talmud with them. There is one thing about the Assyrian calendar I should like to mention. The inscription which fixes the date of the capture of Babylon is an interesting document which I hope very shortly to publish as a whole with annotations. It abounds in all sorts of information about omens and lucky days ; for instance, days which were lucky to marry on, and days which were unlucky ; days on which fowls might be eaten, and days on which fish could be eaten. There is a maxim with regard to marriage which is rather a warning to some of us. It reminds one of the saying, "Never be born on a Friday." It is this: "Take a wife in a certain month, and you will be miserable all your life." (Laughter.) The curious thing is, that with the exception of the note upon the month Tammuz, the tablet is almost entirely a civil one, and not a religious one. We find, however, in other tablets, that the seventh, the fourteenth, the twenty-first, and the twenty-eighth days are called Sabbath days, or white days, on which the king and all his subjects had to abstain from work. It is curious to know that the Sabbath day is called, not a blessed day, but an evil day, and this, not because the day itself was evil, but because it was a day on which it was evil, or wicked, to do any work. The amount of information to be gathered from the tablets is really very great indeed. We have an enormous number of them in the British Museum, and hope to have in time about as many as the Museum will hold. I trust, however, to see a great many more studying this subject. We who do study have our jealousies and bickerings amongst ourselves, but still we should all like to see more engaged on the work. To Sunday-school teachers and clergymen, the information to be gathered from these tablets would be of the greatest possible value. They do not need a deep knowledge of the inscriptions themselves, but just a knowledge of the evidence which is to be gathered from them. I have recently been told that the books of which the fewest copies are sold are those which might be used to illustrate Biblical knowledge. People get frightened at them, possibly on account of the names, but I am convinced that if they would go through the British Museum, taking their Bibles and note-books with them, many a Sunday-school lesson and sermon would be made more interesting and forcible. (Applause.)

The meeting was then adjourned.

ORDINARY MEETING, FEBRUARY 4, 1884.

THE REV. R. THORNTON, D.D., VICE-PRESIDENT, IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

MEMBERS :—Sir E. Beckett, Bart., Q.C., London ; Rev. C. Brown, M.A. Oxon., London ; Rev. T. Davies, M.A., Ph.D., London ; Professor J. M. Dixon, Japan ; B. Copson Garratt, Esq., London ; Rev. T. W. Lemon, M.A. Oxon, S.C.L., Honiton ; H. A. Trulock Hankin, Esq., London.

ASSOCIATES :—A. C. Armstrong, Esq., Jun., United States ; A. E. Bennett, Esq., Warminster ; General J. L. Chamberlain, United States ; Professor O. Cone, United States ; Professor E. W. Claypole, United States ; J. Fraser, Esq., N. S. Wales ; Major Guyon, Royal Fusiliers ; Rev. C. F. Knight, M.A., Sheffield ; Rev. J. Langley, M.A., Birmingham ; Rev. W. L. S. Lack Szyrma, M.A. Oxon., Penzance ; Alder Smith, Esq., F.R.C.S., London ; Rev. T. Smith, B.A. Camb., Shipton-on-Stour ; H. S. Vail, Esq., United States ; Miss E. H. Ebbs, Kent ; Miss E. France, London ; Miss M. France, London ; Miss G. Harrison, Newcastle-upon-Tyne.

HON. LOCAL SECRETARY.—P. W. Reinmuth, Esq., Innsbruck.

Also the presentation of the following works for the library :—
Proceedings of the Royal Institution, Royal Geographical Society, and Sydney Observatory. *From the same.* “*Ecce Terra,*” by Rev. Dr. Burr and “*Kadesh Barnea,*” by Rev. Dr. Trumbull. *From the Authors.*

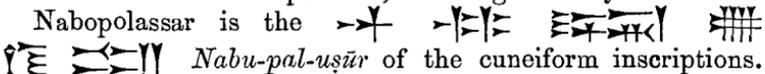
The following paper was then read by the Author :—

NEBUCHADNEZZAR, KING OF BABYLON. B.C. 605—
B.C. 562. (*On recently-discovered inscriptions of this King.*) By ERNEST A. BUDGE, M.A.

THE excavations carried on in Mesopotamia during the last few years have been productive of especially good results. Not only has Assyrian grammar and lexicography been enriched by magnificent “finds” of bilingual and grammatical tablets, but a considerable quantity of history has been made known to us through the discovery of cylinders which were inscribed during the latter years of the Babylonian Empire. They are peculiarly valuable, because they are the productions of those who lived at the time when the events happened which they record. Moreover, by means of the numerous contract and loan tablets which are in the collection of our National Museum, a keener insight has been afforded us of the commercial and other affairs of the Babylonian and

Assyrian Empires. Only a few years ago the discovery of the Egibi tablets revealed the great loan and banking system that was carried on in Babylon. Recently a valuable historical cylinder of Cyrus the Great showed exactly what was going on in Babylon at the time of the actual capture of the city. This is "perhaps the most interesting cuneiform document that has yet been discovered."* Other tablets give the reasons and circumstances of the actual capture. Among other things brought home recently were two inscribed cones, one very much rubbed and almost illegible in many places; the other broken into three pieces, but fortunately containing the text in a fair state of preservation. One inscription is an amplification of the other, and both relate to Nebuchadnezzar, and are the subject of this paper. They are very interesting, the spelling on them is very curious, and a great deal is said concerning the gods and goddesses of Babylon. They mutely proclaim the glory of the great king, who said: "Is not this great Babylon that I have built for the house of the kingdom by the might of my power, and for the honour of my majesty?" † The inscription is written throughout in the peculiar Babylonian style, and as far as possible these peculiarities have been reproduced in type.

The inscription begins with "Nebuchadnezzar, the King of Babylon, the exalted prince, the worshipper of the god Marduk, the prince supreme, the beloved of the god Nebo. I am established, the unfearing one, the restorer of the temple of the 'lofty head' and the temple of Zida, who to the god Nebo, and the god Marduk, his lords, worship also has performed before them (?). The exalted one, he who causes the *ituti* to be deep, the messenger of the great gods, the eldest son of Nabopolassar, the king of Babylon I am."

Nabopolassar is the  *Nabu-pal-usūr* of the cuneiform inscriptions. Concerning Nabopolassar, it is known that he was a general who was rewarded with the crown of Babylon for satisfactorily quelling a revolt. He made Babylon a tolerably powerful kingdom and this was the more easily accomplished from the fact that the Assyrian power had been utterly overthrown. It is self-evident that he left his reviving power in strong and energetic hands. The name Nebuchadnezzar has been explained in various ways by scholars, possibly because the name has been found written differently in the text of the Bible.

* Sir H. C. Rawlinson in the *Journal R.A.S.*, vol. xii. p. 70.

† Daniel iv. 30. In the text itself, verse 27.

It is commonly written נְבוּכַדְרֶאֱצַר , then rarely נְבוּכַדְרֶאֱצַר .* The LXX write it Ναβουχοδονόσορ , and Berosus Ναβουχοδονόσορος . The generally-accepted meaning of the name is, "Nebo defend the landmark," or, in Assyrian, *Nabu-kudur-usur*. The first part of the name is *Nabu*, i.e. "the prophet." The ideograph for his name is 𒌷 𒌷 𒌷 or 𒌷 𒌷 𒌷 and the Semitic explanation of this is given (W.A.I. ii. 60, 46), to be 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 *Na-bi-um* or Nebo; Syriac, ܢܒܘܢܐ . A curious ideograph for this god is

found in W.A.I., ii. 48, thus:— 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 and the

gloss reads 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 TIM-SAR. His wife's name was Tasmêtum, or "the hearer," the ideograph for whose name was 𒌷 𒌷 , and its pronunciation 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 KUR-NU-UN. Nebo is called by the following titles (W.A.I. i. 2, 60, 29-40: "Nebo the son of Merodach, the first-born god, the creator of the oracle, the creator of writing and written tablets, the god of knowledge," etc. Moreover, on the colophons of tablets it is frequently said that "Nebo and Tasmit gave the king broad ears, and his seeing eyes regarded the secrets of Nebo, the literature of the library, etc." He ranked as one of the great gods, and we know his worship was wide-spread and carried on even until after the death of Christ, for Addai, one of the seventy-two apostles, preaching to the inhabitants of Edessa, asks, "Who is this Nebo, an idol made which ye worship, and Bel which ye honour?" † There was a temple dedicated to Nebo at Borsippa.

The word *kudur*, "landmark," is often found in the cuneiform inscriptions, and "remover of borders and landmarks" is a title given to Rimmon-Nirari, and to Ninip. ‡ Nebuchadnezzar apparently first took care to build and restore the temples of E-SAG-ILI (𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷) and E-ZIDA. (𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷 𒌷) The first, or "lofty-

* Jeremiah xxxix. 1, 11; xliii. 10; Ezekiel xxix. 18.

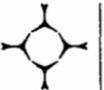
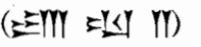
† : $\text{ܐܕܝܐܝܢܐ ܕܢܒܘܢܐ ܕܥܝܕܐܝܢܐ ܕܢܒܘܢܐ}$ (Addai, p. ܒ, Trübner & Co.). $\text{ܐܕܝܐܝܢܐ ܕܢܒܘܢܐ ܕܥܝܕܐܝܢܐ ܕܢܒܘܢܐ}$ It is curious to note that the LXX translate the נְבוּ of Isaiah xlv. 1, by Δαγών , Symmachus writes the name Νεβούς , Aquilá and Theodotion, Ναβώ .

‡ Norris Dict., p. 539; and W.A.I., iv., 44, 9.

headed," was the shrine of the god Bel. The celebrated golden image which Nebuchadnezzar made was of this god.* The second temple was dedicated to Anu. Now Bel was one of the first great triad of gods, which consisted of Anu, Ea, and Bel, and all these were the children of Zigaru, "the sky." *Zigaru* is the gloss given by W.A.I., ii. 48, 26, and is the pronunciation of the ideograph , which is equated

with the Assyrian   , *samū*, Hebrew .

The following are the names, ideographs, and glosses of the names of the three great gods (W.A.I., ii. 48).

  SŪSRU.		   D.P. A - nu - um
 UBIGARGA.		  D.P. En - til
 TAL. TAL.		           

Anūm is the Assyrian form of the Akkadian   AN-NA.† Ea was the "king of rivers and gardens," and, as we see from the above extract, *bil nemiki bil ha-si-si*, "lord of deep wisdom and knowledge." He was the husband of Bahu or chaos (the   of Gen. i. 2), and made father of Bel-Merodach, the tutelary deity of Babylon. Sir Henry Rawlinson thinks the monotheistic Hebrews of Ur belonged to the followers of Ea, he says: "He was the 'Creator of mankind,' 'the God of life and knowledge,' 'the Lord of *Thib* (the blessed city) or Paradise,' and exhibits many other traces of identity with the Elohim of the Jews. There seems, indeed, to be an allusion to this deity being

* Concerning the statue of Bel, see Daniel, chap. iii.; Herodotus, bk. i.; Strabo, xvi.; Pliny, vi. chap. xxvi.; Q. Curtius, lib. v.; Arrianus, lib. vii.; and Selden, *De Diis Syris*, p. 193 *et seq.*

† The following extract shows these gods had other names (S. 35):—

accepted by the Monotheists as the one true God, in the last verse of chap. iv. of Genesis, where, as I understand the passage, it is said that 'about this time, he (*i.e.*, Seth, the Lord of *Thib*) began to be called by the name of Jehovah.'**

The god Ea and his son Marduk will always be of the greatest interest to the students of comparative religion. Ea was the lord and governor of all mankind, the supreme great god; his son Marduk was the mediator between man and this god. The children of men offered their prayers to him and he bore them to his great father who received them at his hands. The complaint of the penitent sinner was directed to Ea through his son Marduk, and he commissioned his son, the god of light, to bestow his pardon on him. The rebellion of the gods of darkness and night, against light, was quenched by this shining god; and to the mind of the Babylonian he was the saviour of all.

After the first triad of gods came "the seven magnificent deities." Only six of them are mentioned in the inscription under consideration, but below is a list of the seven with ideographs, glosses, &c.

GLOSS.	IDEOGRAPH.	ASSYRIAN NAME.
(𒌦 𒌦 𒌦) DUMUGU.	𒌦 𒌦 𒌦	𒌦 𒌦 𒌦 D.P. Sin.
(𒌦 𒌦 𒌦) UTUKI.	𒌦 𒌦 𒌦	𒌦 𒌦 D.P. Samas.
(𒌦 𒌦 𒌦) MERMERI.	𒌦 𒌦 𒌦	𒌦 𒌦 D.P. Rammanu.
(𒌦 𒌦 𒌦) GUDIBIR.	𒌦 𒌦 𒌦	𒌦 𒌦 D.P. Marduk.
(𒌦 𒌦 𒌦) GÄSMU.	𒌦 𒌦 𒌦	𒌦 𒌦 𒌦 𒌦 D.P. Zarpanitum.
(𒌦 𒌦 𒌦) TIMSAR.	𒌦 𒌦 𒌦	𒌦 𒌦 𒌦 𒌦 D.P. Nabium.
(𒌦 𒌦 𒌦) KURNÜN.	𒌦	𒌦 𒌦 𒌦 𒌦 D.P. Tasmetum.

The first god in the list is the moon. He was always considered prior to the Sun, and was called "the mighty god."* The 29th day of Elul was called "the rest day of the Moon, the day when the spirits of heaven and the spirits of earth are invoked." Istar was goddess of the half month. The number of tablets in the ancient astronomical library relating to the moon must have been immense, when we consider what a large number are remaining which deal wholly with the moon and its appearances. The Sun was called the "Lady, the mistress of the world." Its gender therefore was feminine.† The god whose name is read *Rammanu*, was lord of the air, rain, clouds, and storm. Marduk was the son of Ea and Dam-kina "the earth" male and female. His Akkadian name was AMAR-UT or AMAR-UTU, "the brilliance of the Sun." He bore different names in different months.‡ The next name we meet is that of the god Zarpanituv. This is the סְכוֹת בְּנוֹת of 2 Kings xvii. 30, (LXX. σακχῶθ βενιθ), and it is said there that the Babylonian colonists who were brought from Samaria made them for their idols. Rashi on 2 Kings xvii. 30, says concerning Succoth Benoth: דמות תרנגולת עם אפרוחיה "the image of a cock with its chickens." § Selden in his *De Diis Syris* makes it to be Venus. He shows there how ב has the two sounds of *b* and *v*, and how *t* changes into *s*, so that *Benoth* comes to *Benos*, and finally *Benos* to *Venos*, and says, "Binos Græca pronuntiatione est Venus nostra." || Passages concerning the worship are quoted in the note below. The old Akkadian name for the moon-god| >—† >—|| >—>|| is twice

* W.A.I., iv. 33, 9.

† In the Bible it is masc. (Ps. civ. 19); and fem. (Gen. xv. 17).

‡ See W.A.I., iii. 53, 2; and Sayce, *Trans. Soc. Bib. Arch.*, iii. 166.

§ For the history and derivation of the word תרנגול, see Rev. W. H. Lowe, M.A., *Critical Notes*, p. 5, in his *Fragment of the Talmud Babli Pesachim*, Cambridge, 1879.

|| *Siccæ* est fanum in quod se matronæ conferebant atque inde procedentes ad questum, dotes corporis injuria contrahebant (p. 314). Ita Benoth ipsum etiam numen denotabat, et Succoth tabernacula seu ædes. . . Ipsissimum enim erat Babylonie Mylittæ sive Veneris Uranie templum, ubi puellæ corollis revinctæ, et sedentes singuli in spatiis quæ funiculis erant distincta, hospites opperiebantur qui rite implorata Venere Mylitta, pecuniaque quantulacunque data (quæ Deæ sacra) cum eis a fano subductis rem haberent. . . Heic plane filiarum seu mulierularum tabernacula, id est, Succoth Benoth. . . Mulieres, ait, funiculis circumdata, in viis sedent, ut furfures adoleant. Et si qua earum cum advena quovis, qui vi eam sibi attraxerit, cubaret, proximam conviciabatur, quod nequaquam simili afficeretur honore, nec funiculus ejus disrumperetur.—*De Diis Syris*, p. 309–313.

used and it is curious to note that Nebuchadnezzar calls him "the king my ancient father." (in W.A.I., iv. 2, 22.) The Euphrates is called the "river of Sippara," i.e. *

We meet in this inscription with the oft-repeated phrase. I built. The other Nebuchadnezzar inscriptions give *ina kūpri u agurri*, "with cement and burnt brick." *Kūpri* is the same as the Syriac ܩܘܦܪܐ "bitumen," in Gen. iv. 14, and Exod. ii. 3. *Agurri* is the same as the Arab ٤٠٠, "lateres coctiles," or burnt brick.† The component parts of the ideograph for bitumen show it to have been something that was "the product of water." A four-column syllabary says its Akkadian name was , *ebu*.‡ Herodotus says the bitumen used by Nebuchadnezzar for building came from the Is, a stream eight days' journey from Babylon.§

Throughout this inscription, an ideograph is doubled to express the plural, thus:—

	<i>abulli</i> , "gates."
	TSIR-RUS-TSIR-RUS, "snake gods."
	<i>ilāni</i> , "gods."

* The Akkadian name of the Tigris and Euphrates is given by the following from St. 2325:—

IDICNU.			
PURANUNU.			

μετὰ γὰρ τὸν Νεῖλον καὶ Γάγγην ὄντες ἐπισημότατοι σχεῖδόν τῶν κατὰ τὴν Ἀσίαν ποταμῶν Εὐφράτης καὶ Τίγρις τὰς μὲν πηγὰς ἔχουσι ἐκ τῶν Ἀρμενίων ὄρων διστήκαι δ' ἅπ' ἀλλήλων σταδίους δισχιλίους καὶ πεντακοσίους.—Diod. Siculus, bk. ii. sect. 11.

† *vox Pers. In Arab. linguam translata* "Lateres coctiles" (Freytag, p. 15).

‡ The whole line from St. 2325 is thus given:—

§ See notes by Sir H. Rawlinson in his brother's *Herodotus*, vol. i. p. 253. Πολλῶν δὲ καὶ παραδόξων ὄντων θεαμάτων κατὰ τὴν Βαβυλωνίαν οὐχ' ἥκιστα θαυμάζεται καὶ τὸ πλῆθος τῆς ἐν αὐτῇ γεννωμένης ἀσφάλτου τοσοῦτον γὰρ ἔστιν ὥστε μὴ μόνον ταῖς τοσαύταις καὶ τηλικαύταις οἰκοδομίαις διαρκεῖν, ἀλλὰ καὶ συλλεγόμενον τὸν λαὸν ἐπὶ τὸν τόπον ἀφειδῶς ἀρέσθαι καὶ ξηραίνοντα κίτων ἀντὶ ξύλων.—Diod. Siculus, book ii. sect. 12.

		<i>sarrani</i> , "kings."
		<i>abni</i> , "stones."
		<i>kakki</i> , "weapons."
→† for →† →→→ →→→		<i>ili rabī</i> , "great gods." *
<i>ilāni rabāti.</i>		

In col. 3, line 22, we meet with an example of the redundancy so common in Syriac, thus:—*subursu dur Bārziṣṣav* "the height of it—the fortress of Borsippa," *i.e.* "the height of the fortress of Borsippa."

And this brings us to the consideration of Babylon itself. Babylon is the Greek form of Babel or Bab-ili. And Ba-bel is the exact Semitic translation of the Akkadian KA DINGIRRA, or "the gate to god." It bore two other names, viz., EKI "the house," *par excellence*, and DIN-TIR "the house of the jungle," † or, according to others, "the place of life." But this is properly the designation of the town on the left bank of the river. Babylon is also expressed by →† →→→ D.P. Bab-ilani "the gate of the gods." ‡ It was said to have been built in very early times, it became the capital under Khammuragas (B.C. about 1700, who built a temple to Merodach there) and held this position for 1200 years. It was conquered by Tukulti-Ninip, B.C. 1271; by Tiglath-Pileser I. B.C. 1110; by Tiglath-Pileser II. B.C. 731; by Merodach Baladan, B.C. 722; by Sargon, B.C. 721. It was sacked and burnt by Sennacherib, B.C. 692; restored by Esarhaddon, B.C. 675; captured by Assur-bani-pal, B.C. 648, (also by Nabu-pal-usur, B.C. 626?) and finally taken by the Medes and Persians about B.C. 539. The city was built on both sides of the river in the form of a square, and was enclosed within a double row of high walls, the inner being called *Imgur-Bel*, the outer *Nimitti Bel*. Ctesias makes the outer walls 360 stades in circumference, Herodotus and Pliny § 480, Strabo || 385, Q. Curtius ¶ 368, and Clitarchus ** 365.

* This usage reminds us of the of Genesis xiv. 10, to express multitude, of Judges xv. 16.

† Sayce in the *Encyclopædia Britannica*, art. "Babylon," 9th edition.

‡ *Trans. Soc. Bib. Arch.*, vii. p. 109.

§ *N. H.* vi. 26.

|| xvi. i. 5.

¶ v. i. 26.

** ἀπολαβοῦσα δὲ τὴν Εὐφράτην ποταμὸν εἰς μέσον, περιβάλετο τείχος τῆ πόλει σταδίων ἐξήκοντα καὶ τριακοσίων, διειλημμένον πύργοις πυκνοῖς καὶ μεγάλοις, ὡς φησι Κτησίας ὁ Κνίδιος, ὡς δὲ Κλείταρχος καὶ τῶν ὕστερον μετ' Ἀλεξάνδρου διαβάντων εἰς τὴν Ἀσίαν τινὲς ἀνέγραψαν, τριακοσίων ἐξήκοντα καὶ πέντε σταδίων καὶ προστιθέασιν ὅτι τῶν ἰσῶν ἡμερῶν τῶν σταδίων ὑποστήσασθαι.—*Diod. Siculus*, book ii, sect. 7.

The spaces between the towers were broad enough to allow a pair-horsed chariot to turn (Herod. i. 179).* The question of the actual height has been discussed by Sir H. Rawlinson in *Herodotus*, and by Dr. Oppert in the *Athénæum Français*, 1854, p. 370. The celebrated Hanging Gardens were on the eastern side of the river and within the palace precincts. They were built in the form of a square (each side being 400 feet long) upon a series of arches.†

The absence of genuine history in the inscriptions of Nebuchadnezzar is remarkable. All the inscriptions yet found narrate his great care to make Babylon a success in the matter of buildings. There is no doubt he was a most pious king, and whether he considered the giving an account of his restoration and rebuilding of the temples of the gods of more importance than a narrative of his wars, is very hard to say. If only the history of his expedition through Palestine, of his siege of Tyre, and of his defeat of all the nations in that part of the world could be found. In the following inscription, the large India House inscription is perhaps referred to when he speaks of the account of his works which he wrote.

Nebuchadnezzar III., son of Nabopolassar, reigned from about B.C. 605 to B.C. 562. He took command of the Babylonian army on the occasion of the war between Nabopolassar and

* One cannot help thinking there must be an allusion to these mighty walls in the verse in Jeremiah (li. 53), "Though Babylon should mount up to heaven, and though she should fortify the height of her strength," &c. (כי תבצר מרום עודה).

† "In uno latere civitatis erant horti suspensi, fere conjuncti fluvio Euphrati; qui numerabantur inter septem miracula mundi. Situs eorum erat figuræ quadratæ, quadringentorum pedum, per quemlibet angulum quibus corresponderent secundus et tertius. Intus erant quatuor atria vel aræ, quadringentorum pedum longitudinis, et centum latitudinis, ita ut una supra aliam emerret. Prima elevebatur a terra duodecim cubitos cum dimidio. Secunda, viginti cubitos. Tertia, triginta septem cubitos cum dimidio. Quarta, proxima Euphrati, quinquaginta cubitos. Illic extrahebatur aqua ab Euphrate certis quibusdam machinis, ad irrigandos hortos. Tota hæc structura sustinebatur fornicibus latericiis, sibi coherentibus lato interstitio secundum proportionem arearum; quorum quilibet habebat duodecim pedes diametri; distabat itaque unus at altero fornix pedes viginti duos; et hoc quidem tam pro firmatione intermedia, quam pro commoditate mansiuncularum quarundam, ibi exstructarum. Superiora harum tabernarum, primo erant instrata magnis lapidibus, longitudinis sedecim pedum, et quatuor latitudinis. Deinde totum illud erat coopertum multis arundinibus. Tertio, omnes illæ arundines erant obtectæ magnis laminis plumbeis, quæ defenderent fornices ab humiditate terre. Tandem erat super omnia hæc, optima terra, excolta exquisitis floribus et plantis," &c.—*Not. in Diod. Sic., i. p. 124.*

city, his palaces, gardens, temples, and the massive golden image of the god Bel. Numerous indeed were the gods whose shrines filled Babylon, and Jeremiah sarcastically alludes to this (chap. i. 38) when he says: "For it is a land of graven images, and they madly confide in idols."* As a general and as an architect he was great, and one instance of kindness is recorded of him. For we read: "Nebuchadnezzar, king of Babylon, gave charge concerning Jeremiah by the hand of Nebuzaradan, the captain of the guard, saying, Take him and set thine eyes upon him, and do him no harm; but do unto him even as he shall say unto thee" (Jerem. xxxix 11).†

The inscription finishes with a prayer of the king to the god of Marad. It reads thus:—

- Col. iii. l. 15, "O God, the king AMARDA, the lord of all warrior (gods)
 " 16, to the brickwork of my hands for blessing
 " 17, joyfully be favourable, and
 " 18, a life to a day remote (with)
 " 19, sufficiency of glory,
 " 20, establishment of throne and a long reign
 " 21, for a gift. O give!
 " 22, Sweep away the disobedient
 " 23, Shatter their weapons
 " 24, Devastate all the land of the enemy
 " 25, Sweep away the whole of them
 " 26, with thy powerful weapons
 " 27, which benefit not my enemies
 " 28, May they draw near, and may they sting
 " 29, to the subjugation of my enemies may my hands go.
 " 30, In the presence of Marduk, king of heaven and earth
 " 31, my works cause to be blessed,
 " 32, command my prosperity."

Nebuchadnezzar died about B.C. 562, and was succeeded by his son, Evil-Merodach.‡

* כִּי אֶרְצָן פְּסִילִים הֵיא וּבְאִימִים יִתְהַלְלוּ : † Literally.

‡ Nebuchadnezzar, after he had begun to build the fore-mentioned wall, fell sick, and departed this life when he had reigned forty-three years, whereupon his son, Evil-Merodach, obtained the kingdom.—Fl. Joseph. *against Apion*, i. sec. 20.

INSCRIPTION OF NEBUCHADNEZZAR, KING OF BABYLON.
 FROM A RECENTLY-DISCOVERED CLAY CYLINDER
 IN THE BRITISH MUSEUM.

COLUMN I.

1. Nebuchadnezzar the king of Babylon,
2. the exalted prince, the worshipper of the god Marduk
3. the supreme lord, the beloved of the god Nebo,
4. the unwearied prince of the gate,
5. the restorer of the temple SAG-ILI and the temple ZIDA
6. who to the god Nebo and the god Marduk his lords
7. worship has performed before their persons
8. the exalted one, who causes the *ituti* to be deep, the
 messenger of the great gods,
9. the eldest son of Nabu-pul-usur (Nabopolassar),
10. the king of Babylon am I.
11. Prince Marduk the great lord then caused me to hold
 firmly
12. a sceptre (?) to rule the people [as a] shepherd,
13. to restore the fortresses, and to renew the temples
14. greatly he encouraged me.
15. I put my trust in Marduk, my lord, my judge,
16. his supreme fortress, the citadel his high place [the walls],
17. Imgur-Bel, Nimitti-Bel
18. I caused to be completed over their great fortresses
19. upon the threshold of its great gates
20. mighty lords (gods)
21. and [images] of poisonous snakes
22. I set up
23. the which never had any king my predecessor made.
24. The quay (of the fortress), its ditch (moat)
25. with bitumen and brick
26. the father my begetter built and completed for a bulwark.
27. As for me, the paths of the ancient quay
28. once, twice
29. I built up with bitumen and brick, and
30. the quay which my father had worked I excavated.
31. I caused its foundation to be laid with huge flat slabs, and
32. I raised up its summit like a mountain.
33. The quay of brick at the ford of the setting sun
34. within Babylon I completed.

35. The paths along the quay
36. with bitumen and brick
37. the father my begetter had worked at ;
38. its buttresses (?) with brick
39. along the river of Sippara I bound together,
40. and I fully completed its banks.
41. As for me his eldest son (*i.e.*, eldest son of Nabopolassar)
42. the beloved of his heart,
43. the paths along the quay
44. with bitumen and brick,
45. in addition to the quay which my father had made, I renewed.
46. In the temple of SAG-ILI the kiššra I set. .
47. The palace of heaven and earth, the seat of tranquillity,
48. E-KU-A the shrine of Bel, the temple of the gods and of Marduk,
49. the gate of Hilisud the seat of the goddess Zirpanitum,
50. and the temple of ZI-DA the dwelling-place of the divine king of heaven and earth
51. I caused them to be covered with shining gold and
52. I made them brilliant as the day.
53. The temple, the foundation of heaven and earth, the tower of Babel
54. I built anew
55. The temple of ZIDA, the eternal, the (temple) beloved of Nebo
56. I built anew within Borsippa, and

COLUMN II.

1. with gold and sculptured stones
2. I made [it] like the brilliance of heaven.
3. I caused it to be covered over with durable cedar and gold
4. up to the ceiling of the great temple of Life. The shrine of Nebo
5. I caused to be erected before those three
6. The great temple, the temple of the "lady of the head-land" within Babylon,
7. the temple (called) "he gives the sceptre of the world," the temple of Nebo of Harie,
8. the temple of Namgan, the temple of the wind within Kumari,
9. the temple of the dwelling, before the lady of heaven near the fortress,

10. I rebuilt within Babylon, and
11. I reared up their summits
12. the which never had any king my predecessor done.
13. Four thousand cubits square, the citadel with walls
14. towering and inaccessible
15. the everlasting fortress of Babylon at the ford of the
rising sun
16. I caused to surround.
17. I dug out the moat, I emptied away the water that had
gathered there,
18. I made its bed of bitumen and brick, and I excavated
19. the quay which my father had worked at.
20. the lofty fortress with bitumen and brick
21. I built up like a mountain upon its side.
22. The height of the fortress of Borsippa thoroughly
23. I rebuilt.
24. The quay and the moat [lined and built] with bitumen
and brick
25. I made to surround the citadel for a protection.
26. For the god Turkit, the lord, the breaker of the weapons
of my enemies
27. I rebuilt his temple within Borsippa.
28. The temple of the Sun, the temple of the sun-god of
Sippara,
29. the temple the established seat, the temple of the
god
30. of the city Bätz,
31. the temple of the eyes of Anum, the temple of the god
Dar
32. of the city of the planet Venus,
33. the temple of heaven, the temple of Istar of Erech,
34. the temple of the sun, the temple of the sun-god of
Larsa,
35. the temple of KIS-KUR-GAL, the temple of the moon-god
of Ur,
36. these temples of the great gods
37. I rebuilt ; and
38. I caused their beautiful adornments to be completed.
39. The restoration (or furniture) of the temples of SAG-ILI
and ZIDA
40. the new places of Babylon
41. which more than before
42. I have made more extensive
43. and I have established them even to their summits.
44. An account of all my magnificent works,

45. and of my restorations of the temples of the great gods
46. above what the kings my fathers wrote
47. upon a stone tablet I wrote ; and
48. I set it up for future days.
49. The account of all my works
50. which I have written upon the stone tablet
51. with understanding mayst thou look upon
52. and upon the glorious things of the gods.
53. May [men] understand that
54. I built the fortresses of the gods and of the goddess Istar
55. of the great lord and of Marduk.

COLUMN III.

1. As for myself Marduk urged me on,
2. he girded me up in heart,
3. reverently, and not failing him
4. I completed his beautiful [works].
5. [I rebuilt] (?) for the god the king of Marad, my lord,
6. his temple within Marad the
7. which had been built from a remote time ;
8. its ancient foundation stone
9. which no former king had ever seen
10. I took hold of, I uncovered, and
11. upon the foundation stone, the beloved of the Moon-god,
the king,
12. my ancient father, I laid down its foundation.
13. I made an inscription in my name, and
14. I placed it within it.
15. O God the king of Marad, lord of all warriors,
16. to the brickwork which my happy hands [have made]
17. be favourable joyfully and
18. my life to a far distant day
19. with abundance of glory,
20. fixity of throne, and length of rule
21. to eternity do thou lengthen.
22. Sweep away the disobedient,
23. break in pieces their weapons,
24. devastate the lands of the enemies,
25. sweep them all away.
26. Thy mighty weapons
27. which benefit not my enemies
28. may they draw near and may they fight

29. for the subjugation of my enemies, may they go by my sides.
 30. In the presence of Marduk king of heaven and earth
 31. upon my works pronounce blessing
 32. command my prosperity.

TEXT AND TRANSLATION.

COLUMN I.

1. 
 D.P. Na - bi - uv - cu - dur - ri - u - tsu - ur
Nebuchadnezzar

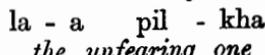

 sar Ba - bi - lav D.A.
the king of Babylon

2. 
 ru - ba - a - av na - a - dav mi - gi - ir
the exalted prince the worshipper


 D.P. Marduk
of the god Marduk

3. 
 is - sa - ak - ku tsi - i - ri na - ra - am
the prince supreme, the beloved

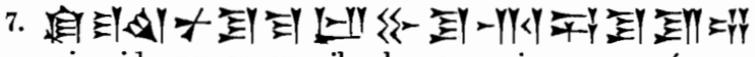

 D.P. Na - bi - uv
of the god Nebo

4. 
 sa - ac - ca - na - cu la - a - ne - kha
I am established the unresting or

 la - a - pil - kha
the unfearing one

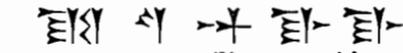
5. 
 za- ni - in E SAG - ILI u E ZI - DA
the restorer of the temple of the lofty head and the temple of Zida

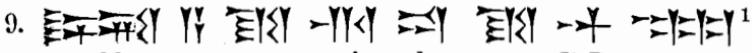
6. 
 sa a - na D.P. Na - bi - uv u D.P. Marduk
who to the god Nebo and the god Marduk


 beli - su
his lords

7. 
 ci - id - nu - su - va ib - bu - su ri - e - su - su - un
worship also has performed before their persons

8. 
 na - a - dav mu - us - te - mi - ku i - tu - ti
the exalted one, he who causes the ituti to be deep,

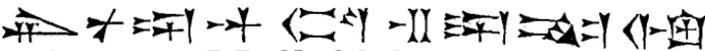
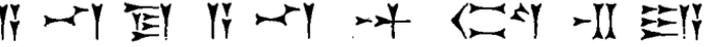
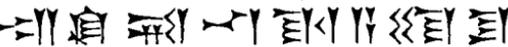

 sa - par ili rabi
the messenger of the great gods

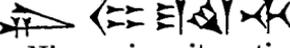
9. 
 ablu a - sa - ri - du sa D.P. NABU -
the eldest son of Nabo -


 PAL - u - tsu - ur
palutsur

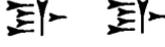
10. 
 sar Ba - bi - lav D.A. a - na - cu
King of Babylon I am.

' Variant .

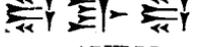
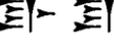
11. 
 ni - nu - uv D.P. Marduk bil ra - be - u
The prince Merodach great lord
- 
 ci - ni - is lu - ba - an - ni - va
firmly may he cause me to hold also
12. 
 D.P. ... su-te su-ru ni - sim ri - e - a - av
a sceptre (?) to direct the people the shepherd,
13. 
 za - na - an ma - kha - zi ud - du - su
(to) restore the fortress to renew
- 
 e - es - ri - e - tiv
the temples
14. 
 ra - bi - is u - ma - ah ir - an - ni
greatly he encouraged me
15. 
 a - na - cu a - na D.P. Marduk bil - ya
I upon the god Marduk my lord,
- 
 pa - al - li u - ta - ku
my judge trusted
16. 
 Ba - bi - lav D.A. ma - kha - za - su tsi - i - ri
Babylon his supreme fortress,
- 
 ta - na - da - a - tu - su
the citadel his high place

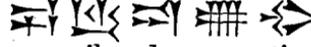
17.   
 Im - gu - ur Bel Ni - mi - it - ti
Imgur-Bel *Nimitti*

 
 D.P. Bel
Bel

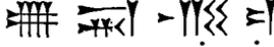
18.   
 e - li dur - su GAL - GAL
upon *its* *great* *fortress*

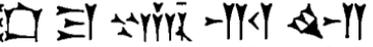

 u - sa - ac - li - il
I caused to be completed

19.    
 a - na se - ip - pi ABULLI - su
upon *the* *threshold* *of* *its* *great* *gates*

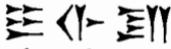
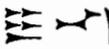
20.  
 bi - e - li e - ik - du - u - tiv
gods (?) *mighty*

21.      
 u TSIR RUS TSIR RUS tu - zu - u - tiv
and *powerful* *snakes* *strong* *(poisonous)*

22. 
 u - us - zi - iz
(then) I set up;

23.     
 sa sar ma - akh - ri - iv la i - pu - su
which a king preceding (me) had not made

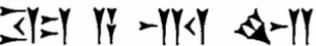
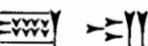
24.  
 ca - a - ri khi - ri - ti - su
its quay *its ditch (moat)*

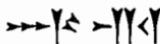
31.    
 i - si - su i - na bu - ra - at OI - GAL
its foundation with the of inscription stones

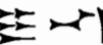
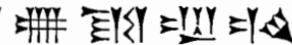

 u - sa - ar - si - id - va
I caused to be laid down and

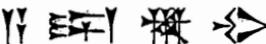
32.  
 ri - si - su sa - da - ni - is
its head like a mountain


 u - za - ak - ki - ir
I raised up

33.     
 ka - a - ri - iv libittu AL UR alu
the quay of brick (at) the city

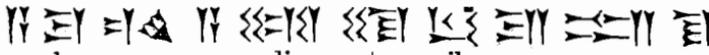
  
 pal - ri D.P. Sam - su
the ford of the setting sun

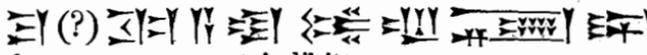
34.   
 i - na Ba - bi - lav u - sa - al - av
within Babylon I raised.

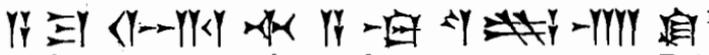
35.  
 ka - a - ri a - ra - akh - tiv
the quay, the paths

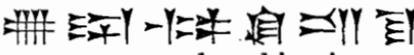
36.    
 i - na IDDU u libittu
with bitumen and brick

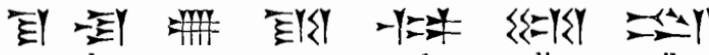
 
 AL UR - ra

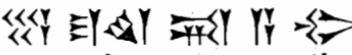
37. 
 a - ba - av a - li - tu ik - zu - ur - va
the father (my) begetter worked at and

38. 
 ba - ca - a - tsi libittu AL - UR - ra
with brick

39. 
 a - ba - ar - ti nahar puranunu D.A.
along the river of Sippara


 u - ra - ak - ki - is - va
I bound together

40. 
 ma - la u - sa - ak - li - il
fully I completed


 se - it - ta - a - tiv
its banks

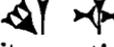
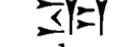
41. 
 ya - ti a - bi - il - su ri - e - es - ta - a - av
As for me his eldest son

42. 
 na - ra - am li - ib - bi - su
the beloved (one) of his heart

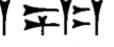
43. 
 ka - a - ri a - ra - akh - tiv
quay paths i.e. (the road along the quay)

¹ In a four-column bilingual list the pronunciation of this word is said to be , *pu-ra-nu-nu*. W.A.L., v. 22, 31.

44.    
 i - na IDDU u libittu UR - ra
with bitumen and brick

45.   
 it - ti ka - a - ri a - ba - a - av
with the quay (which my) father

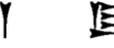
    
 ik - zu - ur - ru u - sa - an - ni - in
had made I renewed.

46.    
 i - na E SAG - ILI ki - its - tsi - ra
In the "temple of the lofty head" the whole

 
 as - ba - av
collection I set.

47.    
 E - GAL sa - mi - e u ir - zi - tiv
The palace of heaven and earth

  
 su - ba - at ta - si - la - a - tiv
the seat of prosperity

48.    
 E CU - A pa - pa - kha Bel
The temple of E CU-A the shrine of Bel,

   
 bit ilani D.P. Marduk
the temple of the gods (and) Marduk

¹ Var. .

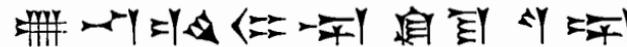
49. 
 bab khi - li - sud su - ba - at
The gate of Khilisud the seat


 D.P. Zir - pa - ni - tuv
of the goddess Zirpanituv

50. 
 E ZI - DA su - ba - at D.P. sar
The temple of Zida, the dwelling place of the divine king


 dim - me - ir AN - CI - A
heaven and earth

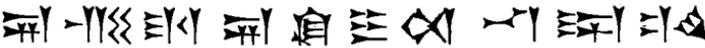
51. 
 D.P. khuratsi na - am - ru u - sa - al - bi - is - va
with shining gold I caused (them) to be covered and

52. 
 u - na - am - mi - ir ki - ma um - uv
I made them bright like the day

53. 
 E temen sami irtsiti zi - ku - ra - at
The temple of the foundation of heaven and earth the tower


 Ba - bi - lav D.A.
of Babylon

54. 
 e - es - si - is e - pu - us
anew I built

55. 

E zi - DA E ki - i - nuv na - ra - am

The temple of Zida, the established, the beloved



D.P. Na - bi - uv

(temple) of Nebo

56. 

i - na Ba - ar - zi - pav D.A.

within Borsippa,



e - es - se - is ab - ni - va

anew I built and

COLUMN II.

1. 

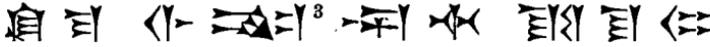
i - na D.P. khuratsi u ni - se - ik - tiv

with gold and sculptured



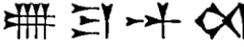
abni

stones

2. 

ki - ma si - be - ir - ti sa - ma - mi

like the splendour of heaven



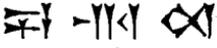
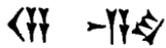
u - ba - an - niv

I built (it)

¹ This name is written , Dur-Si-ab-ba (*Trans. Soc. Bib. Arch.*, vol. vii. p. 106.)

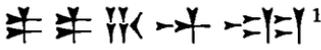
² Var. .

³ Var. .

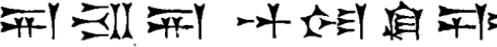
3.  e - ri - nuv
(with) cedar
-  dara - tiv
lasting and
-  D.P. khuratsi
gold

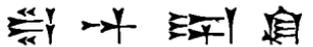
 u sa - al - bi - is - va
I caused to cover and

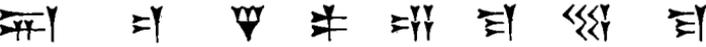
4.  a - na
-  tsu - lu - ul
-  E MAKH TI - LA
- for the {overshadowing
ceiling} of the great temple of Life,

 pa - pa - kha D.P. Nabu
the shrine of Nebo

5.  pa - nuv se - lal - ti - su - nu
-  u - sa - at - ri - its
- before those three I caused to be erected

6.  E MAKH E D.P. NIN - KI - SAK
-  E lib - ba
- The great temple, the temple of the lady of the headland,

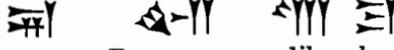
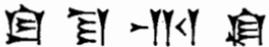
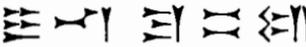
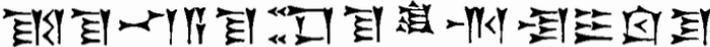
 KA DINGIR - RA D.A.
the temple within Babylon

7.  E D.P. khaddhi - kala - ma - idinna - va
- The temple "he gives the sceptre of the world,"

 E D.P. Na - bi - uv sa Kha - ri - e

the temple of Nebo of Kharie

¹ Var. .

8.  
 E NAM - GAN E Rammanu lib - ba
The temple of Namgan, the temple of wind within
- 
 Ku - ma - ri D.A.
Cumari
9.  
 E KI - KU pa - an E D.P. BELTI
The temple of the dwelling, before the temple of the lady,
- 
 an - na sa tu - up - ga - at duri
of heaven of the regions of the fortress
10.  
 i - na Ba - bi - lav D.A. e - es - si - is
within Babylon afresh
- 
 ab - ni - va
I built and
11. 
 u - ul - la - a - av ri - e - sa - si - in
I raised up their summits (heads)
12. 
 sa ma - na - a - ma sar ma - akhi - ri la i - pu - su
which (temples) never a preceding King had made

13.        
 IV x 1,000 ammati ka - ka - ra - av
Four thousand cubits square

     
 i - ta - a - at
the walls of the citadel

14.      
 ni - se - is la da - khi - e
loftily inaccessible

15.          
 duru daru pal - ri D.P. Samas atsu
The fortress eternal of the ford of the rising sun of

   
 Ba - bi - lav - D.A.
Babylon

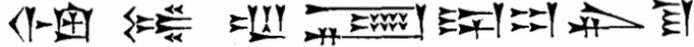
16.     
 u - sa - as - khi - ir
I caused to surround

17.           
 khi - ri - su akh - ri - e - va su - pu - ul mi - e
its ditch I dug out and the depth of waters

   
 ak - su - ud
I took (emptied)

¹ Var. .

18. 
 ki - bi - ir - su i - na IDDU
its bed with bitumen


 u libittu AL - UR - ra ab - ni - va
and brick I built and

19. 
 it - ti ka - a - ri a - ba - a av ik - zu - ru
with the quay (my) father had made,


 e - se - ni - ik - va
I cut it out and

20. 
 duru daru i - na iddu
the lofty fortress with bitumen


 u libittu AL - UR - ra
and brick

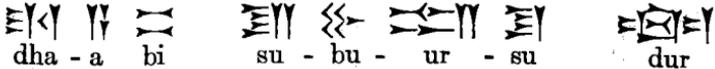
21. 
 i - na ki - sa - di - sa sa - da - ni - is
upon its side like a mountain


 ab - niv
I built

¹ Var. .

² Var. .

³ Var. .

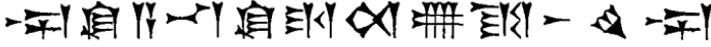
22. 
 dha - a bi su - bu - ur - su dur
well the height of (lit. its height of) the fortress of

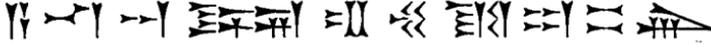

 Ba - ar - zi - pav D.A.
Borsippa

23. 
 e - es - se - is e - pu - us
afresh I built (made)

24. 
 ka - a - ri khi - ri - ti - su i - na
the quay, its ditch with


 iddu u libittu AL UR - ra
bitumen and brick

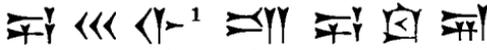
25. 
 a - na ki - da - nuv u - sa - as - khi - ir
a citadel for a protection I caused to surround

26. 
 a - na D.P. TUR - CIT bilu mu - sa - ab - bi - ir
For the god Tur-cit, the lord, the breaker of the

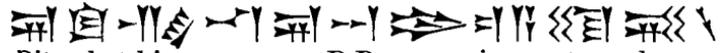

 D.P. KAKKI sa na - ki - ri - ya
weapons of my enemies

¹ Var. .

27. 
 bit - su i - na Ba - ar - zi - pav D.A.
his temple within Borsippa

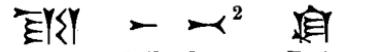

 e - es - si - is e - pu - us
afresh I built.

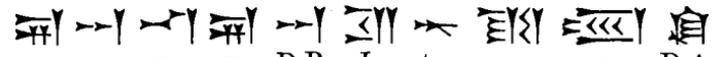
28. 
 Bit - PAR - RA Bit D.P. Samas SIPAR
The temple of the Sun, the temple of the Sun-god of Sippara.

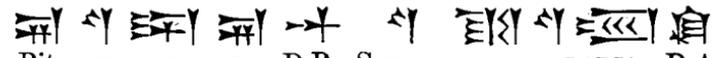
29. 
 Bit-subat-kinu E D.P. sar gis-a- tu gab-gam
The temple the established seat, the temple of the god

30. 
 sa D.P. Ba - atz D.A.
of the city of Bāts

31. 
 E i - dhe D.P. A - nuv E D.P. DAR
The temple of the eyes of the god Anu, the temple of the god Dar

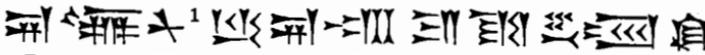
32. 
 sa Dil - bat D.A.
of the city of the planet Venus.

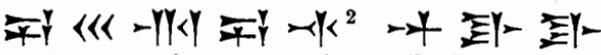
33. 
 E AN - NA E D.P. Is - tar sa URU D.A.
The temple of heaven the temple of Istar of Erech

34. 
 Bit - par - ra E D.P. Samas sa LARSA D.A.
The temple of the sun, the temple of the Sun-god of Larsa

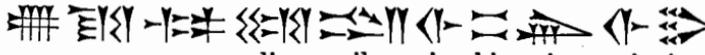
¹ Var. .

² The modern Dailem.

35. 
 E CIS-CUR-GAL E EN-ZU sa URU D.A.
The temple of the temple of the moon-god of Ur

36. 
 e - es - ri - e - ti ilani rabuti
(these) temples of the great gods

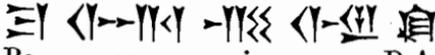
37. 
 e - es - se - is e - pu - us - va
afresh I built and

38. 
 u - sa - ac - li - il si - bi - ir - si - in
I caused to be completed their beautiful (adornments)

39. 
 zi - in - na - a - at E SAG-ILI
furniture of the temple of the lofty head, (and)


 E ZI - DA
the temple of Zida

40. 
 te - di - is - ti Ba - bi - lav. D.A.
the new places of Babylon

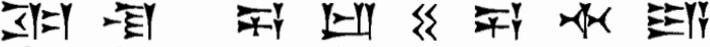
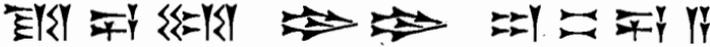

 Ba - ar - zi - pav. D.A.
(and) Borsippa

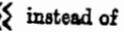
41. 
 sa e - li sa ma - akh - ri - iv
which more than before

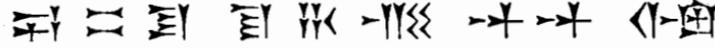
¹ Var. .

² Var. .

³ Var. .

42. 
 u - sa - ti - ku - va
I have caused to exceed and
43. 
 as ku - nuv a - na ri - e - es - e - tiv
I have established them even to their summits
44. 
 ka - la e - ip - se - e - ti - ya
(an account) of all my costly
- 
 su - ku - ra - a - tiv
works (and)
45. 
 za - na - an e - es - ri - e - ti ilani rabuti
the restoration of the temples of the great gods
46. 
 sa e - li sarrani ab - bi - e - a
as to which above what the kings my fathers
- 
 u - sa - ti - ru
wrote
47. 
 i - na D.P. Na - RA - a - as - tu - ur - va
upon a stone tablet I wrote and
48. 
 u - ki - in akh - ra - ta - as
I set up for future (days)

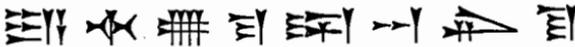
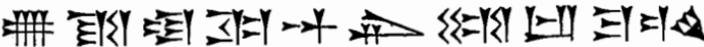
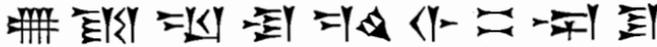
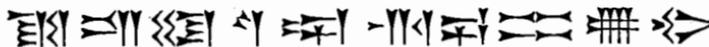
¹ Var.  instead of .² Var. .

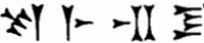
49. 
 ka - la e - ip - se - e - ti - ya
 (*The account*) of all my works
50. 
 sa i - na D.P. na - RA - a as - tu - ru
 which upon the stone tablet I have written
51. 
 mu - da - a - av li - ta - am - ma - ar - va
 (*with*) understanding mayest thou look upon and
52. 
 ta - ni - it - ti ilani
 the glory of the gods
53. 
 li - ikh - ta as - sa - as
 may he understand
54. 
 e - bi - su ma - kha - zi ilani u
 I built the fortress of the gods and
- 
 D.P. Is - tar
 the goddess Istar
55. 
 sa bilu ra - be u D.P. Marduk
 of the great lord and Marduk

¹ Var. .

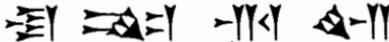
² Var. .

COLUMN III.

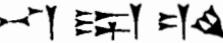
1. 
 ya - ti u - ma - ra - an - ni - va
As for me he urged me and
2. 
 u - sa - at - ka - an - ni li - ib - ba - av
he caused to gather me in heart
3. 
 pa - al - khi - is la - a ba - adh - dhi - il - su
reverently. not failing him,
4. 
 u - sa - al - la - av si - bi - ir - su
I completed his beautiful (works)
- Thus far the account on both cylinders is the same, although the spelling of a word here and there is different. But now the accounts differ entirely, and we give the text from the cylinder that contains the third column in the best state of preservation.
5. 
 ni - nu mi - su a - na D.P. SAR AMAR - DA bil - ya
 for the god, the king of Marad my lord
6. 
 bit - su sa ki - ri - ib AMAR - DA - DA
his temple which is within Marad,
7. 
 sa is - tu yu - um ri - e - ku - u tiv
which from a time (day) remote

8.  
 te-me-en-su la-be-ri-iv
its ancient foundation-stone (which)

9.   
 la-i-mu-ru sar ma-akh-ri-iv
a former king had not seen

10.  
 te-me-en-su la-be-ri-iv
its ancient foundation-stone,

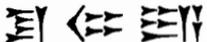
 
 a-khi-id ap-ri-e-va
I took hold of, I uncovered and

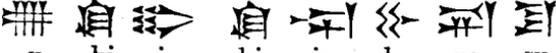
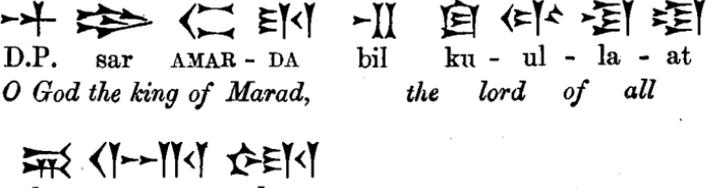
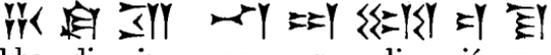
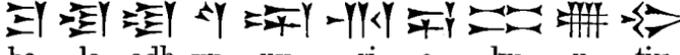
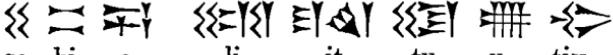
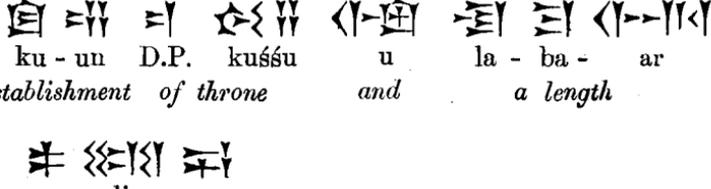
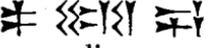
11.    
 e-li te-me-en sa na-ra-am
above the foundation-stone which (is) the delight of the

 
 EN-ZU sar
Moon-god, the king

12.   
 a-ba-a-av la-be-ri u-ki-in
my ancient father, I laid down


 us-su-su
its foundation

13.   
 si-dhe-er su-mi-ya ab-ni-va
the writing of my name I made and

14. 
 u - ki - in ki - ir - bu - us - su
I placed within it.
15. 
 D.P. sar AMAR - DA bil ku - ul - la - at
O God the king of Marad, the lord of all
- 
 ka - ar - dav
the warrior (gods)
16. 
 li - bi - it ka - ti - ya a - na da - mi - ik - tiv
to the brickwork of my lucky hands.
17. 
 kha - di - is na - ap - li - is - va
joyfully, be favourable and
18. 
 ba - la - adh yu - uv ri - e - ku - u - tiv
a life to a day remote
19. 
 se - bi - e li - it - tu - u - tiv
sufficiency of glory
20. 
 ku - un D.P. kuššu u la - ba - ar
establishment of throne and a length
- 
 pa - li - e
of reign

ANALYSIS.

COLUMN I.

2. *rubāv*, subs. sing. masc. Comp. Heb. רב, Syr. ܪܒ;
nāḏav, adj. sing. Comp. Heb. דוד
mīgīr, subs. sing. masc. cons. Comp. Heb. גור and גר
to fear.
3. *issākku*, subs. sing. masc.
narām, Niphal deriv. with softened guttural. Comp.
Heb. רם
4. *Sāccanacu*, 1st sing. Permansive *acu* is a shortened form
from *anacu* (Heb. אָנָכִי).¹ A whole string of verbs of
similar formation occurs in W.A.I., I. 17, 32, thus:—

𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>šar-ra-cu</i>	I am king
𒍪 𒍪𒍪 𒍪	<i>bi-la-cu</i>	I am lord
𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>na-ah-da-cu</i>	I am noble
𒍪𒍪𒍪 𒍪	<i>makh-khu</i>	I am great
𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>cab-ta-cu</i>	I am honourable
𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>sur-ra-kha-cu</i>	I am mighty (Heb. סרדו)
𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>a-sa-ri-da-cu</i>	I am eldest (the chiefest)
𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>ur-sa-na-cu</i>	I am prince.
𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>kar-ra-da-cu</i>	I am warriorlike
𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>dan-na-cu</i>	I am strong
𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪𒍪𒍪 𒍪	<i>zi-ca-ra-cu</i>	I am renowned

Dr. Delitzsch, however, would prefer to read *sāccanacu* as *sāk kanaci*, "prince of the gate," and refers to W.A.I., IV. 16, 58, where the Akkadian 𒍪𒍪𒍪𒍪 is equated with the Assyrian 𒍪𒍪𒍪𒍪 D.P. *ca-na-ci*. But on both cones the last sign is *cu* not *ci*.

¹ See Sayce, *Assyrian Lectures*, p. 93. (Bagster & Co.)

8. *müstemiku*, Itaphal partic. Comp. Heb. עִמְקָה
sapar, subs. sing. masc. cons. Arab. سَفَرٌ
9.  =   *ab-lu*. W.A.I., III. 70, 122.
asaridu. Comp. Chald. אֲשַׁרְיִיתָא, and Syr. ܐܫܪܝܬܐ,
 “principium.”
11. *Marduk*. Occurs in Heb. under the forms מְרַאדֵךְ and
 בְּרַאדֵךְ Syriac ܡܪܕܘܟܐ.
cinis, adverb from *cinu*. Comp. Heb. כִּינִי.
- lu-bānmi*, 1st sing. Imperative Pael. Literally “build
 me.” Comp. Heb. בְּנֵה.
12. *susubni*, 1st sing. Imperative Shaphel. Comp. Heb. יִשָּׁב.
rēāv, subs. sing. masc. Heb. רָעָה.
13. *zanān*, subs. sing. cons. Comp. Heb. זָנַן.
ēsrietiv, subs. plu. fem. with mimmation. Comp. Heb.
 אֲשִׁירָה Chald. אֲשִׁירָתָא and Accad. 𐎶𐎵𐎶𐎶 𐎶𐎶𐎶𐎶
 E-ŠARRA.
14. *pālli*, subs. sing. masc. with pron. suffix. Comp. Heb. פָּלַל.
18. DUR. Comp. Syr. ܦܠܠܢ.
usachil, 1st sing. masc. aor. Shaph. Comp. Heb. פָּלַל.
 Comp. Chald. אֲשַׁכְּלִיל; Syr. ܦܠܠܐ.
19. *seippi*, subs. sing. masc. Comp. Heb. סִפֵּה, Syr. ܣܦܦܢ
 “atrium.”
abulli, subs. plu. masc. Chald. אֲבוּלָא.
20. *eikdütiv*, adj. fem. with mimmation. Comp. Arab. عَدَّةٌ
 “potentia.”
21. *sezuzütim*. Comp. Heb. עֵזוּ.
24. *khiriti*, subs. sing. fem. Heb. דוּר.

25. $\text{𒌷 𒀭} = \text{𒀭} \text{𒀭} \text{𒀭}$ *id-da*. W.A.I., VI, 6, 46.
 This occurs in many inscriptions of Nebuchadnezzar.
See W.A.I., I, 65, 51. Col. 2, 8. W.A.I., I, 52, 17.
 On a brick lost in the Tigris, but printed by Dr. Oppert in his "Exp. Mésop.," p. 257, $\text{𒀭} \text{𒌷}$ was omitted. (Norris Dict., p. 60.)
libittu. Comp. Heb. לִבִּיטָה.
26. *abāv*, subs. sing. masc. with mimmation. Heb. אָב.
alitu, pres. participle, or "nomen agentis." Heb. יֹלֵד.
 Comp. Syr. ܐܒܘܢܐ, "genitor."
usālav, sing. aor. Shaph. Heb. עָלָה.
27. *bususi*, subs. plu. masc. Heb. בָּשַׁם, "to tread."
28. *istenniti*. From Akkadian 𒀭 as "one" and $\text{𒀭} \text{𒀭} \text{𒀭}$ 𒀭 TA-AN, "a measure." Heb. עֶשְׂתֵּי.
sanī. Comp. Heb. שָׁנָה, "to do the second time."
31. *isišu*, for *isid-šu*. Comp. Heb. יָסוּד.
 $\text{𒀭} \text{𒀭}$ CI-GAL, *i.e.*, Hades. The Queen of Hades was called Gula ($\text{𒀭} \text{𒀭} \text{𒀭}$), and she was wife of the God Ea. Another name, Nin-ci-gal, *i.e.*, "Lady of the great Country," was also borne by her in her especial capacity as "Lady of the House of Death."
33. $\text{𒀭} \text{𒀭} \text{𒀭} = \text{𒀭} \text{𒀭} \text{𒀭} \text{𒀭} \text{𒀭}$ *e-bir-ti-nāhr*,
 "the crossing of a river."
35. *arāktiv*, subs. plu. fem. Heb. אָרָה.
39. *abārti*. Comp. Heb. עֵבֶר.
urāccišva, 1st sing. aor. Pael. Heb. רָכַס.
40. *seittätiv*, subs. plu. fem. Comp. Chald. אִיסוּדָא.
41. *yati*. Comp. Heb. אָתִי.
47. *irsitiv*, for *irtsitiv*. Heb. אָרָץ.
51. *khuratsi*, subs. sing. masc. Heb. חֲרוּץ.

COLUMN II.

1. *sipirti*, subs. fem. sing. gen. case. Heb. שִׁפְרָה.
3. *samami*, reduplicated form like *mami*, "waters."
13. *kakarāv*. Dr. Oppert has pointed out that *ammāt gagari* signified the square cubit (360 yards).
17. *supul*, subs. sing. masc. Heb. שָׁפַל.
24. *cāri*, subs. sing. masc. Heb. קִיר. Chald. כְּרִכָּא
40. *tedisti*, subs. plu. fem. Comp. Heb. הָרַשׁ "to be new."
sukurātiv. Shaphel derivative. Comp. Heb. יָקַר.
Chald. אִיקָר, יָקַר.
46. *usatiru*, for *usadhiru*, 1st sing. perf. Heb. שָׁמַר.
51. *mudāv*. Comp. Heb. מִידַעַת. Isai. xii. 5.

COLUMN III.

20. *sūrkaḅ*, *sigis*, *sūbbir*, *khullik*, *supūn*, *sūmgir*, and *kibi*, are an interesting collection of imperatives.
28. *lu*, the sign of the precativē, and is to be compared with the Hebrew לֵךְ and לוֹא, O that! would that! let it be! etc. But for a discussion on this point, and a contradiction of the opinions of Prof. Sayce and Dr. Oppert, see Lowe's *Fragment of Talmud Babli Pesachim*. Critical Notes, pp. 1—3. Cambridge, 1879.

The CHAIRMAN (Rev. R. Thornton, D.D., V.P.).—I am sure I only represent the feeling of this meeting when I say that we are all greatly indebted to Mr. Budge for his learned and interesting paper. (Applause.) We shall now be happy to hear the remarks of any present who wish to speak upon the subject with which Mr. Budge has so ably dealt.

The Rev. H. A. STERN, D.D.—I venture to offer one or two observations on the interesting and instructive paper that has just been read. First, as regards the name of Nebuchadnezzar. I am inclined to think that it signifies “Nebo,” “the protector against troubles.” The Hebrew words, בְּיָרֹךְ “trouble,” and נָצַר “to protect,” seem to justify this interpretation. Nebo is represented as the tutelary god of the most distinguished Babylonian kings. Borsippa was under his protection; and the great temple, the modern Birs Nimrod, was dedicated to his service. In the Talmud Borsippa has a very doubtful reputation, a good deal is said about it, but all in language that is far from flattering; it is said that the atmosphere is bad, and weakens the memory. And again, Babel and Bursif are inimical to the study of the Scriptures, because on that spot God confounded the language of the builders of the Tower of Babel. Another remark I would make on the god Ea, one of the children of Zigar, or Samu, the Hebrew עֲמֻנִי. The name reminds one of what God said to Moses, when he asked for the credentials of his mission, אֲנִי אֶהְיֶה אֲשֶׁר אֶהְיֶה—“I AM THAT I AM” “hath sent me unto you.” Ea may be derived from הָיָה, to be, or to exist; from which comes Jehovah, the eternal, unchangeable God. The distinction between Jehovah and Elohim is very questionable. They are synonymous names of the Deity, as any one can convince himself by reading the first three chapters of Genesis. “Then began man to call upon the name of Jehovah.” אִזּוֹ הֵיחָל לְקַרְא בְּשֵׁם יְהוָה. Jewish commentators interpret this to mean that, after the birth of Enos, men erected idols, which they called by the name Jehovah. This appears to me to be far more consistent than such a theory as is contained even in the remarks made in this interesting paper. But in speaking of Ea, the god of life, I am reminded of a sect who, to this day, dwell in the lower valley of the Euphrates, near its confluence with the Tigris. They are called *Mandaens*, not *Mundaens*, and more frequently Christians of John the Baptist. They believe in “Chayah Kadmayah,” the origin of life or first cause, the infinite, eternal energy. Their sacred books are called “Mandah Chayah,” “knowledge of life,” and they pretend that they were delivered to their ancestors by Adam. They are written in ancient Syriac, which they read without understanding the meaning of the words. Many of their rites and ceremonies bear traces of Assyrian origin. May they not be descendants of the ancient worshippers of Ea, Hea, or הָיָה, the God of life and knowledge, the offspring of the sky? There is a reference in the paper to the size and splendour of Babylon. From the extent of the ruins which lie buried beneath the mounds that dot the desert plain, it must have been a city worthy of the proud boast of Nebuchadnezzar:

"Is not this great Babylon that I have built for the house of the kingdom by the might of my power, and for the honour of my majesty?" But it was foretold that Babylon, the glory of kingdoms, the beauty of the Chaldees' excellency, was to become a desolation and the abode of wild beasts; and no one can visit those vast ruins without feeling that the prophecy has been changed into history, and the inspired denunciations into accomplished facts. (Applause.) I speak here of what I have seen with my own eyes, and I have no doubt that Mr. Rassam, whom I am glad to see here, has also looked upon the same scene. I would say, in conclusion, that the subject of the derivation of the word Ea, or Ia, is certainly one of very great interest as well as of great importance, particularly at the present day, when theories concerning Jehovah, or Javeh, are so often being disputed and discussed. (Applause.)

Mr. W. St. C. BOSCAWEN.—I am extremely glad to have been here to-night to hear Mr. Budge's paper read, because it forms quite an elaborate appendix to that which I had the honour of bringing before this Institute last month. If we take the dry and perhaps unsystematic arrangement of the sentences in the Assyrian as literally translated, the good points of the inscription in Mr. Budge's paper may not at first appear; and this being so, I will endeavour, in as few words as possible, to put before you some of those points which strike me most forcibly in connexion with this subject. In the first place I would remind you that we know very little of Nebuchadnezzar, from an historical point of view, beyond what appears in the Bible. It is a remarkable fact, that we have in the British Museum some thirty or forty inscriptions belonging to Nebuchadnezzar's reign, all of which record great works such as the buildings at Babylon. We have dedications of temples and public structures, but only one small fragment of some fifteen or twenty lines or so, which has any relation to his historical career. Nevertheless, there are a number of fragments which constitute indirect pieces of evidence tending to show that the Biblical accounts of Nebuchadnezzar's campaigns are historically correct. Mr. Budge has referred to the prominent part which Riblah took in the campaigns of Nebuchadnezzar. You may remember seeing a few weeks ago, in the *Times*, an interesting letter from M. Ganneau, giving an account of an important discovery made in the neighbourhood of Hermul, showing that within a few miles of Riblah the Assyrians had an important station, to which they brought down the cedars cut in the Lebanon, and where those cedars were trimmed and prepared for the purpose of being carried to Babylon. What is now known of Nebuchadnezzar is principally from his boast of having rebuilt Babylon. He might indeed say, "Is not this great Babylon that I have built?" for there is hardly a building or mound throughout the whole of Babylon or Chaldea, or any place in which bricks are discovered, where we do not find the inscribed bricks of Nebuchadnezzar. This brings very vividly before us the works that great king carried on in Babylon; and if I may be allowed, I will refer to one or two interesting points in connexion with these works

For instance, in one of the inscriptions we have, he gives an account of the building of one of his temples. He tells us that the roof and ceiling of that temple were of cedar, and covered with gold. This is an interesting comment on the construction of the Temple at Jerusalem; the lavish use of gold and precious stones in the building of these temples giving us a clear indication of the great wealth which must have been pouring into Babylon at that time. (Hear, hear.) The work of rebuilding Babylon was a work that had become an absolute necessity. The vengeance wreaked on that city by Sennacherib, in the campaign of 694 B.C. had resulted in its almost total destruction. Sennacherib says in the Bavian inscription, he swept the city from end to end; that he destroyed the houses; threw down the walls and the fortifications, and swept the *débris* into the river. The destruction thus completely carried out was in revenge for the rebellion of the Babylonians, and although he and Assur-bani-pal repaired them in such imperial style, Babylon never regained its title of the Glory of the East until the time of Nebuchadnezzar, who, as we find it recorded, was engaged throughout his reign, which occupies nearly half the period of the later Babylonian empire, in reconstructing the cities and temples of his kingdom. One of the most valuable portions of this inscription is the prayer which comes at the end. Although it is a prayer of an essentially heathen character, yet if you substitute the name of Jehovah for that of Marduk, you will find phrases that are identical with some of those occurring in the Psalms. Again, in the case of the other inscription, which is one of the longest of the inscriptions we have of Nebuchadnezzar, we have a prayer differing from this in its phraseology, but which is, nevertheless, the prayer of a king whose heart and life are given up to the worship of one god—Marduk, the great Bel of Babylon. There is a large number of inscriptions that have come to us lately, which show that from a very early period throughout the whole of the religious development of Babylon there must have been priests who approached very nearly to monotheism in their creed. (Hear, hear.) The belief that sin was an offence which brought punishment and affliction on its perpetrators, and that an act of sin was also a moral offence against God, is actually brought out in those inscriptions. (Applause.) And what is more remarkable is that those who had sinned did not go directly to the god they worshipped, but required a mediator between themselves and their deity. That mediator was the god Marduk, who went to his father,—the god who Sir Henry Rawlinson maintains is that of the monotheistic priesthood,—and obtained the necessary pardon. The Greeks say that Marduk was half-god half-man. It would seem that the Babylonians had worked out at a very early period, probably prior to the Abramic migration, a theory which in after time reached a much higher stage of development in the creeds of both India and Chaldea. The importance of these inscriptions leads me again to speak of another matter, of which I should never be tired of talking, and that is the importance of going on with this work of exploration. (Hear, hear.) These inscriptions bring before us a number of stern, dry facts. We do not

speculate upon them as to whether Moses knew the number and character of the bones in the ichthyosaurus or the megatherium, but we have a number of problems presented to us in the Bible the only solutions of which can be found in the bricks brought from the ruins of Babylon. I say, therefore, that it is the duty of all of us at the present time, when so many attacks are being made on the statements of the Old Testament, to endeavour to bring prominently forward those facts, the explanations of which still lie buried beneath the mounds of Chaldea. (Hear, hear.) We have got a great deal already, but we want a great deal more, and until we obtain what we still need we should not rest. Therefore I think that an Institute like this, numbering as it now does over a thousand members, must surely have the power to assert itself and to agitate in regard to this matter; because I am grateful even for the help that a little well-directed agitation is likely to afford. (Applause.) It is easy to sit still and say that this or that ought to be done, but that is not enough. We have had no end of such sympathy, and the promises of aid have been numerous, but I am tired of promises only and want to see our friends really take the matter up, and, if possible, get up an influential deputation to the proper authorities so that the voice of a Society like this may not only be raised but be heard by those officials whose duty it is to undertake the carrying on of the work, so that it may at length be satisfactorily accomplished. (Applause.) If this were the case the "Transactions" of the Victoria Institute might be filled with papers such as that we have just heard, so that questions of a critical character with regard to the matter contained in the Bible,—not the criticisms evolved from the brain of some learned member of the University of Oxford, Leipsic, or Cambridge, but critical matter, written almost before some of the books of the Bible were indited, and which come to us untainted and undamaged by popular or theological prejudice,—may be fully and fairly set forth and discussed. (Applause.)

Rev. W. WRIGHT, D.D., a visitor.—I have had very much pleasure in listening to the paper that has been read to-night. All look forward to great things on this subject from Mr. Budge, and I think may expect to get them. He is, I think, a man whose scholarship no one will question, and who is so zealous as to collect the dry details of recent Assyrian research and put them together in a sufficiently attractive literary form to be placed before the public. There are a good many things stated in this paper that cannot but interest not only those who belong to this Institute, but Christians at large. The passage which I find on the fifth page of the paper is well worth the attentive consideration of all believers in Christianity; here, at any rate, apart from the suggestion made by the last speaker as to the notion of a mediator, we have the Great Father. Then we have Marduk, the son; and we find that son put forth here as a mediator between man and the great God—between sinful humanity and Ea—the penitent sinner coming direct to Ea through Marduk. This, I think, is worth considering. The natural forms common to the Biblical lands are worked

into the whole text of the Bible ; even the most spiritual thoughts in the Bible are to a great extent limited by the ideas derived from natural and material things. The most fervent aspirations of our souls towards God only find their due expression in thoughts which had their natural birth in Bible lands. If you take any of these expressions you will see that this is so. For instance,—“Lift on us the light of Thy countenance.” Here we have before us the idea of a man who, being dragged before a judge, who, if he is not going to pardon the prisoner, frowns upon him, but, if he means to extend a pardon, lifts on him the light of his countenance. Again, the Saviour said, that the kingdom of heaven was likened to things on earth, meaning that the spiritual and heavenly are pictured in earthly material ; and any one who goes to Syria or Palestine is certain to see a complete panorama of Bible pictures, there being scarcely an object in those countries that has not its reflection in some part of the Bible. Just as you see a physical basis for our spiritual nomenclature, so also do you find, as evidenced in the paper this evening, what you may call a community of ideas as the basis of the Semitic thought in the early ages ; but I prefer to look on it as a feeling after a higher truth which was developed even in earlier ages. I feel that I have been well repaid for coming here to-night ; and I have no doubt that ultimately we may find in some of these things that are brought under our notice, purer and higher thoughts, in which we shall find Divine love and the form of love—love as the substance, and righteousness as its form and expression.

Mr. HORMUZD RASSAM.—What I have to say will be mainly superficial, while it will be special as regards that branch of knowledge which I have pursued in the course of my travels, and also to the acquaintance I have with the different languages of the East. With respect to Nebuchadnezzar, my friend Mr. Budge has given us a different meaning of the name to that which is rendered by other Assyrian scholars, and I have no doubt that my friend Dr. Stern, who is present here, has also his own interpretation of it. What I have always understood, and what I believe the name to mean, is, *Nebo-chod-nazar*. *Nebo* signifies the idol of the Assyrians, *chod* is the name of God in Kurdish, and *nazar* means victory, *i.e.*, “the God Nebo give me victory.” This, at least, is what I always understood to be the meaning. I trust that Assyrian scholars will apply themselves to the Kurdish in studying these inscriptions, as I believe they will derive great help from it. In page 4 of the paper is a passage to which I must take exception. Mr. Budge merely quotes it, and therefore is not responsible for it. I have had the honour of being associated with this Institute for many years, and I should not like it to be passed without making a remark thereon. I allude to the passage which has reference to Elohim. The author, speaking of Ea, says, “He was the husband of Bahu or Chaos (the בְּהוּ of Genesis i. 2), and made father of Bel-Merodach.” Sir Henry Rawlinson thinks the monotheistic Hebrews of Ur belonged to the followers of Hea. He says, “He was the ‘Creator of mankind,’ ‘the God of life and knowledge,’ ‘the Lord of

Thib (the blessed city) or Paradise,' and exhibits many other traces of identity, with the Elohim of the Jews." This is the first time I ever understood the Elohim not to be the Elohim of the Christians, and indeed of the whole universe. The phrase, "the Elohim of the Jews," and, therefore, not ours, seems to me a very extraordinary one. I, for one, would be very sorry not to understand that Elohim is my God, the same as the Elohim of the Jews. (Hear.) I suppose most of you have read in many travellers' books the mention of the name of "Allah," and regarded most probably by some as if He is a mere idol of the heathen tribes. I can well understand that an English soldier who hears the word "Allah" in India, and not knowing that the Moslems are not heathen, would misunderstand the word to mean the name of an idol. If I were to go to the East and use the word God in Arabic, and not translate it into the word "Allah," it would be considered that the English did not worship the same God. Then with regard to the word Babylon, which is a corruption of Babel, its meaning is in every language identical with the word given in Genesis xi. 9: "Therefore is the name of it called Babel, because the Lord did there confound the language of all the earth, and from thence did the Lord scatter them abroad upon the face of all the earth." Whether in Hebrew, Arabic, or Syriac, it has the same meaning. In all these languages they call it "Babil"; and what proves my theory with regard to this word more than anything else is the Septuagint, which does not mention Babylon at all, but only says that on account of the confusion of languages which took place at the building of the tower, it was called so. In the Greek it is called Σύγχυσις, which means confusion. As to what the Gentile kings chose to call it, you will find the word Nazareth explained by different nationalities by different meanings: some say it means separation, or a place set aside for a certain purpose; whereas the Mahommedans say it means "the victorious." We cannot at all account for the way in which the different nationalities in those countries have changed one word into a number of meanings. Referring to what Mr. Budge has said about the word "ganith," which, according to his theory, may mean "garden," I would point out that in Arabic the word for garden is *genna*, and the same word is applied to the kingdom of Heaven. The letter g in Arabic being pronounced soft, like the g in George. With reference to the bricks of Nebuchadnezzar, I must add my testimony to what Mr. Boscawen has said, namely, that there is not a place in Babylonia where I have made excavations, without a single exception, where I have not found the name of Nebuchadnezzar on the bricks discovered. Of course, it is understood that there were three kings of that name, and I thought at one time that the marks on the bricks might refer to different kings, because I could hardly suppose that one man would have built so many places as were found in the mounds explored. But I found that the name applied to the one king only, *i.e.*, the Nebuchadnezzar of Mr. Budge's paper, and of the Bible; for they mention the father of that potentate, and therefore he must be the person

alluded to, as we can scarcely believe that the fathers of the other Nebuchadnezzars had also the same name. Referring to what has been said by Dr. Stern, I would add this, that there is one thing which has struck me as much as anything I have met with in the course of my explorations, as to the fulfilment of prophecy, where it is said in Jeremiah (l. 2),—"Bel is confounded, Merodach is broken in pieces; her idols are confounded, her images are broken in pieces." We have found some entire idols and images in Assyria, but in Babylon we have only met with trunks or fragments. When we get a trunk, we find no head, we find heads without trunks, arms without hands, and trunks without either. I am sorry to say I cannot give an opinion about the Assyrian language, which can hardly be left in better hands than those of Mr. Budge, and I only hope that through his knowledge of Syriac he will be able to surpass all the other Assyrian scholars in explaining certain mysteries in connexion with the ancient languages of those countries. (Applause.)

The CHAIRMAN.—It now becomes my duty to say a few words upon the paper before us. It is the custom for the Chairman on these occasions to gather up the threads of the various replies and comments on the paper read to us, and to give his own opinion upon the subject. I am quite sure that all present will agree with me that on the present occasion the Chairman can hardly be expected to add anything. It appears to me as a philologist that in the case before us we have exceedingly fertile ground. We know in agriculture that where three kinds of soil meet—clay, sand, and chalk—the land is fertile. Now, we have here the three great families of human language meeting together: Akkadian, which is Turanian, Semitic, and the Babylonian of the later inscriptions, a tongue towards the understanding of which Mr. Rassam has told us the Aryan Kurdish will be of great value. So we have here a very fertile philological soil to deal with. The learned writer of this paper has dug into this soil with great success, and I trust that the result of his trenching will be that it will continue to produce such fruit as may amply repay his labour. I should like to say one word in favour of my old friend Babel. It was new to me to hear Babel spoken of as the "Gate of the Gods." In the Hebrew it is not "Bab-el," but "Ba-bel," and I was under the impression that the word was derived simply from "bah-bah," which means confusion or chattering. Our "babble" is simply "ba-b," with the frequentative termination "le." With regard to Nebuchadnezzar, I suppose the correct form of the name was Nabu-kudur-uzur, but the Hebrews preferred to call him Nebuchadnezzar. So the literal translation of Chushan-rish'athaim is "dark one of double wickedness." I have always thought this to be a corruption, probably intentional, of the real Mesopotamian name: some such corruption may have taken place in the name of the King of Babylon. Just so, Beelzebub (*Syr.* B'el-debobo) means "lord of hatred"; the Hebrews chose to call him Beelzebub, "lord of dirt." I merely give these as specimens of the way in which names may be corrupted, and as a suggestion that there may well have

been two readings of the name. You will now be anxious to hear what further you may get out of Mr. Budge on some of the points that have been raised. With apologies for not having been able to gather up the various points of the discussion better than I have done, I now call on him to reply.

Mr. BUDGE.—With regard to what has been said as to Bible names, every one who reads the Jewish names in the Talmud, or even in the commentaries thereon, will at once see how they have been corrupted, so that even the most familiar words have been made into rubbish. In the case of the name Nebuchadnezzar it is spelt out fully in the inscription, and there is no doubt about its meaning. I need hardly mention that the form Nebuchadrezzar is the more correct. Nebuchadnezzar was a noble enemy, and, although the Jews treated him in a most shameful way, he gave Jeremiah his freedom and sent him out of the way of harm. It must not be forgotten that Abraham came from Ur, and when the subject of monotheism is alluded to we should remember that God said to him, "I will be your God and give you the land." Moreover, God said to him, "I was known to your fathers under the name of El Shaddai, but you did not know Me by the name of Adoni." So that El Shaddai was one of the names of Abraham's great God. Another form is Ea. The Babylonians had not only a form for God in the shape of matter, but they personified Him as the sea and in other ways. The followers of Ea were evidently monotheists, and there can be no doubt but that the great Greek, Plato, came near the true light, while those who followed Ea were, after all, not very far out. The Jews, when they were brought to Assyria, would there have recognised the kindred form of their own worship. The Babylonians started by worshipping everything in nature which could be deemed worthy of worship; but by-and-by came the conclusion that some of their gods were not so worthy of worship as the others. Hence they came to have chief gods, until at length the monotheists carried their ideas so much further that they probably got a very near approach to the Jewish idea of God. I have always held that in the Syriac and Chaldee there remains a great deal of the actual speech of the population of Babylon. Mr. Boscawen has mentioned the literal character of the translation given of the inscription at the end of the paper. It is a rugged translation, no doubt. The first thing in the case of all these inscriptions is to say what the words mean. When you have got the true meaning of a word it is easy to dress it up into polished English. Assyrian has not yet been brought to such perfection that a man like the late Lord Derby can sit down and write a translation of it as he did in the case of Homer, expressing in elegant phraseology the meaning of the author; in that case he would be sharply criticised, for Assyriologists do not always speak in the kindest way of each other. A difference of expression in the case of the Assyrian would frequently alter the whole meaning. As to what Mr. Rassam has said, I feel that on one point he has raised what is somewhat of a personal character. I read a tablet, five or six inches long and three or so broad, which recorded the fight between

the great god Marduk, the Son of the Earth, or Damkina. It is, in fact, only the old story of the fight which went on through all the Aryan mythology—the contest between light and darkness, and, metaphorically, between good and evil. We have only one part of the tablet; the other is still under Babylon, waiting to be dug out by Mr. Rassam. In another case a piece of a tablet came over. It was only a few inches long and a few inches broad. Mr. George Smith made out part of a story from the inscription upon it, and shortly afterwards Mr. Rassam brought over another piece which fitted the first and turned out to belong to the very same inscription. In 1881, Mr. Rassam sent over some more materials, one of which proved to be the bottom of the tablet, and from these fragments was built up a complete history. Such is the fate of some of the tablets. With regard to the word Babel, it is written בָּבֶל in the Hebrew. If it meant confusion, there is a root for it in the Hebrew, which is בָּלַל, which means to “confuse.” If *Bālal*, or *Balbél* is to come to Ba-bel, one “l” must be assimilated, and you must have Bab-bel for Bal-bel. The inscriptions, however, spell it *Ba-bi-lu*, so there is no doubt whatever about it meaning “Gate of God,” or *Bab-el*, and the word has nothing to do with “confusion.” I have treated this matter at some length in my forthcoming little book on “Babylonian Life and History.” As to Nineveh, it is not the fish city which some people say it is. The name is made up of signs which mean city, couch, and Nana respectively, all of which means the resting-place of the chief god Nana. I have now only to thank the meeting for the manner in which my paper has been received.

The meeting was then adjourned.

ORDINARY MEETING, FEBRUARY 18, 1884.

J. A. FRASER, ESQ., M.D., INSPECTOR-GENERAL OF HOSPITALS,
IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

MEMBER :—H. C. Saunders, Esq., Q.C., M.A. Oxon., London.

ASSOCIATES :—J. Cassidy Travers, Esq., London ; F. J. Hughes, Esq., Isle of Wight.

HON. LOCAL SECRETARY :— Rev. C. Beckett, M.D., Weimar, Germany.

Also the presentation of the following Works for the Library :—
 “Proceedings of the American Geographical Society.” *From the Same.*
 ” ” ” Geological Society.” ”
 The following paper was then read by the Author :—

BUDDHISM, IN RELATION TO CHRISTIANITY.

By the Rev. R. COLLINS, M.A.

SPEAKING some time since at a meeting, I ventured to use as illustrations one or two of the more striking stories in the *Jātakas*, or tales of the 550 births of Buddha. A layman, who succeeded me, observed that, had I had time, I might have told the audience that Buddhism was a religion long antecedent to Christianity; and that many of the moral teachings, of which we had previously believed that they belonged to Christianity alone, had been already enunciated by Buddha.

2. Though not so far untrue, this is the somewhat naked thought that has taken possession of the popular mind. And

the question has readily followed, If Buddha six centuries* before the Christian era taught so much of what we have called Christian ethics, is Christianity original? And may not Christ and his followers have been indebted to Buddhistic teaching?

3. One recent writer has been so far under the influence of this suggestion, that he endeavours to trace the Pauline doctrine, and especially the doctrine of the Epistle to the Hebrews, through the Essenic channel up to Gautama Buddha, though there is really no valid proof that the Essenes were in any degree indebted to Buddhism. It is, in fact, easier to show the probability of the influence of the Christian religion in India in the early centuries of the Christian era, since which time the Buddhist literature has been penned, than the probability of the influence of Buddhism westwards before that era. There is no really historical evidence of the name, for instance, of Buddha himself having travelled westwards before the time of Clemens Alexandrinus in the third century: he is the first to mention the name of Buddha in these words:—"Some, too, of the Indians obey the precepts of *Boutta*, whom, on account of his extraordinary sanctity, they have raised to divine honours."† His information was, no doubt, in a great measure derived from Pantænus, whose pupil and successor he was; but he is also indebted to as early a writer as Megasthenes, who was in India, and wrote his *Indica*, about 300 B.C. Bardesanes, of Edessa, in the second century A.D., as quoted by Porphyry,‡ refers probably to the Buddhists, but in a very cursory manner, as of something very distant, and not giving any information as to Buddhist doctrines. The distinctive characteristics of Buddhism are wanting in all other early descriptions of Indian philosophies that are usually quoted. Between the time of Clemens and Megasthenes there is no reliable evidence of any influence exerted by Buddhism in the West, and only the most meagre hints of even the knowledge of the fact that such a religion existed. With regard to Megasthenes himself, from whom most subsequent writers seem to have borrowed, like Clemens, when writing on the philosophies of the Indians, it is extremely doubtful whether he even alludes to Buddhism at all. His *Sarmanæ*, which have been connected with the Buddhist monks, or by some with the

* According to the Ceylon books, the date of Gautama Buddha's birth was 623 B.C. This date, however, is not absolutely verified, and it may ultimately prove to be somewhat too early.

† Clemens, *Stromata*, i. 15.

‡ Porphyry, *De Abstinentiâ*, iv. 17.

Jains, because they were called *Sramana*, were not necessarily Buddhists, or even Jains. The *Hylōbii* (Ὑλόβιοι) among them (so called by Megasthenes) who dwelt in the forests, are described as living on leaves and fruit, which the Buddhists never did, but on alms. The *Hylōbii* were, doubtless, as the name implies, the *Vāna-prasthas*, who were Brahman ascetics. The word *Sramana* was not invented by the Buddhists, but was applied to ascetics long before the time of Buddha. Indeed, the very term *Gymnosophists*, under which Clemens classes "the *Sarmanæ* and other Brahmans," excludes the Buddhists, who not only did not go about *in puris naturalibus*, as some of the *Vāna-prasthas*, or *Sanyāsis*, did, and still do, but clothed themselves from head to foot, as a very essential part of their religion.

4. The asceticism and love of righteousness of the Essenes were not necessarily derived from Buddha. The love of righteousness was equally prominent in the time of Job, who lived probably 1,500 years before Buddha; and asceticism seems to be due to the idiosyncrasies of individual men in all races rather than to mere sectarianism, and would appear always to have arisen as the human protest of purity against the greed and licentiousness of the world. The doctrines of the Essenes and of the Gnostics also connect them rather with Greece and Persia than with India. The really peculiar marks of Buddhism, such as the doctrine of the *non-ego*, and the transmission through successive births of the *Kamma* or *Karma*, if they were parts of early Buddhism, are certainly not reproduced among either Essenes or Gnostics. And, even could it be proved that the Essenes were indebted to Buddhism, we should claim much better evidence than Mr. Bunsen produces, before we could allow, notwithstanding the suspicion of Eusebius, that they themselves influenced the Christian story as found in the New Testament.

5. According to this writer, even John the Baptist also was a half-Buddhist, because, among other reasons, Bethabara, where he is said to have been born, may perhaps, Mr. Bunsen says, be a misprint for "*Betharaba*," which may have been a place on the west coast of the Dead Sea, where the elder Pliny says the Essenic body had their chief settlements. Moreover, "John the Baptist is only another name for John the Ashai or bather, from which the name of the Essai may now be safely assumed to be derived."* Add to this that

* The common derivation of Ἐσσηνοὶ or Ἐσσαῖοι, is Heb. *āsā*, Chald. *āsayā*, "to heal," because the Essenes were *physicians*.

“John was a Gnostic, which word has the same meaning as Buddhist,” and the evidence is assumed to be complete that John the Baptist inherited Buddhistic lore.* These seem to me to be gratuitous assumptions of the most ghost-like consistency.

6. Another assumption of the same author is that the peculiar name which Gautama Buddha so often applies to himself, *Tathāgata*,† means “he that should come.” It is difficult to see how the word, mysterious though it may be, can be twisted to such a meaning. Dr. Oldenberg translates the same word by “the perfect one.” There is, at all events, not much in common between the two ideas; but, whatever be the real import of *Tathāgata* (literally, *such a one*, or, *having arrived at such a state or condition*), our author paraphrases it, to assimilate it to the phraseology of the New Testament, by certain words of John the Baptist, or, as he calls him, the Essene; and, in accordance with this translation of the name, he speaks of the owner of it as the *Christ* of the Buddhists. He asserts that the Hindus, 600 years before the Christian era, were in possession of prophecies of a coming Messiah, and that they recognised the fulfilment in Gautama Buddha. Thus he says:—“Gautama Buddha, the preacher of a ‘tradition from beyond,’ from a supermundane world, was regarded as one of the incarnations of the first of seven Archangels, of Serosh, the Vicar of God, and the first among the co-creators of the universe.” All this would be extremely curious could a single passage be found in the Pāli texts to show that the early Buddhists regarded the founder of their sect as the incarnation of any one. An incarnation in this sense is foreign to the character of early Buddhism altogether, and certainly is not consonant to the Buddhistic doctrines as to the *Kamma*, or *Karma*, in relation to successive births. Nor can it be shown that the Buddhists knew anything of “Serosh, the Vicar of God, and the first among the co-creators of the universe.” Nor is there any real proof of so intimate a connexion between Buddhism and Parsism in doctrine, as Mr. Bunsen postulates. Indeed, the very translation of *pāramita* by “tradition from beyond” is an illustration of how Mr. Bunsen likes to bring distant analogies too near, if they only suit his purpose. The Sanscrit *pāramita* is, no doubt, analogous in its derivation to the Latin word

* Bunsen's *Angel-Messiah*, pp. 148 *et seq.*, and 343.

† *Ibid.*, pp. 18 and 341.

traditio; but the meaning of a word is determined by its usage, and not merely by its derivation, and *pāramita* was used to indicate the *transcendent*, not the *traditional*. The *pāramitas* were the *virtues* practised by the Bodhisat, so called because they were held to be *transcendent*, or perfections.

7. By false and superficial reasoning of the kind I have mentioned,—and further instances might be very greatly multiplied, as that Buddha was born of a virgin, of which no thought is breathed in the early notices of his birth: that there is some mysterious connexion between the name of his mother Maya, and the name of Mary, the mother of Jesus: that, as Burnouf states, the elements of the legend of Christ are to be found even in the Vedas, and that the Vedic *Agni* is to be identified with the Christian *Agnus*: that Christ himself travelled to the far East, a pure assumption: that the doctrine of a Messiah can be shown to have been introduced into Judaism from the East, which it cannot: that the birth of Buddha was attended by miracles, which is an addition to the story in after ages: that Buddha taught the great doctrine of “vicarious suffering,” of which there is nothing in the first accounts of his teaching: that Buddha was born, like Christ, on the “Sun’s annual birthday,” December 25th, which cannot be proved either in the case of Buddha or Christ; that ancient prophecies were afloat marking that particular time as the birth-date of an expected Messiah, which statement is entirely without foundation; and by many other equally groundless statements,—a glamour has been thrown over the history of Buddhism which intrinsically it does not possess; and it is to be feared that not a few minds have thereby been greatly perplexed between the relative claims of Buddhism and Christianity. That Christianity has only been shining by borrowed light from India and Irania is a theory which will not bear accurate investigation.

8. But I do not propose to approach this subject further to-night in the way of destructive criticism, though I have ventured to give one or two instances of the kind of argument one meets with. But within the compass of this short paper I prefer now to draw attention to some of the facts of history and tendencies of the human mind, which may, I think, prove to be safe guides in our investigations as to what Buddhism really is in its relation—if it have any relation properly so-called—to Christianity.

9. And now let us look more carefully at some of the analogies that exist, or are said to exist, between Christianity

and Buddhism. They are of two distinct kinds: first, there is the morality of Buddhism, often of extreme beauty; and, secondly, there are the accounts of the person and character of Buddha himself. In regard to each of these we can find, or imagine, certain parallels in either the Old or the New Testament. What do these parallels mean?

10. Let us take the second class of parallels first, those which relate to the persons and characters of Buddha and Jesus Christ. Take, as a prominent instance, the birth stories. I need not here give details, which are to be found in any modern work on Buddhism. The supposed miraculous conception; the bringing down of Buddha from the Tūsita heaven; the Dēvas acknowledging his supremacy; the presentation in the Temple, when the images of Indra and other gods threw themselves at his feet; the temptation by Māra,—which legends are embellished by the modern writer I have already quoted, under such phrases as, “Conceived by the Holy Ghost,” “Born of the Virgin Maya,” “Song of the heavenly host,” “Presentation in the Temple and temptation in the wilderness,”—none of these are found in the early Pāli texts. The simple story of ancient Buddhism is that an ascetic, whose family name was Gautama, preached a new doctrine of human suffering, and a new way of deliverance from it. The surrounding of Buddha with the attributes of divinity is an exaltation of his person by the later Buddhist writers, which is entirely foreign to the earliest elements of his history as gleaned from the Pāli texts. To write a consecutive history of his life at all was an after-thought. The earliest Buddhist writings relate his teachings, with only cursory intimations as to his personal history. From them we glean that he was the son of Suddhodana, who was a king residing at Kapilavatthu; whether a ruler over extended territory, or only what would now be called in India a “petty rajah,” may be left doubtful. Surrounded from his infancy with some amount of wealth and luxury, as he afterwards told his disciples, this intellectual youth,—for such he must have been in an eminent degree,—was led to reflect on sickness, decay, and death; and while he thus reflected in his mind, “all that buoyancy of youth which dwells in the young, all that spirit of life which dwells in life, sank within him.” Though he was married, yet at twenty-nine years of age he left his home to become an ascetic. This was no unusual course; and he sought two other Brahman ascetics to be his teachers. Dissatisfied, however, with their teaching, he travelled to Uruvelâ, or Buddha Gayâ, near Patna, where he spent, it is said, seven years in discipline, meditation,

and study. How far that study embraced what might be the tradition of the past we have no means of certainly knowing ; but he is said to have been determined to be a " follower of the Buddhas of bygone ages " ; and that may mean, that during his years of seclusion he had the means of canvassing the teaching of some of the leaders of mankind, who had gone before him. There is nothing divine in all this ; nor is anything claimed for him beyond the actions of an earnest ascetic. What there was of the divine in his mission was, according to the *Mahāvagga*, external to himself. It is remarkable that, though Buddhism, now at least, is atheistic, yet the supreme Brahma, called by the Buddhists Brahma Sahampati, is constantly mentioned, even in the oldest texts, as influencing Buddha ; and when he first felt enlightenment, Brahma Sahampati is said in the *Mahāvagga* to have encouraged him in preaching his doctrine. May not this mean, that Buddha in the first instance claimed divine authority for his mission ? And what was his mission ? It was, in the main, to preach, according to his lights, much as Savonarola did in Florence, against the vices of the day. In all this there is nothing but the earnest monk preaching purity of life as the way to happiness now and hereafter. There is no thought in the early Buddhism, of which we read in the Pāli texts, of deliverance at the hands of a god ; but the *man* Gautama Buddha stands alone in his striving after the true emancipation from sorrow and ignorance. The accounts of his descending from heaven, and being conceived in the world of men, when a preternatural light shone over the worlds, the blind received sight, the dumb sang, the lame danced, the sick were cured, together with all such embellishments, are certainly added by later hands ; and, if here we recognise some rather remarkable likenesses in thought or expression to things familiar to us in our Bibles, we need not be astonished, when we reflect how great must have been the influence, as I have before hinted, of the Christian story in India in the early centuries of the Christian era, and perhaps long subsequently. This is a point which has been much overlooked ; but it is abundantly evident from, among other proofs, the story of the god Krishna, which is a manifest parody of the history of Christ. The *Bhagavat-Gīta*, a theological poem put into the mouth of Krishna, is something unique among the productions of the East, containing many gems of what we should call Christian truth, wrested from their proper setting, to adorn this creation of the Brahman poet, and indicating as plainly their origin as do the stories of his

life in the *Mahā Bhārata*; so that it has not unreasonably been concluded that the story of Krishna was inserted in the *Mahā-Bhārata* to furnish a divine sanction to the *Bhagavat-Gīta*. If, then, as there is the strongest reason to believe, the Christian story, somewhere between the first and tenth centuries of the Christian era, forced itself into the great Hindu epic, and was at the foundation of the most remarkable poem that ever saw the light in India, can we be surprised if we find similarly borrowed and imitated wonders in the later Buddhist stories also ?

11. The early influence of Christianity in India may have been very much greater than is generally supposed. We must not judge only by the India of our own era. Buddhism itself once held supreme sway in India, but there is not a Buddhist now to be found between the Himalayas and Cape Comorin. Cosmas Indicopleustes, in the sixth century, found Christians in Ceylon; but, though I made diligent search when in the island some years ago, I could not discover any trace or tradition of them remaining. India has been the scene in the past of great and sweeping changes. But it is to be observed that there is still on the Malabar coast a body of probably 250,000 Christians, the representatives of a Church that was undoubtedly founded by an Apostle or Apostles. This may be only a remnant of what once was a much more widely-extended influence; for, at the Mount, near Madras, there is an ancient Christian cross with a Pahlavî inscription, first deciphered by the late Dr. Burnell, that seems to belong to not later than the seventh or eighth century. There is a similar Pahlavî inscription on a cross at Kottayam, on the Malabar coast; and other crosses, with writings in the same character, were recorded by early Roman Catholic missionaries. There are also Pahlavî writings in the caves near Bombay. These Pahlavî inscriptions are to be accounted for, I believe, by the early and continued connexion between the Indian Christians and Edessa, and may indicate a very wide-spread Christian influence in the past.* When we know also

* See *Indian Antiquary*, vol. iii., p. 308; vol. iv., pp. 153, 183, 311, &c., for fuller discussion of this subject between Dr. Burnell and myself. Pahlavi was the Court language of the Sassanian dynasty in Persia (226-651 A.D.) The authorised version of the Avesta, in use at that period, as well as contemporary inscriptions, were in Pahlavî. It is an Aramaic dialect, supposed to be a dialect of ancient Assyria. It is, therefore, the language that early Edessan and Babylonian Christians would probably bring with them to India. The traditions of the Jacobite Church on the Malabar Coast connect them in their early history with Edessa and Babylon. They even now own

that Pantænus of Alexandria found a Hebrew Gospel of St. Matthew during his mission in India in the second century; that a bishop, signing himself "Metropolitan of Persia and the Great India," was present at the Council of Nicæa in 325 A.D.; and that Cosmas found Christians in India and Ceylon in the sixth century, we cannot wonder if we seem to find evidences in the later Buddhist writings, as well as in the *Mahā-Bhārata* and the *Bhagavat-Gīta*, that the Christian story was well known, at least to the learned.

12. There need be no great mystery, then, in the similarities between the personal histories of Buddha and Christ. And I would only here add that, in tracing such historical parallels, it is desirable to observe, if possible, when a story first appears,—a rule that has not always been followed by recent writers on Buddhism and Christianity. The story of the temptation of Buddha by Māra* (the Buddhist Satan) may be taken as an example. It is not contained in what is manifestly the earliest account of the entrance of Buddha upon his ministry in the *Mahāvagga*, the comparative antiquity of which is undoubted. M. Senart, when he

as their ecclesiastical head the Patriarch of the Jacobite Church at Mardin, a little to the east of Orfah (the ancient Edessa). The late Bishop of the Malabar Christians, Mar Athenasius, went himself to Mardin for consecration. These Malabar Christians still retain six copper plates, on which are inscribed, in the old Tamil vernacular of the country, certain rights and privileges accorded to the Christian community; on one plate are the signatures of the witnesses, ten of which are written in Pahlavi characters, eleven in Kufic character, and four in Hebrew. This *Sasanam*, or grant, has been believed by, amongst others, Dr. Haug, Dr. E. W. West, and Dr. Burnell, on antiquarian grounds, to belong to not later than the ninth century. This is confirmed by the fact that on one of the plates is the date 36, which, if it belongs to the era at present in use in Malabar, must point to that century, the Malabar year now being 1059. Such a grant must indicate that the Christians had by that time acquired a very important status in the country. The chief Rabbi of the Jews at Cochin, on the same coast, has a similar grant on copper plates, and of no doubt the same date. The tradition, indeed, of the Jewish Colony is that their *Sasanam* was made in the fifth century. The existence of Pahlavi inscriptions on the ancient crosses and *Sasanams* of the Christians led Dr. Burnell, who was a careful student, to believe that the early Persian settlers, or missionaries, were Manichæans. There is, however, no valid evidence for the Manichæan as against the Christian theory; and if Dr. Haug's translation of the characters that surround the St. Thomas's Mount and Kottayam crosses be correct, the inscription is eminently Christian: "Who believes in the Messiah, and God above, and in the Holy Ghost, is redeemed through the grace of him who bore the cross."

* Māra, the destroyer; in the language of the Vedas, death; the Sanscrit root being *mri*, to slay.

would convert Buddha into the mythical Sun-hero, must have chosen his colours from more modern palettes, from the commentary of the "Jataka," or even the "Pūjāwaliya," which last was probably written not before the thirteenth century of the Christian era. It is from the last source that the greater part of Spence Hardy's descriptions are drawn. Bigandet, Beal, Burnouf, and other writers on Buddhism, also draw greatly on later accounts. How far even the Pitakas themselves represent the whole truth of original Buddhism is undoubtedly problematical; for, according to the Ceylon accounts they were not committed to writing, but were only orally preserved, for nearly 500 years. And the commentaries by Buddhaghosa, so highly esteemed as exponents of Buddhist doctrine, are said on the authority of the Singhalese books themselves not to date farther back than 420 A.D.

I have, however, only just grazed the surface of this question of historical parallels. More I could not do in this paper, though it demands and would repay ample investigation.

13. I must now refer to the other class of parallels between Buddhism and Christianity,—the moral precepts of Buddha, and the moral precepts of the Christian faith. And here I feel that there is so much to be discussed, so much that is of the deepest interest, not only to the Christian, but to the historical inquirer, that I feel fairly at sea, when I have to compress what I have to say into a few sentences. I will take, therefore, only one leading thought for our consideration at present; and I take it, because it seems to me to be the only true guide to the study of what is called the science of Religion,—I mean the acknowledgment of a primitive revelation, both of morality and ritual worship, before the early families of mankind were dispersed.

14. It appears to be the fashion with writers on the science of Religion to regard man as having in his early history a mind, which was as to Religion a *tabula rasa*, on which any theory may be written that appears good to the writer. This is a question of surpassing interest at this moment, and has been brought into great prominence by Mr. Herbert Spencer's article in last month's number of the *Nineteenth Century*. It is quite relevant to the point of my argument to say a few words on this subject. The "Ghost Theory" endorsed by Mr. Spencer; the supposed indications of duality of existence, first suggested by dreams, leading up to a suspicion of external spiritual powers; the theory that such suspicions inspired our remote ancestors through their sub-

jective reasonings with some true intuitions as to the great objective reality of the "Infinite and Eternal Energy from which all things proceed"; the supposition that under these growing intuitions of the unseen men invented bloody and unbloody sacrifices and offerings, and a highly-complicated ritual, always connected in the earliest ages of which we know anything with duties to God and men; the theory that by a survival of the fittest of these intuitional religious rites and opinions men worked out the rites and the moral precepts of the Old Testament and the Christianity of the New, which last is, after all, according to Mr. Herbert Spencer, but a stepping-stone to something better;—all these theories are so difficult of verification, that one feels, even when essaying to follow the footsteps of Mr. Spencer in his most cleverly conceived arguments, how every step needs testing, and how uncertain many seem when tested. It is almost like walking over an Irish bog, where you carefully pick your steps from one verdant tuft to another with some amount of solicitude for your personal safety. The very first step of Mr. Spencer, in his *Religion, a Retrospect and a Prospect*, is questioned at once by a deaf-mute in Yorkshire, who refuses to be placed in the same category with "brutes," "children," and "lowest savages." Even the alleged intuitions of what are called savages are very difficult of verification. Mr. Spencer's very first sentence does not embrace the whole truth,—“The religious consciousness” is not “concerned only with the unseen,” but is also concerned with historical facts, such, for instance, as the miracles of Christ and the Mosaic Dispensation.

But I am not here to discuss this celebrated *Nineteenth Century* article, and only wish at present to observe how much simpler is the theory, if you like so to call it (though we hold it to be no theory), and how much more capable of verification at every step, and on that ground alone more scientific,—the theory of revelation from an infinite and personal energy, whom we call God. Given a personal God of infinite power, justice, and benevolence, we not only may, but must, argue *à priori* to the possibility, at least, if not the probability, of some revelation of His will to man. Given the historical truth of the Mosaic Dispensation, we have such a revelation. Given certain other historical facts, upon some of which I shall presently touch, we have reason to believe that man received a revelation prior to that of the Mosaic Dispensation. If I may quote words of my own, written elsewhere, with regard especially to Hinduism viewed in con-

nexion with growth in religion, "A development there is; but is it a development upward, or a development downward (downward, I mean, as in the case of saint-worship and other deformities that have clustered round the design of the founder of Christianity)? It is not easy to see with Mr. Herbert Spencer by what law or necessity of man's nature he should, after having evolved his gods from the "stuff that dreams are made of," proceed to evolve the necessity for propitiating them with bloody sacrifices. Men do not propitiate each other, and I suppose, in no age ever even dreamed of doing so, with bloody offerings. Nor is it by any means easy to see with Mr. Moncure Conway how the struggle between the principles of "retaliation and forgiveness" in the human bosom could, according to his theory, beget the germ of the sacrificial system, and especially how it should have pointed out food animals and food plants as the only suitable offerings.

"The only natural law which the science of religion has forced upon my own conviction is, that man has exhibited a constant tendency to drop the spiritual out of religion, while he may retain the material. Deterioration from the original truth seems to have been the natural order of growth in religions. It was certainly so in the religion of Israel. It has been certainly so in the history of Christianity. The truth of the Founder has often been kept up only by an effort, and how often by a painful effort. I believe the same may be shown to be true of every known religion. But this does not mean utter destruction. Vestiges of the original will most probably remain, more or less extensive, more or less perfect. It is the spiritual that suffers; we more easily preserve the skeleton than the life that once animated it. And as regards concretions, just as, when we ascend the stream towards the fountain in Christianity, we drop sect after sect, heresy after heresy, so in Hinduism, when we march back to the Vedic era, we leave one by one the gods many and the lords many, till we reach a clearer atmosphere. When there, with a less incumbered realisation of deity, what do we find? We find what I take to be the most remarkable and noteworthy of all the results of our research, I mean, what is evidently the backbone of the religion, that has, moreover, existed to this day through all changes,—the Priest, the Altar, the Sacrifice, the Oblation, the Propitiation, the Sacred Feast, all connected with the acknowledgment of deity. Here, then, we must have reached the ideal, or a portion of the ideal, of original Hinduism. However imperfect and skeleton-like these

characteristics may seem, standing as they do now without a distinct and organised embodiment, without any defined reasons for their existence, yet they must point to the intrinsic nature of early Hinduism. Here we have certain marks of Hinduism, which are '*ubique, semper, ab omnibus.*' What is the true meaning of this? Are these well-defined characteristics only indications of a process of upward growth? which is the theory of Mr. Herbert Spencer; or are they vestiges of a former perfect organism already in a state of decay? If we see a building in an incomplete state, walls without a roof, portions of walls only indicative of what the walls ought to be; here a perfect window, there only a window-sill; here a door, there only a door-step; here a pillar, there only the base of a pillar, we must come to one of two inevitable conclusions,—either that the building is a ruin of a once perfect building, or that it is only in the state of construction. And so, if we were to see in different places portions of what appears to us to be evidently the same ideal, some more, some less complete, some conveying only suggestions of the ideal, some more nearly approaching it, we should conclude that all were either fragments of, or approximations towards, that one ideal. Now, comparative religion presents several so-called religions to us, having certain points of mutual contact, between some a few points, between others many, all pointing to one ideal. Does this mean that these several religions are each in a state of growth towards the ideal, or that the ideal now exists in many of them only in a state of ruin? This is, no doubt, the one vital question that, of all others, comparative religion has to solve. All the ancient religions had, to a greater or less degree, characteristics similar to those of the Hinduism of the Vedas,—priests, altars, sacrifices, propitiations. Can we refer all these to one ideal? We can. The ideal is seen in its completeness in the Mosaic Dispensation, which is doubtless a Divine reconstruction of a primeval revelation as to man's religious beliefs and duties. There these same parts have their proper places, functions, and appointments in a perfect system of divine worship. That dispensation is the restoration of an ideal upon which we could reconstruct the edifice of which these chief characteristics of Vedic Brahmanism, and other ancient religions, would be fitting parts. And certainly, when we find the *disjecta membra* of early religions, exactly such as we should expect to find in the ruins of such an ideal, we come very near to the proof that such an ideal did exist."

15. But to return to Buddhism. Even Dr. Oldenberg, whose

recent work on Buddha is the most scholarly and reliable that I have seen, when tracing the progress in Indian thought which prepared the way for Buddhism, depicts the Vedic religion as having been wholly philosophised, so to speak, out of the inner consciousness of the Hindu. Thus he finds disclosed in the "Brâhmana of the hundred paths,"* what the Vedic texts themselves, he says, fail to yield, "the genesis of the conception of the unity in all that is, from the first dim indications of this thought, until it attains a steady brilliancy." "What the Indian thinker has conceived in the particular 'ego,'—the *Ātman* [that is, himself],—extends in his idea, by inevitable necessity, to the universe at large beyond him: the *Ātman*, the central substance of the 'ego,' steps forth on the domain of the bare human individual, and is taken as the creating power that moves the great body of the universe."† The man has thought out this idea so perfectly, that at last the "*Ātman* is called the *Brahma*." "*Ātman* and *Brahma* converge in the one, in which the yearning spirit, wearied of wandering in a world of gloomy, formless phantasms, finds its rest." So "the *Brâhmana* of the hundred paths" says, "That which was, that which will be, I praise, the great *Brahma*, the One, the Imperishable. To the *Ātman* let man bring his adoration, with this *Ātman* shall I, when I separate from this state, unite myself. Whosoever thinketh thus truly, there is no doubt." Then Dr. Oldenberg adds, "A new centre of thought is found, a new God, greater than all old gods, for he is the all; nearer to the quest of man's heart, for he is the particular 'ego.' The name of the thinker," Dr. Oldenberg goes on to say, "who was the first to propound this new philosophy, we know not."

16. In the margin of my copy of Dr. Oldenberg's book I wrote on reading this passage, "Or is this 'new God' the oldest of all?" I should venture to reverse the reasoning of Dr. Oldenberg here, and to find in the "*Brâhmana* of the hundred paths," and in the hymns of the *Rig Veda*, evidences of a religious thought, not constructive but destructive, not nearing the light, but receding from it, though still catching its last rays. Do we not rather see in the supreme *Ātman*,

* Oldenberg, *Buddha*, p. 23, *et seq.*

† Though the original meaning of *Ātman* is obscure, yet the more probable derivation is that which connects it with *an*, "to breathe," or *at*, "to go," than that which connects it with *aham*, the first personal pronoun. *Spiritus*, not *ego*, seems to be the underlying idea of *Ātman*, even when used for "the self"; the original meaning seems to be still shadowed forth in the Greek *ἀρούς*.

the supreme Brahma, the supreme Prajāpati, the one Spirit or Individuality, the one Almighty, the one Lord, of Vedic Brahmanism, vestiges of a once purer faith and a truer worship? Certainly in reference to the theory of the evolutionists, there seems to be a higher differentiation in these teachings of the Vedic era, the one Infinite, Self-existent, Spirit, Creator, the Source and End of being, than in the one mere "Energy" of the present race of agnostics; just as the tree with stem, branches, leaves, fruit, is more highly differentiated than a mere pole. And none of these ideas of the deity can be charged with anthropomorphism. The theory of differentiation in the science of religion has, therefore, a somewhat difficult matter to explain, when investigating the religious beliefs of the Brahmans of ages long past. Moreover, Dr. Oldenberg has told us that, long before this discovery of the one Ātman, the sacrificial fire was everywhere present, as the great symbol of Aryan prosperity. They had sacrificed even to those "old gods," whom they had forgotten. So sovereign was the sacrificial system, that "the king,* whom the Brahmans anoint to rule over their people, is not their king; the priest, at the coronation, when he presents the ruler to his subjects, says, 'This is your king, O people; the king over us Brahmans is Soma.'"

Whence, then, originated this idea of sacrifice? And what is that Soma libation again, but a vestige of the far past, the Hindu remembrance of the sacrificial cup, which their forefathers in the North had filled with the juice of the grape? Did man invent the priest, the altar, the sacrifice, the libation? It is impossible. We can only read the truth of this in the light of the Mosaic dispensation.†

17. Allow me to dwell, in a few hurried words, on the evidences of a primeval revelation from God. First, as to ritual worship. I will take only one example. The Hindu temple is on the same plan as the tabernacle in the Wilderness and Solomon's Temple at Jerusalem, the fane consisting of two rooms, the inner one for the idol, the outer one for the priests' offices, and usually standing in a court of greater or less dimensions. Whence can the Hindus have derived this plan? It is scarcely possible that they can have borrowed this particular design from the Jews. I had long ago suspected that this also is a vestige of a ritual worship antecedent

* Oldenberg, *Buddha*, p. 14.

† See this subject further discussed by me in *Pulpit Commentary on Leviticus, Introduction on Sacrifice*.

to the ritual of Moses; and this is confirmed by the discovery of the Sippara Temple by Mr. Rassam, which is also according to the same pattern. Why, then, was this pattern given by God to Moses on Mount Sinai? We can only conclude, I think, that Jehovah was then re-instituting a ritual that had become corrupted among the nations. And, if we carefully examine the Mosaic Dispensation, we shall find many circumstances to corroborate this. Many features of that dispensation already existed in the world; the priest was nothing new; the altar, the sacrifice, the sacrificial feast were nothing new; and, after Mr. Rassam's discovery of the Temple at Sippara, we can say with confidence the form of the tabernacle was nothing new. I have been led, therefore, to infer that the Mosaic Dispensation was a "Reformation," and, if so, there must have been a ritual and a worship that existed in earlier ages, appointed by the same Jehovah; and we can thus understand the priestly and sacrificial vestiges of a once divinely-appointed worship that are to be found, or were once to be found, not only in India, but, to a greater or less extent, all over the world.

18. We come, then, if I am right, to regard the Brahmanism of the Vedic era, with its priests, altars, temples, and sacrifices, as retaining divinely-appointed rites, appointed long before Moses, which in their origin can only now be correctly read in the after-light of the "Reformation," called the Mosaic Dispensation; but which had already become for the most part dead fossils of a past history, the only life that remained being the remembrance of the fact of the existence of the one Infinite (*Aditi*),* the one Supreme (*Brahma*), the one Creator (*Prajapati*), the one Spirit (*Atma*), after whom some yearning spirits of men still sought, though they had lost his truth. Symbolism had crushed the life out of their religion. The sun, the moon, the heavens, the storms, the powers of nature, the sacrificial fire, the soma cup, first worshipped as manifestations of the divine presence, clouded the image of the personal Jehovah, and became at last only the veils of the Great Unknown.

19. Parallel with these recollections of a once divine worship must have been the recollections of a divinely-taught morality. If there were a divinely-appointed worship among the fathers of the nations, there must have been a divine code of duty also in reference both to God and man. There are vestiges here also. There are expressions in the *Rig Veda* in

* See *Rig Veda*, Max Müller, vol. i., p. 230, *et seq.*

reference to duty to God, which seem to belong to a different atmosphere from the self-seeking which is prevalent. As, for example, in one of the hymns to the Maruts, or storm-gods, translated by Professor Max Müller, there is an expression which is rendered, "Thou searchest out *sin*," *rina-yavā*, the word *rina*, meaning really a *debt*, something owing to the deity : so also there is in other hymns *āgas*, *guilt*,—"O Agni, whatever sin [guilt, abomination] we have committed, do thou pardon it,"—ideas that could hardly belong to a constructive religion that had only reached the stage of nature-worship. And so in other instances in the Veda, where sin is conceived, in the words of Max Müller, "as a bond or chain, from which the repentant sinner wishes to be freed." *

20. But we are most concerned with the morality of Buddha. There is one especially remarkable parallel between what I believe to be early Buddhist teaching and what we find in Holy Scripture as a divine command. I refer to the ten precepts, or obligations, which have, no doubt, always formed, and still form, a very prominent feature in Buddhistic teaching. The order, as well as the character of the first four obligations, is particularly observable as compared with the second table of the commandments in the Mosaic law. The latter, beginning with the sixth, are against (1) murder, (2) adultery, (3) stealing, (4) false witness. The Buddhist precepts are against (1) killing (animal life included), (2) stealing, (3) adultery and impurity, (4) lying. These are nearly identical, the second and third only changing places. The fact of the Buddhist precepts being ten in number is also in itself suggestive, though the remaining six are very different from the rest of the Mosaic precepts, and are protests against the licentiousness of Buddha's day.† This striking parallelism

* See *Rig Veda*, Max Müller, vol. i., p. 244, *et seq.*

† The ten precepts referred to are against,—

1. The taking of life.
2. Stealing.
3. Adultery and sexual intercourse.
4. Lying.
5. The use of intoxicating drinks.
6. The eating of food after mid-day.
7. The attendance upon dancing, singing, music, and masks.
8. The adorning of the body with flowers, and the use of perfumes and unguents.
9. The use of high or honourable seats or couches.
10. The receiving of gold or silver.

Every religious or moral movement is, in the first instance, either a protest against some error or abuse that has become intolerable, or an

between the four precepts quoted can hardly be accidental. It is, of course, not without the bounds of possibility that there may here be an echo of Moses, who lived 1,000 years before Buddha; but I should rather regard these first four precepts of the Buddhist code as being vestiges of a moral law divinely given in the still farther past, that had never been wholly lost to the human family, and had been re-nunciated to the "chosen people" on Mount Sinai. In this view of the case, Buddha inherited traditions of a morality that had once the stamp of the divine *imprimatur*. I am far from saying that there was only this inheritance at the root of Buddhist teaching; but that inheritance, I think, I may claim; and, if the claim be allowed, it will go far to remove any difficulty as to the origin of parallelisms between the moral teaching of Buddha and that of the Old Testament.

21. Dr. Oldenberg labours eloquently to show that the seeds of Buddhism already existed in Brahmanism. No doubt, to some extent they did; and, by the side of the preserved relics of a divine ritual, why should there not have existed preserved relics of a divine morality? There was always the natural yearning of man after something better. The desire after deliverance, as Dr. Oldenberg has observed, already expresses itself in Hinduism. Buddhism takes up the theme, and discourses of self-conquest, merit, and demerit. Is it not here grasping as weapons the vestiges of an erewhile divine morality to hurl at the effete ritualism that was deadening the world, and as a protest against the shams and immorality of the day? The very fact of the doctrine, that deliverance from suffering by righteousness (this is Buddhism) ends in peace in another state of existence, must imply, in the first birth of the idea, some power to acknowledge the righteousness and award the peace. The very idea of merit and demerit, as earning or deserving, as binding or freeing, must originally arise from the conviction of an arbitrator. Causality, as Dr. Oldenberg has noticed, is everywhere implied, though not defined, in Buddhism, as we read it to-day. But an abstract idea like this could never have given the convictions which must be at the root originally of merit and demerit

affirmation of some truth that has been denied or lost. The last six of these Buddhist precepts disclose the character of the age in which they were first promulgated, and against which they were a protest. It must have been an age calling loudly for reform; such an age as produced Juvenal's satires; an age of drunkenness, of gluttony, of frivolity, of effeminacy, of worldly pride, wealth, and avarice.

rewarded or punished. Indeed, the fact itself of a blind moral causality pervading Buddhism would seem to point to a something more real, which has dropped out of sight. Merit rewarded and demerit punished in a future state must be vestiges of a higher faith. When we add God and man's responsibility to God, the ruins are restored. Merit rewarded, demerit punished,—“thou shalt” and “thou shalt not,”—are natural parts of a divine law; as they stand in Buddhism, they are only fragments of the truth.

22. With regard, again, to the doctrine of *Nirvāna*, which Dr. Oldenberg's learned researches have further helped to remove out of the gloomy region of a blank annihilation, here also is something, if it did originally speak only of “deliverance” and “peace,” that looks very like a vestige of such teaching as inspired other wise men to write, “Wisdom's ways are ways of pleasantness, and all her paths are peace”; “The wicked is driven away in his wickedness, but the righteous hath hope in his death”; “Mark the perfect man, and behold the upright, for the end of that man is peace.”*

* When we go back to the very earliest texts that speak of *Nirvāna*, we find the subject already involved in metaphysics. This is a certain proof that either the original dogmatic teaching on the subject had been lost, or was being perverted. Every original teacher is dogmatic; if on any portion of his teaching he himself runs into metaphysical questions, that means that he has inherited some tradition which he does not understand. In Buddha's own mouth was *Nirvāna* a circumscribed dogma? or was it a metaphysical uncertainty? One would suppose that it must have been with him a well-defined dogma, or it is difficult to see how it could become the one goal of all his teaching. The doctrine that the original dogma of *Nirvāna* was annihilation of being was unorthodox, though already broached, when the *Samyutta Nikāya* was written. There the following passage occurs (more fully quoted by Dr. Oldenberg, p. 282): “Thus then, friend Yamaka, even here in this world the Perfect One is not to be apprehended by thee in truth. Hast thou, therefore, a right to speak, saying, ‘I understand the doctrine taught by the Exalted One to be this, that a monk, who is free from sin, when his body dissolves, is subject to annihilation, that he passes away, that he does not exist beyond death?’” Yamaka answers, “Such, indeed, was hitherto, friend Sāriputta, the heretical view which I ignorantly entertained. But now, when I hear the venerable Sāriputta expound the doctrine, the heretical view has lost its hold of me, and I have learned the doctrine.” Echoes of the original teaching exist in the Pāli texts, of which the following are quoted by Dr. Oldenberg, as examples, from the *Dhammapada* (p. 285):—

“Plunged into meditation, the immovable ones who valiantly struggle evermore, the wise, grasp the *Nirvāna*, the gain which no other gain surpasses.”

“Hunger is the most grievous illness; the *Sankhāra* are the most grievous sorrow; recognising this of a truth man attains the *Nirvāna*, the supreme happiness.”

23. My attempt, then, has been to show, that the moral precepts of Buddha may have grown from relics, or vestiges, of a primitive, divinely-given, law, that still existed by the side of vestiges of divinely appointed religious rites and ceremonies. Whether Gautama Buddha himself held more than these fragments of the past it would be premature yet to say; but that many of the Buddhistic teachings are stray mosaics that would accurately fit a divine morality, however they came to be so, I think no one will be inclined to deny.

24. That there may have been, however, much more in the teaching of the actual founder of Buddhism than appears to-day in the Buddhist Scriptures, is quite possible. This thought appears to have struck Dr. Oldenberg with peculiar force. He says, "When we try to resuscitate in our own way and in our own language the thoughts that are embedded in the Buddhist teaching, we can scarcely help forming the impression that it was not a mere idle statement which the sacred texts preserve to us, that the Perfect One knew much more which he thought inadvisable to say, than what he esteemed it profitable to his disciples to unfold. For that which is declared points for its explanation and completion to something else, which is passed over in silence—for it

"The wise, who cause no suffering to any being, who keep their body in check, they walk to the everlasting state; he who has reached that knows no sorrow."

"He who is permeated by goodness, the monk who adheres to Buddha's teaching, let him turn to the land of peace, where transientness finds an end, to happiness." ("Dhammapada," 23, 203, 225, 368).

Why meditation, endurance, wisdom, goodness, purity, love, if the goal of all were annihilation of being? Could such a prospect as the *summum bonum* have begotten the moral system of Buddha? There is no hint in the above extracts (and so in innumerable others) of annihilation of being. Deliverance from the transient is the ground thought.

The theory of Mr. Childers, though supported by so much learning, "that the word Nirvāna was used from the first to designate two different things, the state of blissful sanctification called Arhatship, and the annihilation of existence in which Arhatship ends" (Childers's Pāli Dictionary, p. 266), and that, therefore, it has always had the latter for its final meaning, will not stand, I think, the test of future criticism. Nay, Dr. Oldenberg seems already successfully to have set it aside.

If Gautama Buddha himself taught nothing more definite on the subject of Nirvāna than did his disciples, whose words we now read, then it is evident that he must have inherited his method of life without the fullness of its original sanction and source; and if so, he was not the founder, properly speaking, of a religion, but only the instrument for using an already existing morality against the imperfect state of society in which his lot was cast.

seemed not to serve for quietude, illumination, the Nirvāna—but of which we can scarcely help believing that it was really present in the minds of Buddha and those disciples to whom we owe the compilation of the dogmatic texts.” Whether the reason for this “silence,” or omission, is correctly surmised by Dr. Oldenberg, may be doubted; but the fact of something existing, though out of sight in the present records, is prominent in his mind.* This fact has also been elsewhere remarked on by myself. Had Gautama himself the more perfect knowledge? He lived in a remarkable age. What was the real force that roused at that time a keener sense of human sin and suffering, and a louder protest against moral evil all over the world? What was the real secret of the teaching of Pythagoras in Italy, of Zoroaster in Persia, of Lao-tse and Confucius in China, of Heraklitos in Ephesus, of the Orphic brotherhoods? What were those mysterious books that were brought by the Sibyl to Tarquinius Superbus? These questions remain unanswered. But that there was in that age, in which Gautama Buddha most probably lived, a powerful influence through the known world towards morality is evident. It is a curious question how far the influence, great and enduring as it was, of Daniel and his God-fearing companions at the court of the then kings of the earth, was an influence that may have been world-wide. Daniel was born, according to common chronologies, some time, perhaps twenty years, before 600 B.C., and therefore probably slightly preceded, or was, in advanced age, still living in the remarkable epoch to which Gautama seems to belong. One fact is certain, and that is, that whatever the lost Sibylline books were, one of the later ones contains passages so similar to some of Daniel’s writings that most critics allow that the Sibyl had access to Daniel’s prophecies. On the destruction of the earlier Sibylline Books by fire in the Temple of Jupiter B.C. 83, they were restored from public and private copies that existed in various towns of Italy, Greece, and Asia Minor. They were again similarly restored when burnt in the days of Nero, Julian, and Honorius. And the inference is, that the restorations most likely represented the true character, as well as in all probability some of the *ipsissima verba* of the originals. This question, however, of the Jews at Babylon having exerted a wider influence than is generally suspected,

* Oldenberg, *Buddha*, p. 208.

is a matter not now to be dogmatized upon, though it may well be kept in mind as something worth investigation.

25. But, whatever the motive power that first roused Gautama Buddha to preach against immorality and Brahman ritualism, whether it came from without or was the inheritance only of tradition, it must be allowed that Buddhism was, in its subsequent development, essentially Indian, moulded chiefly by the natural disposition and philosophical speculations of the race, and subject, to a very great degree, to the isolation beneath the great barrier of the Himalayas, which has made India what it is; except when sometimes the invader, perhaps religious as well as military and mercantile, has found his way, like Alexander, through the Hindu Kush, or by the sea-board, like Solomon's sailors, and subsequent Persian, Arabian, Egyptian, and Jewish adventurers.

THE CHAIRMAN (J. A. Fraser, M.D., Insp. Gen. of Hospitals).—I think there are very few persons present who can be without a deep sense of obligation to the author of this paper. The subject is one which has excited a great deal of attention and discussion both at home and abroad; we all know that by reason of certain works which have been written without, as I conceive, that thorough investigation of the subject which was demanded. We are, therefore, particularly glad to have a paper taking up this question so strongly and so learnedly. There is, I might almost say, a great tendency in the present day to advance and extol any religion except the Christian religion.

Captain FRANK PETRIE (Hon. Sec.).—Before the discussion commences, I have to mention the receipt of letters from Bishop Titcomb, Bishop Claughton, Sir William Muir, and Sir Richard Temple; expressing regret at not being able to be present; also a letter from Mr. Morley, the domestic chaplain to the Bishop of Madras, expressing his high appreciation of the value of the paper, which he hopes will reach the whole of India.

Mr. HORMUZD RASSAM.—This has been a topic in which I have always been very much interested, and I cannot but say that I agree with everything the learned author of the paper has said with regard to the most ancient belief in the God of Revelation—Jehovah. Every time I try to trace the Religions of the world and its languages, I cannot go further than the history of the Jews. We can now look back to certain antiquities upon which we can depend,—not MSS. which are only ridiculously mentioned as having existed for thousands of years, which no one can trust, but antiquities in stone and terra-cotta which have been discovered in Mesopotamia. For instance, in reference to my discovery at Balawat, namely, the bronze gates of Shalmaneser the Second. Assyrian scholars and I fix its date when Jonah visited Nineveh under the Divine

dictate. This monument shows that the Assyrians had the same sacrifices as the Jews. I have a photograph here of two sacrifices pictured on the gate, and you will find in it that the same animals are presented for sacrifice as are mentioned in Leviticus, chapter xvi., verse 3, wherein it is said, "Thus shall Aaron come into the holy place : with a young bullock for a sin offering, and a ram for a burnt offering." Well, here it is, you will see it quite plainly on the bronze gates. We find that in those days the Kings of Assyria acted as high priests, and the same King Shalmaneser we find took tribute from Jehu, king of Israel, as an act of homage. It appears that there was a difference between the Assyrian and the Babylonian religions ; it is now proved, after the recent discoveries, that the Babylonians who migrated from the Persian Gulf, had revolting and abominable sacrifices the same as there were in the land of Canaan,—that is to say, they sacrificed their children to idols. When we come to the Assyrians, we find that there was nothing of the kind in their worship, but they imitated the sacrifices of the Jewish rites. If we follow the history of the Jews, or even that of the Christian Church, we find that corruptions spread so much in them since the foundation of our faith, that we do not wonder that the same occurred, in a great measure, in countries like China and India, which used to be very uncivilised at one time. Without having the printing-press, they used merely to hear of certain good theological laws and imitate them ; or, at any rate, they conformed to them as well as they could. I have often heard it said by the enemies of Christianity that Moses borrowed all his precepts and laws from the old gentiles or heathens. We may just as well believe the same of the Koran. We all know that the Koran is a corruption of the Old and New Testaments, and I do not think there is a man or even a child who does not know that the Koran was written by Mohammed in the seventh century (A.D. 610). In my opinion the worship of Jehovah was originally pure and simple, and that it so remained until the Church of God, the ancient Jewish Church, began to worship the creature rather than the Creator. We also know that Christianity was preached in India and China hundreds of years ago, and that the Assyrian Christians—the so-called Nestorians—preached in those countries about the sixth century : but they themselves go still further, and say that according to their traditions their missionaries preached there in the fourth century, when, as it is stated, they had no less than eighty bishops in China, India, and Tartary. We can well fancy, therefore, by looking back to the sixth century, and considering that the Christians who went out to those countries were able to Christianise thousands of those people, it is to be presumed that they must have left a good impression behind them of, at any rate, a part of the religion they professed. Let us, for example, take the Taepings as an illustration : we all know the man who headed the Taepings at that time was a nominal Christian, and held extraordinary views, and if he had succeeded

we should have had a very curious Christianity in China. So it is with the Buddhists and other Gentile nations who might have been like some Christians and Jews who have corrupted the worship of the true God, and followed their own devices.

Rev. S. COLES, M.A.—I have to thank Mr. Collins for his very able paper on a subject in which I feel the greatest interest. I may say that I have been a missionary in Ceylon for about four-and-twenty years, and during that time I made the Buddhist system of religion a special study, and am of opinion that, in order to understand Buddhism aright, we must endeavour to find out what was the state of society at the time and in the country in which Buddha lived, and what were the influences brought to bear on Buddhism from without. We understand, from the Buddhist books, that in the time of Buddha, society in India was pantheistic, and that caste during that period had so developed, especially in relation to the pretensions of the Brahmins, as to become absolutely unbearable to the soldiers and the kings. Buddhism, then, was evidently formulated or founded in order to correct these things; and Buddha, like most human reformers, when he set to work with the object of reforming pantheism, did this so effectually that he left no room for a deity in the religion he set up; and, instead of a deity, we find action in the abstract. Buddha was what may be called the king of pessimists. He looked upon all existence, all pleasure, and all human happiness as evil and undesirable, himself giving up, as we are told, the pleasures of the court and retiring into the jungle, whence, after seven years of meditation, he came forth as a teacher. He then said he would give only his own experience; that what he had learned he had learned by himself, that he had not derived it from any one else. This is repeatedly expressed in the Buddhist writings, which affirm that he had never received any of his teachings from any other source. If, however, we look at those teachings as they are given in his moral code, I do not think we need go very far to find their origin; for the first five of his commands are those which, we may say, are the common heritage of humanity. All races of people look on murder, theft, impurity, and falsehood as sins and actions that should be avoided. The other commands given in Buddha's code are such as we should expect a pessimist to put forward. They relate to abstinence from all pleasure; and this last portion of his commands was to be observed principally by the monks and nuns. Laymen might observe them if they chose, but they were not bound to do so. Then, as I have said, we must look to the connexion India had with other countries. Mr. Rassam has spoken of what has been discovered in Assyria; and here we should bear in mind that the Ten Tribes were carried into Assyria long before—quite a century before—Buddha was born. I think the Behestun inscriptions prove that the teachings of the Bible, or of the Old Testament, were carried to that part of the world; and in the Buddhist scriptures we find so many interesting facts and remarks similar to those

given in the Old Testament, that we cannot but think that the people of India derived a certain portion of them from the West,—we may say, from the Children of Israel. We are also told in this paper—and I think it is a fact that we ought to bear in mind—that about the time Buddha lived Daniel lived also, and that Judah had then been carried into captivity in Babylon. Therefore it will be seen that there were many means and opportunities by which India, at that remote period, could have obtained a certain amount of knowledge with regard to the things contained in the Bible. But, in order to understand Buddhism, we must try to learn what was Buddha's teaching about man; about his constitution and his nature; and then we may arrive at some idea as to that which has been the cause of very much discussion, and which, probably, will continue to be so for a long time to come, namely, the great doctrine of Buddhism, called "Nirvāna." We cannot understand what is meant by this without knowing what Buddha taught about the nature of man. It is often asserted that Nirvāna only means deliverance from all evil—from all change. But those who have studied the matter are not in agreement on this point; at any rate, they who have studied it most do not generally agree in this assertion. Professor Childers has written a very able article on Nirvāna, and he shows, in a manner which I think is unanswerable, that there are two stages which have been looked on as Nirvāna; namely, one in which there is existence, and another in which there is no existence. He shows this most learnedly by using the two words which are found in the Buddhist scriptures, *saupādisesa Nibbāna* and *nirupādisesa Nibbāna*. The one is the Nirvāna, which has something in it, wherein the elements of being still exist, and then after death, there comes the *nirupādisesa Nibbāna*, in which there can be no existence after the powers of the body and mind are dissolved; which I think is plain from Buddha's own words. It is very difficult to understand all Buddha's teachings about the nature of man, because many of them are self-contradictory; but we may say that, when he speaks of man's higher nature, it is as of a procession, or, as I have been accustomed to call it, a sequence. There is nothing which you can point to and say, "This is really the higher part of man." He says, man and every creature in the universe consist of two parts—the *nāma* and the *rupa*. *Rupa* is the figure; *nāma* is the name that is given. This is explained, according to Buddhist ideas, as being similar to a chariot. You have all the different portions of the chariot, and then you have the name. Buddha then says, "So is man. Man has a body, man has thoughts; and these constitute what is the name, which you call, and think of as, man. But there is nothing which you can point to definitely as *ego* and say that that is permanent." This is illustrated, in another part of the Buddhist scriptures by a lamp. The lamp is lighted, and it goes on burning through the night. In the first watch there is a flame, and in the second there is a flame also. Is the flame in the second watch the same as in the first? The answer given is that it is not the same, neither is it another. And Buddha says, "So it is with man: he is not the same,

neither is he another: there is a procession, or a sequence, following from this body and the action of the thoughts." It is very difficult to understand this matter; but it has, to a great extent, been elucidated by Dr. Oldenburg, and I can heartily recommend his book to those who have not read it. It is the most able book that has been written on Buddhism; and although we may not agree with all he asserts, yet the impression every impartial reader will derive is this—that Christianity is immensely superior to Buddhism; the teachings of our holy religion are far above what Buddha gives. I think we ought to bear this in mind. It has often been asked, "Why is it that Buddhism has had, and still has, such a hold on the human mind, when this mystic Nirvāna is its final goal—its *summum bonum*?" I think the only reply we can give to this question is, that all Buddhists now in the world, and all Buddhists who have been in the world since Buddha's time, have no hope of reaching Nirvāna. They tell us it is impossible to arrive at that state, and all the Buddhists now are as virtuous as they can be, in order, as Buddha teaches, that they may have greater happiness in the next birth—it may be in this world, it may be in the upper world, or it may be in the lower world; but they believe that no one has any hope of reaching Nirvāna. This, I think, is the reason why Buddhism is still the religion of so many millions of the human race.

Principal G. W. LEITNER, M.A., Phd., LL.D. (Government College, Lahore).
 —The concluding words in Mr. Collins's lecture point to an inference to which, perhaps, full weight has not been given, and that is the inference to be derived from the invasion of India by Alexander, which is rightly described as having been "perhaps religious as well as military and mercantile." In my opinion it was even more than this; for, if we consult those authors who deal with Alexander's invasion, we shall find that his object, at any rate as it was believed to be by his contemporaries, was to spread Greek influence through Asia. It was with this object that he set out; and, although Arrian wrote a considerable time afterwards, he wrote, as we know, as accurately, perhaps, as any historian ever did; while even in Plutarch we find the same belief as that of Arrian crystallised in what he records, both as to the object and the success of Alexander, to which he not only refers incidentally, but makes special allusion to, in a speech which is entitled, "Regarding the Virtue and Good Fortune of Alexander," in having introduced, as it were, Europe into Asia, with particular reference to India. One of the passages is: Κατασπίρας Ἀσίαν Ἑλληνικοῖς τέλεσι. There were festivals, we are told, in which not only was the rivalry of physical force and skill displayed, but the rivalry also of the fine arts. We find that, when the soldiers rebelled on the off-side of the Punjab,—that is to say, the side furthest from Greece and nearest to Hindostan,—they did so on the ground, among others, that, whereas they were taken there for the purpose of making the Asiatics Greek, they themselves were being turned into Asiatics: and it is quite clear that the word Asia, as there used, must have referred to India in general and to the Punjab in particular, since it was there

that they spoke of their mission. But, beyond this, we have before us the actual sculptures produced at that period; and those who will take the trouble to visit the first and second rooms in the Indian section of the South Kensington Museum will be enabled to see how very strongly Greek influence did pervade those Buddhistic sculptures—for they certainly were Buddhistic—which were made on the Indian frontier. Therefore, I say, we cannot altogether eliminate Greek art from our calculations as to Buddhism, nor can we look upon the statements of the historians as referring to a section of the Hindoos rather than to the Buddhists, who, at the time of which we are speaking, ruled the Punjaub, the records being preserved in stone to this day. I may add, that this is further supported by the fact that actual Greek sculptures have been discovered. For instance, a Pallas Athene has been found side by side with undoubted Buddhistic carvings. This leads to the consideration that, after all, profound as are the scholars who have gone into the matter,—men like Mr. Davids and others,—and great as is the light they have thrown on it, this question of Buddhism offers so wide a field, that it would not suffer from any comparisons that might be brought from any other quarters to bear on what has been put forward and established by those who have examined the Buddhism of Ceylon, of Siam, and of Burmah. In what I may call the Greek Buddhism of the north of the Punjaub, we find the same influence which characterises the works of the Greeks. The superhuman is represented by the refined Human, and so also does the Buddhism of the period to which I allude in that part of India; already a point of difference from Brahminism, which always seeks to represent the supernatural by that which is most remote from the natural. For instance, the idea, say, of omniscience, which the Greeks would represent by a refined expression of the human face, the Brahmins represent by the use of many eyes, while for omnipotence they would employ many arms. And this leads us to the consideration generally of the representation of the supernatural, to which a mystic sense is attached in the Hindoo representations of the Deity that has not by any means been sufficiently explained; as, indeed, the question, who or what Brahma was, has by no means yet been taken out of the mist which surrounds it. Referring to my own travels, I may say that beyond the Buddhism, the accounts of which I read and admire in the writings of the scholars who have been named, there is the Buddhism of Thibet. We know what Huc and Gabet reported. They were two excellent men—Roman Catholic missionaries belonging to the order of the Jesuits—but, still, men of remarkable simplicity and goodness of mind, who record their impressions with the greatest clearness. These men were so struck with the similarity of the Buddhism they there saw with the Roman Catholic form of worship, that they thought the Evil Spirit had been at work there in order to bring their holy religion into contempt. I do not know whether this is throwing anything like a light, or a half-light, or even the faintest rush-light, on the point Mr. Collins has elucidated; but there is no doubt that, historically speaking, if we do not go into the remote and obscure past, the Christian missionaries and others who pene-

trated into those regions may, and, indeed, must, have left traces of their teaching in Thibet. Of course, if you go back to the Mosaic dispensation, or, as Mr. Collins has done, even further than that, the question resolves itself into what Mr. Collins has termed "the common heritage of mankind," with reference to the desire to get rid of sin and the importance of sacrificial offerings, and so forth ; but this rather leads us into the realms of the conjectural. Historically, no doubt, we can say there is sufficient proof that certain missionaries and numerous other Christians have been in Buddhistic Thibet, and have there shown their ritual and left some of it behind them. I remember very well being struck with the antiphonal singing in the monastery at Pugdai, in Zanskar, where Csoma de Körös, the illustrious and self-denying Hungarian traveller, had been successful in getting rid of the so-called Prayer-wheel worship and practice (although the terms worship and adoration are not quite suitable to the practice of the prayer-wheel), and where the Abbot had been so struck with the devotion of "the European disciple," who died before he could carry out his long-cherished intention of penetrating into Lhasa, that he offered to place his nephews as hostages in the hands of the British Government, and to take any European scholar anxious to go to Thibet to Lhasa, and to bring him back again,—an offer which, in my opinion, ought to have been accepted. I was there in 1866, but the Buddhists leave their traditions so vividly behind them that I should not be surprised to find, even after this lapse of time, that either the Abbot lived to carry out his promise, or that it would still be carried out by his successor, because he looked upon it as a sacred duty. I am not here to describe all the peculiarities of "the worship" adopted in that remarkable place ; but I may say that there is not the least doubt that in the red cardinal's cap, in the genuflexions, in the peculiar soldier-like salute, and in many other things (they differ much in their mode of adoration or admiration—which, perhaps, would be the more correct word), the Buddhists of Thibet are more like Europeans than any Asiatics I have seen elsewhere. In regard to their wonderful pantomimic representations of the struggles between virtue and vices of all kinds, the vices are shown as animals ; and doubtless these notions are derived not only from their surroundings, but also from other sources. With regard to annihilation,—there, again, we have to do with a complicated view of human nature, affected by ethnic and other considerations. One of the disciples at the monastery I have spoken of showed me, at a very early period of the year, over some of the snow-covered passes, and I entered into conversation with him. So long as he maintained his serenity of mind, "nothing was far" and "nothing was near." Even Sakiamuni (Buddha) was "nothing," but when I asked him, as he was carrying me across a mountain stream and had just been very nearly taken off his legs, whether that was nothing, he did not display his former readiness of answer. In the end he turned out to be very much like other human beings when he got rid of his difficulties, and, in spite of all his philosophy, he took out his flute and played a tune, and showed himself to be a very jolly

fellow. The complication in arriving at what the Buddhists may think about Nirvana is very great. In respect to the question of burial, in Thibet there are two modes, the terrestrial and the celestial; and in these they seem to show that they do not fear annihilation. The terrestrial burial is this: after the body has been burned the ashes are mixed with flour, on pieces of which, generally, an image of Buddha, and sometimes of the deceased person, is stamped, and these little effigies are distributed to the relatives, a proportion of them being placed in the mausoleum with the deceased, where they may afterwards be found. The celestial or superior mode is to have the body thrown to the dogs and devoured by them, so that the utmost contempt may be shown for this body; and I can quite conceive, without entering into the extremely difficult questions raised here, that a human being may be brought up to consider death almost in the light of a pleasure, but, at any rate, as a welcome deliverance from the troubles of life. Of course, it all very much depends on the way in which death is looked at, in contrast to the notion entertained by a restless, ambitious race, such as those of Europe, who are not satisfied with a general immortality, — a sort of mixture of one essence in the general essence, — but require an individual immortality. I can quite conceive that races brought up to look on death as an emancipation from evil may, perhaps, not fear death. This consideration, of course, does not enter into that most important and vital question which relates to what was intended by Buddha, or to what Buddhism really ought to be. I have merely to deal with the fact that here we have a race, who, as far as I have seen, are certainly inferior to none in actual honesty and goodness of heart, not fearing death to anything like the same extent as the far braver races who willingly confront death in Europe, and who, though they will thus meet and confront their fate, have, I think, a greater horror of death than the race of which I am speaking. I do not know whether I ought to say a few words about the pessimism of Buddha, as I ought, perhaps, to leave that to Mr. Davids and others. I myself consider that, perhaps, Buddha was not altogether such a pessimist as he is said to have been, nor that Schopenhauer is his apostle in Germany. With regard to Krishna, when I see the learning shown in these pages, it astonishes me that Mr. Collins should consider that the story of the god Krishna is a manifest parody of the history of Christ. Was not Krishna a living and popular prince, who has been elevated to the rank of a deity? And how far can we imagine that such erratic conduct as characterised Krishna in his dealings with the Gopis or milkmaids, can in any way be a parody of the history of Christ? We have to deal with a living prince of philanthropic tendencies, although these seem to have included one sex, rather than humanity generally, — one whose exploits are known and who afterwards was raised to the rank of a deity. Why should we consider that, whatever may have been the subsequent embellishments of what was attributed to the god Krishna, they were a manifest parody of the history of Christ? This deity has surely an historical basis. When, however,

Mr. Collins speaks of the influence of the Christians in India, I think there can be no doubt that he is right. In the *Dabistan*, a work that has not been sufficiently read, we find an account by an unknown author, so judicial in its character that it is impossible to say to what religion the writer belonged. It is suggested that he was a Shiah Mussulman. Nevertheless, we find plenty there about Christians. With regard to the inscriptions that have been spoken of, we find that there is one preserved in the Delhi Museum. There are other inscriptions elsewhere in Armenian, and plenty more in Pahlawi. So much about the influence of Christianity, if you move only within a limited range; but the moment you go to the region of conjecture, and consider how far Indian civilisation affected Greece, you have nothing but philology to depend on. History there ceases; whereas, when you say the Greeks have influenced India, history helps you on, for we know they have been there. Again when you say that Buddhism was prior to Christianity in its teaching, if you examine the matter and go to the facts, it is very difficult to show how far the disciples of Buddha went; although we know he sent them beyond the Himalayas. How far they may have affected the Alexandrine teaching is a matter which at once removes us from the sphere of the actual. But when you inquire, Did Christian missionaries go to Thibet? you find, as I have shown, that they did, and that they left a ritual behind them. It all depends on where you draw the line. Therefore, without presuming to decide a question on which so many learned doctors apparently disagree, I will say a few words about Buddha. Buddha, as you may know, is a word which is the same as *But*, the common Muhammedan word for idol; and typical idolatry, among the Arabs, was represented, not so much by idols as by putting forward the doctrine of the admiration of Buddha, whose image was represented more numerously, although only a revered teacher, than that of, perhaps, any other real idol in Asia. Consequently you find that you have, in the beginning of the eighth century, in the distant tribes of Arabia, the word *But*, as explaining what was idolatry to them. As to *Brahma*, I do not know whether it would be right for me to throw out the conjecture, that *Brahma* was never a really personal god. It was subsequently to the "abstraction" of *Brahma* that the single temple in India to that deity was built; such a god as *Brahma* could not have existed,—for this reason, that *Brahma* is the great human mind and yearning, and that this is represented primarily by the Brahmins as a corporate body, and then by a personification of that body. Italian has, by a curious coincidence, preserved the spirit of the word in "*bramo*,"—"I desire." What was meant by the word "*Brahma*"? In Brahminism you see asceticism, and are told that by study and the practice of a pure life, and by an acknowledgment of the evidences of sin, and by sacrifices—to which a remarkable reference has been made,—you can gradually rise to a position far above even that of the gods, because, by struggling with your own passions, and by having succeeded in subduing them, you have accomplished what you have had a yearning after all your life. In the personification of the

highest humanity, considering all the struggles you have had, you are made higher than the angels. Therefore, in my humble opinion, here you have one side of the question, which, perhaps, explains how it is that Brahma is not worshipped, and cannot be worshipped, inasmuch as he is only an abstraction of the yearning of the highest intelligence of the Hindoo race, as represented primarily by the Brahmins. We are now removed from the time when another view used to be taken of Brahma. I remember that when I was a boy I read a comparative mythology in which it was pointed out that Brahma was Abraham, and that this view was corroborated by the fact of Saraswati being his wife, this being held as pointing clearly to Abraham's wife Sarah, though I do not think that such a view would be accepted now. I do not wish to detain you much longer, but I will just give you an instance of how things become corrupted. There is a society in India which seeks to reconcile the Vedas with Science, so when the Vedas tell us: "Here the priest pours ghee into the fire," the passage is explained as denoting the constituents of air as scientifically laid down. So that, whether you call it a development of something higher or a retrogression, anyhow we find old sayings made use of to express modern ideas. I fear I have detained you a great deal too long, otherwise I would have called attention to another point. We are told in the paper that "if we see a building in an incomplete state, walls without a roof, portions of walls only indicative of what the walls ought to be—here a perfect window, there only a window-sill; here a door, there only a door-step; here a pillar, there only the base of a pillar,—we must come to one of two inevitable conclusions, either that the building is a ruin of a once perfect building, or that it is only in the state of construction." I remember, when I saw certain walls standing at a place where I had been making an unsuccessful exploration, I asked myself how it was that nothing had been found there, either by myself or by previous explorers, and yet there were walls still remaining and showing that we were confronted by the ruins of an ancient city. It was a mere accident which made me acquainted with the fact that we had been all the time *on the roofs* of the buildings, and that, just as people very rarely put their images on the roofs of their houses, and just as they are not to be found in the streets, but in the buildings themselves, there might be this explanation of the mystery, namely, that the earth had come in and filled up the intervals by landslips, as it evidently did, and had left the roofs standing. Might not this be also an illustration, though not, perhaps, a very happy one, of what has occurred in the case we are considering? May it not be that here we have the fabric of a worship which may be traced back, as Mr. Collins has very rightly said, to some higher inspiration, and that something analogous to the landslips I have spoken of have occurred in this unfortunate India and the surrounding countries, driving out what was there before and filling up the vacant space, the result being that it only requires the labours of men like Mr. Collins and others now in this room, to clear out the earth that has fallen, and restore

the buildings to a condition that will at least give us some idea of their origin, construction, and intention ?

Professor T. W. RHYS DAVIDS.—I have listened with great pleasure to Mr. Collins's instructive paper. I am very glad to see that now Mr. Collins, whom I recollect when I was in Ceylon, is here in England, he has not forgotten what he learned when he was in that part of the world, but is able to bring questions such as this before the Victoria Institute. The question he has dwelt with to-night is, however, one of such magnitude, that it is absolutely impossible to do full justice to it within the short limits of such a paper as he could place before you, or in any speech that could be made upon it. I can only advert to the remarks I have made in my Hibbert lectures on this subject. As Mr. Collins has pointed out, there are two great elements of resemblance between Buddhism and Christianity. The first is the resemblance of the legends of Buddha, in a great many instances, to the stories in the apocryphal gospels, as well as, in some cases, to the gospels themselves. The second is the question of morality. I am sorry Mr. Collins has taken up Bunsen's work on the first point, because that is—and there I entirely agree with him—an entirely uncritical production. I think it would have been far better if he had taken Professor Seydel's work. In it he draws attention in an elaborate way to all these resemblances, and arrives at the conclusion that the Christians have borrowed from the Buddhists. I, for one, confess that I do not think so. The evidence of the bringing over of the Buddhist beliefs to Europe at the time the gospels were put into their present form is exceedingly slight, and I do not think it ever really took place. On this, as on the second point, I am more inclined to adopt the opinion put forward by Mr. Coles, that such resemblances as are to be discovered are due to the moral notions found in both religions being the common heritage of mankind. When we find that the Buddhists have five commandments which greatly resemble the commandments of the Old Testament, I do not think it is at all necessary to suppose that either of them is borrowed from the other. I think it quite possible to suppose that the two ideas are due to entirely independent origins. I have noted one or two things on which I differ from Mr. Collins. One principal point is with regard to the Vedas. I was astonished to find Mr. Collins saying that, the further you go back in history, the clearer the atmosphere becomes, until you get into a realm of literature in which you find yourself grappling with the ritual and sacrifices of the priests in the temples. The fact is that in the Vedas there is no mention of temples or of priests, and I do not think there is any mention of ritual. In the books written after the Vedas there is, no doubt, considerable mention of ritual ; but this is not to be found in the Vedas themselves. The priesthood was in an entirely unformed condition, and the worship practised was that of an immense number of gods. With regard to the monotheism or pantheism summed up in the worship of Brahma, the idea was long behind the rest. It is not found at all in

the ancient Vedas. With regard to "Tathāgata," the real meaning is "Thus Come." It is the name of Buddha, and simply means "the one who came, like other prophets before him." Like every great prophet who has appeared in the world, he put forth that he came to fulfil, not to destroy, the law, and he was the successor of previous Buddhas, and therefore called himself Tathāgata. I think Dr. Oldenberg is rather a dangerous authority for Mr. Collins to quote. I know him very well, and my impression is that he would not quite support the views that have been attributed to him. With regard to Nirvāna, that is a very simple matter. If every one would recollect the example Mr. Coles has given with regard to the chariot and the lamp, the matter would become more clear. We cannot call it rightly actual annihilation, because there is nothing to annihilate. What Mr. Coles has said is accurate, and Nirvāna means a state of perfection to be reached here on earth. The Buddhists did not believe in the existence of a soul, and to suppose that Nirvāna means the annihilation of the soul, is, therefore, a mistake. I have only to add, that what Dr. Leitner has said about Greek and other European influence in India in later Buddhism, touches on a most interesting point. No one can look at the Buddhist sculptures without seeing that they are sculptures in which Greek influence is clearly and distinctly shown, although they are, undoubtedly, Buddhistic works; and we all know that Tibetan Buddhism owes a good deal to Christianity. Mr. Tylor, of Oxford, has shown a number of different rosaries from different parts of the world, Mahommedan and Buddhistic. These are curious, as showing how exactly similar all the rosaries are. He holds that those rosaries were, probably, Buddhistic in their origin, and were, perhaps, brought over and adopted by the Mahommedans, and also by the Christians in Europe.* In the same way, no doubt, various other beliefs and customs have been carried over from Europe to the East.

THE AUTHOR.—There have been so many subjects touched upon by the different speakers, that it would be almost impossible, at this late hour, to reply to the greater part of what has been said. I will, however, just refer to what Mr. Rhys Davids has advanced. It seems that he and I must regard the Vedas from different points of view. It is quite true that we read nothing about temples in the Rig Veda. But there was probably no reason for naming them. The application of the word "ritual" may be misunderstood. The Vedic hymns do not, indeed, prescribe ritual; that would be foreign to their character; but they disclose rites which imply ritual; there is the altar, the sacrifice, the sacrificer or priest, the sacred fire, the oblation, especially the soma-libation; and all connected with the ideas of prayer, propitiation, and sometimes even the forgiveness of sins. And the

* Their existence in the East is first mentioned A.D. 366. The R.C. Rosary of 55 beads was introduced by Peter the Hermit, A.D. 1090; the larger Rosary was invented by Dominic de Guzman, A.D. 1202.—ED.

Brāhmanas comment on the ritual implied. We find in the Vedic era, a worship of deity under the powers of nature. We are in a different atmosphere from that which surrounds Krishna, Rāma, Ganapathi, Hanumān, and even Vishnu, and the other more popular gods and goddesses. We are, most perceptibly, nearer to the early principles of Tsabaism, which was, doubtless, the first departure from the worship of the one true God. With reference to what Mr. Coles has said, I am quite sure he has read a good deal more about Buddhism than I have; and he is, no doubt, a much better authority than I. But it would appear that Mr. Coles describes what is the Buddhism of to-day. He would take, as I gather from his words, the whole of the Buddhist scriptures and tell you what Buddhism now is. We, however, know that. But the question really is, what was the Buddhism of Gautama Buddha himself? It should be remembered that no Buddhist book was written within four hundred years of Buddha's death. That, at least, is the tradition of the Singhalese people themselves, and it is probably correct. What we want to know is, what Buddha himself really taught. That is the point, and there lies the difficulty. I only desired to elucidate one point to-night, and that is, that whether we take Hinduism, Buddhism, or any other religion, they did not spring originally from men's thoughts, but from Revelation; and the differences between them are some slight indication of the extent to which that primitive revelation has been overlaid by man's invention.

The meeting was then adjourned.

KRISHNA.

The author of the Paper has since forwarded the following supplementary remarks:—

With regard to Krishna, it may be quite true, as Mr. Rhys Davids says, that the legends may have gathered round some real hero or prince, as in the case of Buddha himself. But the question is as to the origin of the legends. The comparatively modern character of the books in which Krishna is raised to divine honours will be conceded, if not insisted upon, by all Sanscrit scholars. The Bhagavat-Gīta, with the Purānas, is placed by Professor Max Müller in what he calls the "modern and artificial period," or, as he also calls it, the "Renaissance" period, commencing not earlier than the third century of the Christian Era. The Bhāgavata-Purāna, in the tenth book of which is the full story of Krishna, is held by many scholars to have been written as late as the tenth century A.D. In the Bhagavat-Gīta, of which the opinion of Mr. Monier Williams is, that it is "really a comparatively modern philosophical poem interpolated in the Bhishma-parva," the great peculiarity is the later Hindu doctrine of *bhakti*, faith, or devotion. It is the same in the story of Krishna in the Bhāgavata Purāna. In the latter it is declared that to *hear the story of Krishna and to believe* is all that is required for salvation (*mōksha*). Faith is the theme throughout. It is also said that, sin having come into the world, the Deity resolved to become in-

carnate in the person of Krishna. The very names are peculiar : the tribe to which Krishna belongs is that of Yadu; it is true that Yadu is mentioned in the Rig Veda (i. 174-9) as the brother of Turvasu ; but it is impossible not to observe the similarity between Yadu and *Yahuda*. Krishna's father's name is Vasudeva : *Vasu* in the Vedas means, good, or rich ; it was also the appellation of certain semi-divine beings : *deva*, of course, means merely divine. The real mother of Krishna was Devaki, the meaning of which is divine woman. There may be nothing in these singular approximations, perhaps, if they are taken alone ; but there are so many suggestions of the probable influence of the gospel story in the Purāna and the Mahā-Bhārata, that they become worth considering. There is the story of the slaying of the infants by the tyrant king Kansa at the birth of Krishna, a king whose name may mean "lust," if it be derived as some suppose from *Kam*, and whom it was a part of Krishna's mission to destroy. On Krishna's birth he was put into a basket for winnowing rice—suggestive of the manger. To escape Kansa he is taken by his father to Gōkula, which means, literally, cow-house ; but many have connected it with the Egyptian word "Goshen." As Krishna grows up he is tempted, and at last overthrows a great serpent, upon whose head he treads "assuming the weight of three worlds." This serpent, which generally figures in the Hindu representations of Krishna, is thus introduced at the commencement of the story : Parikshit was the king of the men of the present age, and had become liable to a curse by throwing the skin of a snake upon a holy sage, and was therefore sentenced to die in seven days by the bite of an infernal serpent. To this Parikshit (the word means tried, proved, tested) the story of Krishna is related in the Bhāgavata-Purāna. These certainly look very like parodies of the histories in the Bible of the fall of man, and the triumph of Jesus. But it would be impossible here to quote a tithe of the incidents in the history of Krishna suggestive of the Christian story. His saying that "They who love him shall never see death" ; the conquest of Indra, the god of the air ; the sheltering the men of Braj from Indra's deluge of rain by the mountain which he holds up on the tip of his finger, which mountain his followers are to worship ; his being met as he enters Mathurā by a deformed woman, who anoints him with sandal-wood oil, and his making her straight and beautiful ; his raising a widow's son to life, as related in the Mahā-Bhārata ; his once washing the feet of those present at a great sacrifice ; his final descent into Hades, and rescuing certain persons from the dead :—these are certainly sufficiently striking. But the most notable part of all is the character of the Bhagavat-gita, a poem which so struck Warren Hastings that in a letter written, now nearly a century ago, in October, 1784, he spoke of it as a "single exception, among all the known religions of mankind, of a theology accurately corresponding with that of the Christian dispensation." It is not quite this : but the doctrines of the unity of God, and of redemption through an incarnation, are its themes. Of course, Krishna is the incarnate Redeemer, and thus he speaks :— "Supreme happiness attendeth the man whose mind is at peace, whose carnal affection and passions are subdued, who is thus *in God* and free from sin." "He my servant is dear to me who is free from enmity, the friend of all, merciful . . . and whose mind and understanding are *fixed on me alone*," and so in numberless other passages. Stranger than all, perhaps, is the conclusion of the story, which is that Dwarka, "the city of many gates," which Krishna built on the western point of Guzerat, and where he and his followers repaired, was overwhelmed in the sea, so that not only the city, but the whole of the *family* and *descendants* of Krishna perished for ever from off the face of the earth. There may be here, no doubt, a recol-

lection of volcanic disturbances, which have even in the present century affected the neighbourhood of the Gulf of Katch : a similar overwhelming of Gokarna on the Malabar coast, and its restoration by Parasu-Rāma, is related in a copy of the Brahmānda-Purāna which I obtained in South India many years ago : and probably volcanic action was known in past times on the Western coast. But why should everything connected with the earthly history of Krishna end thus abruptly? It is noticeable that Krishna is the last recorded Avatāra of Vishnu ; one more Avatāra, the tenth, is to come under the name of Kalki, who will destroy the wicked, and liberate the world from its enemies, putting an end to the present *Kali-yuga*, or iron age of vice.

ORDINARY MEETING, MARCH 3, 1884.

THE RIGHT HONOURABLE A. S. AYRTON, IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following addition to the Library was announced :—

“Proceedings of the United States Geological and Geographical Survey.” (Ten volumes.) *From the Same.*

The following paper was then read by the Author :—

ON PESSIMISM, AND ITS MODERN CHAMPIONS.

By W. P. JAMES, Esq.

1. **T**HE present age is one of almost unbounded toleration. Especially is this the case in the world of literature. It is the fashion to speak with bated breath and formal courtesy of the most fantastic and extravagant creeds. Both sides of great questions are discussed in magazines, often with a total absence of earnestness, and with the cruel flippancy of the ready writer. The evil results of this idle spirit of curiosity are too patent to require notice. The mind accustomed to this stimulating process acquires the habit of playing with subjects which it is too indolent to take up seriously. Amongst our cultivated classes, it is possible that many readers are acquainted, in this superficial way, with Pessimism. They may have seen a favourable account of it, which was written, perhaps, in honest ignorance of its darker and more repulsive features. If such be the case, in common fairness, they cannot object to a further discussion of this extraordinary phase of nineteenth-century thought. Nor, unfortunately, does the question only concern the educated sections of our complex social fabric. It is astonishing, in these days, how speculative difficulties, which take their rise in the bleak and icy mountain-peaks of metaphysics, filter down to the lower strata of literature, and come to the surface again in the hateful productions of the atheistic propaganda. The object of this

paper will be fully attained if it should help one distracted soul to cling more firmly to the belief in the infinite goodness of the Maker of the world.

2. We shall now proceed to inquire (I.) What is Pessimism? (II.) What is the philosophical standpoint of its modern champions, Schopenhauer and von Hartmann, and, consequently, what authority may be claimed for their utterances? and (III.) What are some of the facts in the constitution of the world which have given rise to this literature of despair? As the various kinds of evil pass in review before us, it will be most convenient to state, at the same time, the reasonable answers that may be made, at any rate, to some of the difficulties which occur in this province of speculation.

(I.) *Definition of Pessimism.*—3. Pessimism, strictly speaking, is intended to be the exact antithesis to Optimism. Both words are now used with a certain amount of latitude. An Optimist ought to mean one who believes that the world (by which is meant, in this connexion, the universe, the sum total of created things) is the best of all possible worlds. It is now extended to include any one who holds that the good, on the whole, predominates over the evil. Similarly, a Pessimist should mean one who believes the world to be the worst of all possible worlds, but is also used of one who considers that the balance, on the whole, is on the side of evil. We need not trouble ourselves about merely literary outbursts of spleen or melancholy, but confine our attention to thinkers who bring forward more or less weighty arguments. As Pessimism is a reaction or protest against Optimism, it is as well to begin with a definite account of the latter doctrine. Optimism may be said to have been, until lately, the prevailing creed among philosophers of very different schools. Thinkers, for instance, so remote from each other as Aristotle, Augustine, and Spinoza, can all be classed as Optimists; but the first formal treatise on the subject is due to Leibnitz (born 1646 A.D., died 1716), and is entitled *Theodicæa; or, a Vindication of God with reference to the Problem of Evil*. In this work, the author asserts that the world (*i.e.*, universe), “as the work of God, must be the best of all possible worlds,” where by *possible* he means *practicable or feasible*. A better universe might be *conceived*, he would say, but could not be *realised*, under the conditions of actual existence.* His proof is an *à priori* one, drawn from

* Ueberweg's *History of Philosophy* (translated by Morris. Ed. 1880.), vol. ii. p. 112. The writer begs to acknowledge, once for all, his obligations to this admirable book, which combines impartiality and accuracy with the utmost brevity attainable in such matters.

the attributes of God; for, as God's wisdom is infinite, He must have *foreseen* the best possible world; as His goodness is infinite, He must have *wished* to bring it into existence; and, as His power is infinite, He must have *been able* to do so. In dealing with the existence of evils, Leibnitz divides them into three classes, which he calls metaphysical, physical, and moral. Metaphysical evils arise from the limitations which are the conditions of all finite existence, such as ignorance, weakness, &c.; these he looks upon as inevitable. Physical evils he regards as useful, either as merciful punishments for sin, or as instruments of moral training and discipline. Moral evils he considers as inseparable from the freedom of a self-determining will. To appreciate the range of Leibnitz's reasoning, it must be remembered that he embraces the whole universe. The sufferings and sorrows of our small planet might, from his point of view, be conceived of as a slight discord in the general harmony of a vast scheme, which requires for its full development the countless worlds which fill the immeasurable depths of space.

(II.) *Stand-point of Schopenhauer and von Hartmann.*—4. It would not be easy to find a flaw in Leibnitz's reasoning, if we once grant his postulate, *i.e.*, the existence of a Personal God with the assigned attributes,—in other words, if we are Theists. The Theist may criticise his train of thought as an attempt to pass beyond the limits of our finite intelligence, but he can hardly help assenting to its conclusions as in accordance with their premises. But the modern champions of Pessimism are not Theists: they do not admit the Personality of a Deity; they do not ascribe goodness to the strange Power, or rather Impotence, which they substitute for the Living God. It thus becomes necessary to state, with as much precision as is attainable, the central ideas of the philosophy of which Pessimism is only one of the consequences.

Schopenhauer (born 1788, died 1860), an able, though crotchety, thinker, ascribes the origin of the phenomenal world around us to the mysterious working of what he calls the Will. But he uses this word in an arbitrary sense, peculiar to himself. By Will we generally understand the determinations of a conscious agent; but Schopenhauer extends it not merely to the actions of the lower animals, but to the unconscious life of plants, and even to the forces of the inorganic world. Thus he looks upon such attributes of matter as gravity, impenetrability, rigidity, fluidity, elasticity, and such forces as electricity, magnetism, and chemical action, as the lowest stage of the clothing of the Will in

objective forms. The Will is more fully realised in plants and animals up to man, in whom it attains to consciousness of itself. As far as the word Will has any meaning, when applied to matter, it must be looked upon as equivalent to what earlier writers have called *Anima Mundi*, or the energising Soul of the World; but no reason can be given why the single attribute of Volition should be chosen to the entire exclusion of Intelligence and Power. With this hazy Pantheism Schopenhauer incorporated Buddhistic notions about the evils of active life, and the blessedness of absolute repose. Accordingly, as the desire to live on the part of the Universal Will has only produced misery and failure, the highest duty of man is the free renunciation and annihilation of his own Individual Will to live. It is rather singular that Schopenhauer combines with his half-Eastern philosophy the Platonic Theory of Ideas. Between the Universal Will and the individual objects stand the Ideas. These are intermediate stages in the process by which the Will becomes objective: "imperfectly expressed in numberless individuals, they exist as the eternal forms of things, not entering themselves into space and time, immovable, unchangeable, uncreated, eternal"* (a bit of pure Platonism).

Eduard von Hartmann is still alive, and may yet edify the world with fresh developments of doctrine. His system, also, is a kind of coarse Pantheism, influenced for the worse by the crude and arrogant Materialism which is the plague of this generation. He prefers to call it Monism, *i.e.*, a philosophy which denies the reality of separate individual beings, but affirms the existence of a Universal-One (in German, *All-Ein*), which is at first unconscious in the world of matter, but becomes partaker of transitory consciousness in transitory individuals, and, as a result of the unsatisfactory nature of this experience, yearns to return to its former state of unconsciousness. This Universal-One is not a Person; it is not, as in Schopenhauer's system, the blind, irrational Will, but it is Will and the Idea combined. It seems that this extraordinary Entity is intensely miserable. We are not told how an Unconscious Being can be aware either of pain or pleasure. But let that pass. Transcendental philosophers must not be profanely cross-examined like other people. Nor are we told how the individual von Hartmann learned the terrible secret of the intense misery of the Absolute Existence. However, it appears that this wretched Being, in order to

* Ueberweg, vol. ii. p. 263.

relieve his pain, gave birth, in some unexplained way, to the Universe.* Our sympathy, it seems, is due to these pathetic efforts of the Infinite Sorrow to annihilate itself! But enough of this grotesque blasphemy, which it is to be hoped that the accomplished author will yet live to repudiate. Many of these outrageous paradoxes appear, to a disinterested observer, to arise more from a morbid thirst for notoriety than from a sober love for truth.

It will appear from these statements of the central ideas of the philosophical systems of Schopenhauer and von Hartmann, that they are both Pantheists of an unusually nebulous description. The mere knowledge of this fact is enough to indicate what authority is due to them on moral questions. Those thinkers have no especial claim on the attention of the world whose deepest speculations about Existence and Personality have resulted in a fantastic self-contradictory scheme, founded partly on baseless assumptions, partly on ascribing real existence to mental abstractions, and partly on the most perverse misinterpretation of facts. Those who attach importance to clearness of thought and to consecutive reasoning, naturally decline to be taught by a man who can confound together the literal and metaphorical meanings of the word Will, and, when he has thus formed an abstract conception, which corresponds to no objective Thing, can ascribe to it real existence, nay, more than that, can assert that it is the only real existence, that which underlies all apparent personal existence. This word-juggling may perhaps be useful as a mental discipline, but from every other point of view it is merely an intellectual curiosity. The same remarks apply to von Hartmann. To combat their views effectively it would be necessary to begin at the very centre and work outwards, to demonstrate the baselessness of any form of Pantheism, and to show how, in its essence, it is always built up upon confusion of thought, upon the fallacy of investing mental abstractions with real existence,† whether it is Neo-platonism,

* Those who care to see how far the bad taste of the original surgical metaphor employed by von Hartmann is softened down in the text may consult Barlow's *Ultimatum of Pessimism*, p. 81, note. The influence of Buddhism is here very evident: for Gautama is said to have foregone Nirwana, and suffered ineffably in successive births in order "to attain the Buddhahip, and thereby gain the power to free mankind from the misery of existence." — *Globe Encyclopædia*, sub voc. "Buddhism."

† Every form of Pantheism is guilty of the vicious process known in the technical language of Mental Science as *hypostatizing abstractions*. See Ueberweg's refutation of Spinoza's system, apparently so logical.—*Hist. of Phil.*, vol. ii. p. 60 *et seq.*

or the system of Spinoza, or that of Fichte, Schelling, and Hegel. Now, I do not conceive that such a task lies within the scope of this paper, and I shall accordingly pass on to the consideration of the facts in the Universe by which Pessimistic theories appear to be supported. In discussing them, I shall do so from a Theistic point of view, as I think it is a waste of time to be combating Pantheistic fancies and paradoxes at every turn. Assuming, therefore, the truth of Theism, we will now proceed to see how far the existence of Evil in the world may be reconciled with the Divine attributes.

(III.) *Problem of Evil.*—5. We admit at once that the Problem of Evil is a great difficulty. In its essence it is this: How could a God of infinite goodness allow Evil to begin in any form in a universe which He Himself called into being? Various answers have been given to this question, and probably always will be given. First, however, we may address ourselves to the actual facts which form the starting-point for discussion. We have seen above that Leibnitz divided evils into three classes,—metaphysical, physical, and moral. It is perhaps more usual now to consider the two heads of physical and moral as exhaustive, and to neglect his group of metaphysical evils.

6. Let us begin then with physical, such as earthquakes, volcanic eruptions, hurricanes, inundations, drought, carnivorous animals, parasites both animal and vegetable, and similar facts. Now, the first thing that strikes us in reflecting upon them is that they form a class which it is the tendency of advancing knowledge to bring more and more under the dominion of law, and so of benevolent and harmonious order. We see at a glance, that this is true about thunder and lightning. Primitive races of men still regard these phenomena with unmixed terror, and not without reason. We, on the contrary, have learned by slow degrees that these terrible disturbances of the atmosphere are probably inevitable incidents in the vast circulation of water and air which is in incessant activity on the outside of our globe. To that circulation we owe our very existence, as it provides us with the indispensable fresh water by evaporation from the sea-surfaces and subsequent distribution by winds. In this elaborate and sensitive mechanism with its perpetual oscillations of barometric pressure, of temperature, and of moisture, a mechanism, the ultimate motive-power of which is the sun, storms and tempests, tornadoes and hurricanes, the roll of thunder and the flash of the lightning are moments of intense energy, which are quite lost sight of when we consider the normal smoothness and efficiency with which its vast operations are

conducted. When we know more about electricity, we may see with greater clearness, perhaps, that it plays some indispensable part in the economy of the inorganic world.

Earthquakes and Volcanoes.—Earthquakes and volcanic eruptions are confessedly the most awful and destructive of the forces of nature that we know. We have all read of the shock to man's oldest associations when he feels the solid earth reel under his feet, of the danger from the very buildings which he had reared for convenience or protection, of the hopelessness of escape from almost instantaneous and far-reaching ruin. Of the immediate causes of these phenomena we are profoundly ignorant. Still, we have advanced a little on the road to understanding them since 1755, the date of the earthquake at Lisbon, which destroyed at least 60,000 lives. Voltaire, in most respects an Optimist, took that disaster as a text for a tirade against the doctrine of Leibnitz, in *Candide, ou Sur l'Optimisme* (published in 1757). I am afraid that the attack had then the best of it. Much, however, has happened since. The science of Geology has thrown a new light upon the earth's crust. Amidst doubtful theories, it has accumulated a vast array of solid facts as a basis for future speculation. It would teach us that earthquakes and volcanoes are connected together, and that both represent forces, or a force, that once acted with greater energy. The favourite hypothesis about the formation of the crust of the earth at the present day is that of Elie de Beaumont, which supposes our globe to be a cooling, and consequently a contracting body. By this process can be plausibly explained the ridging up of mountain-chains, and the consequent depressions, or ocean-beds, between the main lines of elevation. For some time, geologically speaking, the earth appears to have entered upon a period of comparative tranquillity. It may thus be said that earthquakes and volcanoes are gentle symptoms, or, for all we know, inevitable accompaniments of the same tremendous elevating forces which, by their past energetic action, rendered the world habitable at all. I assume that no one will dispute the assertion, that without the upheaval of mountain-chains and continental ridges the surface of the globe might have been reduced to a plain, level with the sea. Elevating forces, whether identical with the contraction of the outer skin of the globe, or not, have played a great part in preparing its surface for man's habitation. It must be admitted, then, that more may be said now than in Voltaire's day to reconcile even earthquakes with our partial comprehension of nature as a scheme of Perfect Wisdom and Perfect Love.

Nor should it be forgotten that, as far as man is concerned,

volcanoes give him ample warning; that their periods of activity are often interrupted by very long intervals of repose; and that the extreme fertility of the soil formed by volcanic dust has, as an attraction, always induced a dense population voluntarily to brave the dangers of an occasional outbreak.

7. *Carnivorous Animals*.—Let us now consider the case of carnivorous animals alleged to be inconsistent with the Divine Benevolence. A great deal of sickly sentimentalism has been expended upon this subject by writers very imperfectly acquainted with the facts. Disgusting pictures have been drawn of the “carnage” of Nature. Mill, with the passionate bitterness which he showed in his attacks upon Natural Religion, speaks of “the lower animals (meaning, apparently, all except man) as divided, with scarcely an exception, into devourers and devoured.” Now this is not the case. The vast majority of land-animals are vegetable-feeders. So probably are those which people fresh water, if we may draw inferences from the universal presence of a rich sub-aqueous vegetation. The sea, it is true, offers a difficulty, because of the difficulty of observation; but the analogy of Nature would lead us to believe that there, too, the vegetable-feeders are the most numerous. Of the immense number of molluscs, insects, as well as of mammals and birds that consume a vegetable diet, only a small proportion, probably, have their simple existence of animal enjoyment cut short by their carnivorous foes. How monstrous the assertion of Mill is will also appear from familiar instances of great aggregations of animals in free nature. Who has not heard of the immense herds of bison that once roamed the prairies of North America, of the innumerable flocks of pigeons that, in the same country, darken the skies for days in their migration, of the mighty hosts of vegetable-eating mammals in South Africa? These are all cases where animals neither devour others nor are devoured in their turn to any appreciable extent. I presume my opponent will not have recourse to the subterfuge of saying that the ox or the elephant massacres minute insects in the grass or plants he eats. In the first place, the fact is doubtful: blades of grass, as a rule, are not favourite habitats of insects, as any entomologist will tell us; and secondly, we must really neglect minute and microscopic life in an argument of such generality as this.

Paley was probably right in saying that the vast multitudes of vegetable-feeders lead a life of complete enjoyment. But their tendency to multiply is so great that there must be some check upon their numbers. In a state of nature, no better check can be found than that of carnivorous animals, a

mechanism which is self-adapting and elastic, consisting as it does of predatory creatures, that increase and decrease in number in exact proportion as their prey increases or decreases; in other words, just as they are wanted. •Who has ever heard of objectors suggesting any better plan, or, indeed, any alternative at all? Under the circumstances they might, perhaps, “protest a little less.”

Now, if the carnivorous animals are indispensable as Nature’s executioners, it is as well that they should be as perfect instruments of destruction as possible. No one, then, need shrink from contemplating the lithe limbs, the terrible teeth, the furious rage of the tiger; or the powerful flight, the fierce beak, the hooked talons of the eagle; or even the noiseless gliding form, the poisonous fangs, the crushing folds of the snake. If they have to destroy life, at any rate let them do it effectively.

Another point deserves attention. Do the animals that are killed suffer pain, or are they not probably in a kind of mesmeric trance induced by the shock to the nervous system? According to Dr. Livingstone’s recorded experience of his sensations when a lion was crunching his arm, there would seem to be much to be said for this latter view. A vast number of facts have convinced entomologists that insects scarcely feel at all.

Again, it is well to remember that the reign of the carnivora, as far as the larger animals are concerned, is only preparatory to man’s appearance. Civilised man gradually takes upon himself the entire charge of the domestic animals, which are mostly vegetable-feeders, and the carnivorous mammals then die out, unless artificially preserved. One more point in this connexion. Those assailants of the benevolent purposes of Nature who have dilated so largely upon the carnivorous forms of life have been strangely silent about the scavengers. There can be no cruelty in feeding upon the dead. Now there are whole genera belonging to various divisions of the animal series whose function is that of clearing away all decaying organic matter. Not only are there the vultures and similar carrion-eating birds, the hyænas, jackals, crocodiles, and so on, but an enormous number of insects which, either in their larval or perfect form, are expressly adapted to feed upon putrefying animal matter. It is unnecessary to dilate upon the useful part they play in the economy of the world. Every one who is accustomed to country walks knows how rare a sight a dead animal is in Nature, except it has been killed by man.

8. *Vegetable and Animal Parasites.*—There is, no doubt, at

first sight, something very staggering in the existence of parasites, animal and vegetable; by which we mean organisms adapted to live at the expense of other organisms. Our imaginary opponent may well say, Why have horses, and oxen, and sheep, and dogs, and poultry, and even wild birds their several insect plagues, as well as still more hideous tormentors of the class *Vermes*? Do you know, he may say, the repulsive history of some of the *Entozoa*? For instance, how, in the case of the Tape-worms, the egg-stage of these loathsome creatures is adapted to be passed in the alimentary canal of one animal, and the adult form in that of another? Have you never read of the extraordinary life-cycle of the Flukes, which finally find their way into the livers of sheep, or of the *Trichinæ*, which are often fatal to man? Even the fish swimming in the depths of ocean have their minute Crustaceans clinging to various parts of their bodies—unbidden and life-long guests. Man himself is liable to be attacked by a great many forms, some of which, however, as the Guinea worm, are, it is true, rare and local. I reply that I am aware of all these facts, and freely admit that the existence of parasites is a very serious problem, and it is one that no one can pretend to have solved satisfactorily.

It is, therefore, with extreme diffidence that the following considerations are offered:—

Vegetable and animal parasites can hardly be separated. Now, in the case of Fungi, a class wholly parasitic, we know of at least one useful function. A vast number of minute Fungi are the scavengers of the vegetable world. Whatever falls to the ground in the woods, be it leaf, branch, or tree, is at once attacked by various species, which help to restore it again to its native soil in a form adapted for further use. But on the other side must be placed the terrible havoc caused by those species which attack living plants and animals, and are too familiar to us under the dreaded names of rust, mildew, smut, blight, potato-disease, &c. We must confess our profound ignorance of the benevolent aspect of these inflictions. Possibly they form one of Nature's stern warnings against over-crowding. She seems to tell us that, if we cover square miles of land with one crop—if we bring together enormous aggregations of one animal—nay, even if we interfere in the balance of life by over-stocking moors and salmon-rivers, we must expect some of her checks on over-population to make their appearance. This, however, I repeat, is offered as a mere suggestion for what it is worth. A ray of light may be thrown upon animal parasites by the now favourite conjecture that they are not original creations, but

deviations from an ancestral type, which was not parasitical.* The parasitic habit is thus looked upon as an acquired one. But still, after all, as we must suppose that the Creator implanted in animals this capacity for variation, we do not seem to advance much nearer a solution of the problem by this consideration.

9. *Diseases and Death.*—Some diseases are so intimately connected with moral evil that they cannot be considered as purely physical consequents of purely physical antecedents. Many are the direct result of vicious habits, or of neglect of the laws of health, or of ignorance, if not on the part of the individual sufferer, yet on that of the community at large. That this class of evils is gradually passing more and more under man's control is an undoubted fact, and we may hope for still greater progress in this direction. Still, though we may lengthen the average duration of human life, and prolong the existence of the weak and sickly, death must come sooner or later—the greatest evil of all to those who have not the Christian hope of immortality. But, surely, the Pessimists ought to welcome it as their best friend, if they really believe life to be so intolerable. The fact that Arthur Schopenhauer lived to be seventy-two, and wanted to live till eighty, seems to show that even Pessimists resemble ordinary mortals in not always acting up to their creed.

10. *Moral Evil.*—If the problem of Evil in general is a difficulty, that difficulty is enhanced tenfold when we come to the origin of Moral Evil or Sin. How could a God of infinite goodness permit this source of misery to originate among His creatures, and why did He do so? That it has originated somehow is a fact of experience, witnessed to by our individual consciousness, and by the unanimous voice of history. Whence did it come? *Unde malum et quare*, as Tertullian succinctly puts it. Plutarch (born about A.D. 50, died A.D. 125) thus clearly states the difficulty in a passage of his work, *De Iside et Osiride*, 45:† “For if nothing can be produced naturally without a cause, and the Good can not act as the cause of Evil, it is necessary that the natural development of evil also, as well as of good, must have its own generation and cause.” Many attempts were consequently made to assign this cause. In the dreamy East the ancient Persians assumed the existence of two great

* To give one instance out of many, Dr. Bastian thinks that the Guinea-worm is merely an accidental parasite, and that formerly it was a free or non-parasitic Nematoid.—*Globe Encycl. sub voce* “Guinea-worm.”

† *Ἐὶ γὰρ οὐδὲν ἀναίτιως πίπτει γενέσθαι, αἰτίαν δὲ κακοῦ τὰγαθὸν οὐκ ἂν ἀράσχοι, δεῖ γένεσιν ἰδίαν καὶ ἀρχὴν, ὡσπερ ἀγαθοῦ, καὶ κακοῦ τὴν φύσιν ἔχειν.*

World-rulers: Ormuzd, the source of Good; Ahrimanes, the source of Evil.* These are in continual conflict, but Good will finally triumph. Mani (about A.D. 240) combined this Zoroastrian doctrine with a corrupt form of Christianity, and gave rise to the famous sect of the Manichees.

Another explanation of the origin of Evil was to ascribe it to matter as opposed to spirit. Matter, according to this view, is too untractable to obey the behests of spirit, and from its imperfections and shortcomings it gives rise to all kinds of evil, Another solution is that of Pantheism which practically ignores Moral Evil. All so-called individual beings are but transient embodiments of the Universal Impersonal Existence, when it submits to the conditions of time and space. All actions alike are really Divine, and it is absurd to speak of them as good and bad. Logical Pantheists are thus driven to extenuate Moral Evil as much as possible, to speak of it as imperfection or ignorance. As many of the modern exponents of Pantheistic or semi-Pantheistic views are widely read from the originality of their ideas, or poetical charm of their style, it is well to remember that they are all liable to this grave charge of under-rating the power and the effects of Moral Evil.

11. We now come to Christian writers. The Christian Revelation presupposes the existence of Moral Evil in the world, for it claims to be essentially the Divine remedy for that evil. But it is silent on the mysterious question of its origin. Christian philosophers, nevertheless, have attempted to answer it, and in so doing have produced much valuable speculation. Origen, Augustine, and Eckhard, may be taken as representing—the first, the Eastern Church; the second, the Western; and the third, Mediæval Mysticism. In making these quotations I do not, of course, accept the responsibility of every statement contained in them, but adduce them as specimens of philosophic thinking.

Origen (born A.D. 185, died 254) has the following passages bearing upon the subject of the origin of evil †:—"The goodness of God could never remain inactive, nor His omnipotence be without objects for His government: hence the creation of the world cannot have been begun in any given moment of time, but must be conceived as without beginning. . . . God did not find matter already in existence, and then merely communicate shape and form to it, but He Himself

* It is now denied that this Dualism was part of the original teaching of Zoroaster, but if it is an additional development, it is at any rate one of great antiquity. Its date, however, does not affect the argument in the text.

† Ueberweg, *Hist. Phil.*, vol. i. p. 217.

created matter; otherwise a Providence, older than God, must have provided for the possibility of His expressing His thoughts in material forms, or a happy accident must have played the rôle of Providence. . . . Evil is the turning away of the creature from the fulness of true being to emptiness and nothingness, hence a privation. The cause of evil is neither God nor matter, but that free act of turning away from God, which God did not command, but only did not prevent."

Augustine (born A.D. 354, died 430) says *:—"The cause of evil is to be found in the will, which turns aside from the higher to the lower. . . . The evil will works that which is evil, but is not itself moved by any positive cause; it has no *causa efficiens*, but only a *causa deficiens*. Evil is not a substance or nature (essence), but a marring of nature (the essence) and of the good, a 'defect,' a 'privation,' or 'loss of good.' An absolute good is possible, but absolute evil is impossible [against the Manichæan doctrine]. Evil does not disturb the order and beauty of the universe; it cannot wholly withdraw itself from subjection to the laws of God; it does not remain unpunished, and the punishment of it is good, inasmuch as thereby justice is executed. As a painting with dark colours rightly distributed is beautiful, so also is the sum of things beautiful for him who has power to view them all at one glance, notwithstanding the presence of sin, although, when considered separately, their beauty is marred by the deformity of sin."

Eckhart (born after 1250) was a Dominican monk, who was one of many examples of the extreme boldness of speculation which prevailed under the guise of ecclesiastical forms in the Middle Ages. His remarks on the subject of evil are interesting. "The relation of evil,"—says Dr. Adolf Lasson, in the interesting sketch of German mysticism which he has contributed to Ueberweg's book,†—"to the absolute process is not clearly explained by Eckhart. It was impossible that this should be otherwise, since Eckhart conceded to evil only the character of privation. As denoting a necessary stadium in the return of the soul into God, evil is sometimes represented by Eckhart as a part of the Divine plan of the universe—as a calamity decreed by God. All things, sin included, work together for good for those that

* Ueberweg, *ut supra*, p. 343.

† Ueberweg, *Hist. Phil.*, vol. i. p. 481. It is, perhaps, well to repeat here the caution already given that the writer of the paper does not accept unconditionally, or ask others so to accept, the views of Eckhart. The mere fact that he was brought before a tribunal of the Inquisition at Cologne in 1327, and that twenty-eight of his doctrines were condemned by a Papal

are good. God ordains sin for man, and for those most of all whom He has chosen for great things. For this, also, man should be thankful. He should not wish that he had not sinned. By sin man is humiliated, and by forgiveness he is all the more intimately united to God. Nor should he wish that there might be no temptation to sin, for then the merit of combat and virtue itself would no longer be possible. Regarded from a higher standpoint, evil is not evil, but only a means for the realisation of the eternal end of the world. God could do no greater harm to the sinner than to permit or predestine him to be sinful, and then not send upon him suffering sufficiently great to break his wicked will. God is not angry at sin as though in it He had received an affront, but at the loss of our happiness, *i.e.*, He is angry only at the thwarting of His plan in regard to us."

12. The lines of thought indicated in these extracts have been more or less followed by subsequent Christian apologists. At the present day, whether rightly or wrongly, we are more disposed to put aside such questions as insoluble. We think we have not sufficient data to form premises for such conclusions. If such inquiries do not transcend our finite capacities, they are at any rate beyond the sphere of human experience, human duty and human responsibility. But it does not follow from this speculative limitation that we are in any doubt as to our practical relation to Evil. The Christian view of life is as reasonable as any, that which regards it as a scene of probation, a stage of training for a higher existence. Evil is around us and within us; but, when looked at as the instrument of discipline and progress, it loses half its sting. How benevolent, for instance, is the natural punishment of sin, acting as a call to amendment and a solemn warning of the danger of continuance in wrong-doing! But, some will object, many innocent and excellent persons are visited with affliction, and pain, and poverty. The vindication of this apparent anomaly lies in the infinite importance of right moral action. A noble deed, an instance of unselfish devotion to duty or to the higher interests of others, the meek suffering of undeserved calamities are the supreme moments in the history of our race which counterbalance its prevailing frivolity and carelessness. But such acts are only possible, as a rule, in the presence of Evil. The common instinct of humanity has recognised the quality

Bull in 1329, would be *prima facie* in his favour. But there is no doubt that great devoutness and blamelessness of life were, in his case, combined with daring speculation which verged upon Idealistic Pantheism; indeed, he appears to have anticipated Schelling in claiming for the human intellect the immediate intuition of the Absolute.

of *heroism* as of higher value than any amount of material prosperity, of intellectual progress, of artistic sensibility. The personalities that have touched and will continue to touch the universal heart to the end of time are the patriot dying on the field of battle, or murdered by the political assassin, or toiling for the relief of human suffering; the prophet and the martyr giving their testimony to the sacred rights of conscience; ay, and thousands more of brave men and single-hearted women, who in the path of duty cheerfully face death in order to benefit others. Such acts as these could hardly be conceived apart from the existence of Evil; and may go for something in the educative value of suffering in the history of the human race.

13. If we take very much lower ground, we find that the Pessimists are confuted by ordinary experience. They say that life is so miserable that it is not worth having. But the vast majority of mankind do not think so. They are quite content to live. Indeed, they are very reluctant, as a rule, to leave off living. Life is evidently desired for its own sake, even where there is no high standard of religious faith, or indeed no religion at all. The Esquimaux in their snowy deserts, the savage African under the blazing sun of the equator are all attached to life, where the motives for living seem so much less powerful than in the case of cultivated races. This love of life in itself is a fact, which the Pessimists are bound to account for. As it is so universal, it must spring from universal causes and may perhaps be partially explained by (1) the strong instinct of self-preservation, which makes itself felt by us all in momentary danger, (2) the satisfaction and self-approbation arising from doing honest work, (3) the pleasure of property, even in small things, (4) the happiness of married life and the sweet love of children, (5) the hope of improving one's condition. These ordinary motives, apart from higher ones, are, probably, quite strong enough to counteract in practice all the fine-spun theories of the Pessimist.

14. *War*.—Pessimists have said some hard things about war. This opens up such a wide field of discussion that it is, perhaps, presumptuous to treat it in a cursory manner. But a few words may be said in answer to the wild exaggerations current on this subject. We may ask how else can the religious and political liberties of one state be defended against the encroachments of another. European culture would have perished in the bud, if the little band of small Greek states had not combined together against the vast aggregate of the Persian Empire. And in modern times the overwhelming supremacy,

first of Spain, which involved the establishment of the Inquisition and the debasement of religion, and afterwards of France, which aimed at the political subjugation of all Europe, could only have been broken by long-continued wars.

15. *General Course of History.*—To Schopenhauer, the history of humanity is aimless. One can only understand this assertion by remembering that, to a hazy Pantheist, the rise and progress of the Christian religion—the central fact of all history—must appear an unintelligible delusion. Ordinary thinkers, on the contrary, not misled by the love of paradox or the affectation of originality, have agreed in tracing a great plan through the centuries of recorded time. All the nations of antiquity that have contributed to the development of culture were finally absorbed into the great world-empire of Rome. We see here a preparation for the reception of Christianity in the enforced peace and political unity thus imposed upon a vast extent of populous territory, in the breaking down of national religions and modes of thought, and in the very general diffusion of the Greek language. Most historians agree with Merivale that the conversion of the Roman Empire under Constantine is the most astonishing moral revolution recorded in history. From causes, however, which lay apart from the new faith, and were in operation before its triumph, the mighty Colossus of the West slowly grew weaker and weaker, and ancient civilisation disappeared for a time under the successive waves of barbarian invasion. From the chaos thus induced, the great states of modern Europe have slowly emerged. And it seems to be their mission, in turn, to extend to the uttermost parts of the earth the culture and religion which have given them their pre-eminence in the world. Nothing but perverse blindness can fail to see a connected and far-reaching plan in this very brief sketch of the results of historical study.

In conclusion, I must express my consciousness of the temerity which induced me to treat of so profound and mysterious a subject. The Problem of Evil meets us in many provinces of thought, and reaches in its origin and results from past eternity to that which is to come. To attempt to do justice to a theme so awful and fascinating would require a volume and powers of intellect to which I lay no claim, and I can only naturally expect to be told that my brief treatment of many parts of this tremendous subject has been inadequate. But, when a mischievous delusion is abroad, an imperfect exposure of it is better than none at all, and may lead the way to its more complete refutation by one better fitted for the task.

The CHAIRMAN (Right Hon. A. S. Ayrton).—I am sure we are all obliged to Mr. James for having brought this subject under our notice. It is now open for any present to take part in its discussion.

Rev. F. S. COOK, D.D.—There are some opinions which, although very much opposed to revealed truth, we are bound to treat with respect ; but with regard to this scheme of pessimism, I, for one, cannot admit it to be a system of philosophy. It is contradicted by experience ; and it must, indeed, be a strong system of philosophy that can maintain itself against the whole weight of human experience. In all past ages, as well as that in which we live, we have the strongest testimony to what is advanced by the author of this paper—namely, the desire to live, which is implanted in the breasts of all human beings. We can see, as Christians, how strongly God has bound us to our places in this world ; and, although we find that, even with this incentive to live, men occasionally go out of the world by their own hands, we may fairly ask how many more suicides would there be if mankind were not bound to life by so strong a tie ? But the pessimist view is contrary to all that we are conscious of in human nature. The desire to live is a universal instinct. Not only is it our experience that men express themselves to this effect, but we all carry a strong witness to the truth of the instinct of self-preservation in our own bosoms. If there be an inborn consciousness in each of us, we require no evidence beyond that which has been set in our own hearts—namely, the desire to live. If, then, there be this grand and universal fact of consciousness and desire to live, no system of philosophy (and, as I have said, I do not call this pessimism a philosophy) can maintain itself against it. We have in the Word of God clear testimony to the value of life ; and, with regard to the great problem of moral evil, although no one can give an exact and definite statement about it, it is quite clear that we can get, for all the requisite purposes of thought and Christian philosophy, and for all the practical purposes of life, a sufficient theory thereon.

Mr. J. HASSELL.—As Christians, we must never forget that God has given us a perfect remedy for the moral evil which is found in this world. The more closely man walks with God, the less there will be of moral evil. Moral evil is the result of ignorance and sin ; and, as Christians, it is our duty to set before our brethren its true remedy, and that remedy is conformity with the will of God. I should like to say a few words with reference to paragraph 8, as to “parasites.” Here again, while we must admit there are these parasites, we ought not to forget that these creatures, whether the *epizoa* or the *entozoa*, are the natural punishment of ignorance and neglect of the laws of Nature. For instance, man violates the natural law of absolute cleanliness, and *epizoa* are the result. Man breaks some of the laws of cookery, and *entozoa* are the result. If we have cleanliness and good cookery we do away with these things ; therefore, the remedy is more or less in our own hands. Take, again, the case of the salmon. Is it not a notorious fact

that we have polluted the waters of our rivers to such an extent that the salmon, becoming infested with *entozoa* and *epizoa*, have been made to suffer through the folly of man? We ought, therefore, to endeavour to act with prudence and conscientiousness in regard to all such matters, and thus bring to the lowest possible minimum these physical evils. If we, as Christian pioneers, and missionaries, only succeed in making our people cleanly, thoughtful, and sober-minded, we shall do much to minimise physical as well as moral evil, and may bring about a better state of things by co-operating with God in preparing for that grand and glorious time, when evil shall be abolished, and truth and righteousness will be established to the happiness and advantage of our country and of the whole world.

Mr. W. GRIFFITH.—One explanation of the difficulties is that, as there is a moral Governor of the Universe, we must accept and admit the conclusion that justice will be administered to all, and that, therefore, in the long run, evil will not predominate. There is force in this proposition; but, *à priori* reasoning hardly satisfies the practical mind of the present day. We look around us and witness an enormous amount of evil, and the problem we have to solve is, how are we to explain and reconcile this, not on mere abstract grounds, but on such as may convince the majority of our fellow-creatures? The author of the paper has quoted a very important passage from Leibnitz, whose writings for some generations have largely influenced the philosophic mind of Germany. We ought to feel greatly obliged to the author for having brought forward many arguments which refute the minor propositions of Schopenhauer, Von Hartmann, and other writers of that school of pessimists which denies the existence of a moral supreme government. But it is hardly necessary to use the *à priori* argument as to the existence of a moral Governor, in order to explain some of the evils that exist. It can hardly be said that, because one order of beings possess great powers of happiness and intellect and other faculties, it is, therefore, an evil that inferior animals, without such faculties, should exist. Such animals may exist and enjoy life, and their happiness may be great, not only in the individual, but the sum of happiness, in the whole, may be very considerable. As a question of society we must expect in the different orders of beings that some must be superior to others, and, without taking the *à priori* argument, it is clear that, if we have in the universe a society of men and animals, there must be some that are superior to others. The metaphysical argument is advanced by Leibnitz in his first position, but I think the truth establishes itself independently of metaphysics. We must remember that man is at the head of creation, and it is his duty to use the powers of intellect he possesses for the purposes of civilisation. He does so use those powers, and, according to the way in which they are exercised, evil may diminish, and the happiness of his race be enlarged. If he does not exercise them, he is in fault. But this is only on the ground that the powers given him for subduing nature are not properly exercised; the barbarism thereby produced being

the punishment due to his own fault. The great difficulty before us is, however, moral evil. Undoubtedly, as far as we as individuals are concerned, the Christian Revelation does explain it. We have the remedy offered, and if we do not accept it, it is our own fault.

The CHAIRMAN.—I may perhaps be allowed to bring the discussion to a close. I confess I have been very much struck by many of the remarks that have been made, and that I fully appreciate their importance and value. It seems to me to be one of those results that must necessarily spring from the doctrines which have recently prevailed, and which have culminated in a renunciation of the existence of a God at all, that certain people now undertake to put themselves in the place of God, and are disposed to consider whether they could not manage the affairs of the universe better than they are managed by the Creator. These men, having taken on themselves this mission, have assumed the ability to determine how the world should have been made—of how, indeed, the worlds embracing the universe ought to have been constructed, and how this portion of the universe should have been provided with everything which ought to exist on the face of the earth. This, no doubt, is a very considerable work for any man, or any set of men, to take in hand ; and it is quite possible that they have got enough to do when they come to the conclusion that they could have done it all much better themselves if they had undertaken the task. To compare small things with great, I have always regarded it as a very sound principle, in judging of the acts of human beings in this world, that when they undertake anything with the modest belief that they are able to perform what they have engaged to do, the most unwise thing we can do is to form a definite judgment on what they have done, without first communicating with the workers themselves, and ascertaining their reasons for what they undertook, and the mode in which they have performed their task. Because, if we endeavour to judge of what people have done without knowing why they did it, the probability is we may make a very grave mistake in coming to a conclusion adverse to their mode of procedure ; at all events, they may be able to show that, if we have our idea, their way is at least as good as ours, and, perhaps, on comparison, a great deal better. If, then, we bring ourselves to this state of feeling, we shall see the extravagant absurdity of putting ourselves in a position to arraign the great work of the creation and preservation of this universe. (Hear, hear.) We have no means of ascertaining, and still less of determining, what was the exact scheme in view, and what were the processes of the creation and preservation of the world. We presume to say that this and that are evils, but we do not know ; in fact, we have absolutely no knowledge of the grounds, if I may speak in conventional language, on which the relations of things have proceeded. We do not know, when told that animals prey upon each other, what was the purpose for which one creature was so constituted in relation to another that it should make the other its prey. The more we reflect as to what we ought to know, in order to be able to form a

judgment on the whole work of creation, the more conscious we become of our total ignorance of the subject, and of our incapacity to form any judgment at all. I remember having heard a very intelligent author assert that bodily pain was one of the evils of this world. I, for one, was rather startled by the suggestion. I had always thought that bodily pain was a beneficent messenger from the part afflicted, intended to give an intimation to the mind that something wrong was going on in one's existence. As it is, the smallest departure from healthy existence is attended by bodily pain, which necessarily attracts attention to the part affected; and it is our own fault if we neglect the warning thus given, and do not consider what is the most appropriate remedy for dealing with and getting rid of the affliction. Therefore, we find that bodily pain is a means to the preservation of health and life; and that, far from being an evil, it is a most beneficent thing in connexion with our existence, when looked at from this point of view. I have merely given this as an illustration of the necessity of examining these things from different points of view. In saying, then, whether a thing is good or evil, we have to go, not only to the immediate cause, but to other and more remote causes, and to view it in all its complicated relations to other things before we can arrive at the means of forming anything like a definite judgment. If we take a hasty view of the first apparent cause of any given effect we may think it bad; but, by going deeper, we may discover that it was a very good thing it happened just as it did. So it is with any attempt to survey the world; and I believe, with regard to the existence of moral evil, and the recognition of the Almighty as a Creator actuated by beneficent views, that there is ample and conclusive proof of what may be termed a moral governance of the world, so perfect in its nature that every human being knows he has a moral consciousness which is part of his mind; and that if every one in the world has been so created that he possesses moral sentiment, it is clear that this is the result of the moral sense of his Creator, and a recognition of the morality of that Creator as evidenced throughout the human race. But it is said that if this be so, why has the Creator permitted evil? Here, however, it must be remembered that He has allowed us a moral mind; that He has given us, at the same time, certain impulses and passions which are necessary for our existence. The question, then, arises, whether there is such a thing as immorality, unless it springs from the immoral thoughts of human beings themselves; whether, in point of fact, there is such a thing as immorality in the world, except as far as that evil thoughts make evil deeds. (Hear, hear.) If these evil thoughts are our own thoughts, and the sum of the evil in the world is the sum of all the evil thoughts of those who exist upon its surface, and if, also, we have a moral sense, and, therefore, know those thoughts to be evil, how can it be said that people who do immoral things are not themselves responsible for the evil, and that it is not their own creation? What right, in that case, have they to ascribe it to the Creator? They have no such

right. The two things we have been speaking of thus become separable, and the immorality which exists in the world, and the suffering that is the consequence of immorality, are entirely the result of the acts of humanity itself. Any one who reflects on this subject will, I think, admit that what is termed happiness, or enjoyment, is only a relative term. I was remarking the other day what a bore it must be to be as rich as a person then mentioned. He cannot have a moment's peace or comfort. It must be a terrible worry to him to deal with his fortune ; in fact, this is more than he can do, and he is obliged to hand over to others the task of managing it for him. I take it that I am just as happy as he, without possessing his fortune ; and I am not quite sure that I am not a great deal happier, because I have not so much trouble to think about. It is, at any rate, clear to me that, in the cottages where we find the humblest form of human existence, there is as much happiness, provided there is a good moral sense, as is to be found among the wealthy owners of the soil. The whole question resolves itself into what is the condition of a man's mind—whether he rejoices in the morality of human existence, or whether he chooses to rejoice in the vices of human existence, vices which bring with them their own retribution, and make the lives of those who practise them, however rich they may be, more miserable than that of the poorest person who leads a moral life. Looked at from this point of view, one rejects the notion that Providence is to be burdened with the immorality of the world. (Hear, hear.) For my part, I repudiate the idea that God is to be held responsible for evil. He has given us a perfect conception of good, and if we choose to follow up that conception we shall have no evil. Therefore, it is we—that is to say, humanity at large, which is responsible for evil, and not God. God is responsible for the goodness of the world, which man is taught to practise. There are many things that can be regarded in the same light, and when so regarded all this superstructure of human vanity which is displayed in undertaking the reorganisation of the world, and in determining the object with which it has been created, vanishes before us, and we are left in full possession of that power which is given us, if we choose to exercise it, of seeing the presence of the Creator everywhere, and of recognising His supremacy in all He has done for the benefit of mankind. (Applause.) I have only now to tender the thanks of this meeting to the author of the paper, and to ask whether he has anything to say in reply to the speeches that have been made.

Mr. W. P. JAMES.—With many of the remarks that have been offered upon my paper I cordially agree ; but I do not think they can be regarded as criticisms, while some of the speakers appear to have slightly misunderstood the object with which the paper was written. It was intended as a refutation of a particular system of philosophy, namely, that which goes by the name of "Pessimism." This system may be very detestable and very dreadful ; but, nevertheless, it exists, although one or two of those who have spoken to-night seem not to have realised it. As such a system of scepticism

does exist, I have deemed it possible that I might, in an humble way, render a service to some of those who may have been tempted to favour this form of disbelief, by endeavouring in some measure to refute it. Some of the remarks that have been made would have been relevant to my paper if the speakers had pointed out in what respect they considered me to have failed in my refutation. As to the Origin of Evil I have expressed myself with the greatest care, recalling the old line that "fools rush in, where angels fear to tread," and have confined myself, in a great measure, to bringing forward the opinions of others, my own views being conveyed in these two or three very guarded sentences:—"At the present day, whether rightly or wrongly, we are more disposed to put aside such questions as insoluble. We think we have not sufficient data to form premises for such conclusions. If such inquiries do not transcend our finite capacities, they are, at any rate, beyond the sphere of human experience, human duty, and human responsibility." All the rest is quoted. I have adopted this course from excess of caution, because I did not consider that the scope of the paper required me to give any views of my own upon the point. The paper, as I have stated, is intended to refute a system of philosophy called "Pessimism," now prevalent in Germany. Von Hartmann, one of its greatest champions, is still alive, and has many disciples there; and, as his doctrines are discussed in the *Fortnightly* and *Contemporary Reviews*, as well as in other magazines published in England, and as books have also been written upon the subject in this country, representing Pessimism from a very favourable point of view, I thought it possible that some, whose faith may have been staggered by reading these things, might be helped by this paper, and I have been anxious to know if I have failed to meet the positions taken up by the Pessimist School. I am much obliged to Mr. Griffith and our Chairman for their remarks. I think that few are aware of the wide extent to which Pessimist views have spread, or, at any rate, of the toleration that has been accorded to the extremely rash statements the Pessimists have made. Von Hartmann's theory I have stated with a good deal of softening down from the original, because, not to put the matter too finely, the system he expounds is, really, a system of blasphemy. (Hear.)

The meeting was then adjourned.

REMARKS BY THE REV. CANON W. SAUMAREZ SMITH, D.D.

(PRINCIPAL OF ST. AIDAN'S THEOLOGICAL COLLEGE, BIRKENHEAD).

Mr. James's paper is a useful one, however "inadequate" such "a brief treatment" of such a vast subject may, and must, be. It is suggestive, and lays down clear lines upon which rational discussion may proceed. And the need of such discussion, as the writer points out at the commencement of his paper, is found in the very hasty way in which superficial notions about science and philosophy are taken up and diffused; so that what may be termed an "anti-traditional" and "anti-religious" bias is created on insufficient grounds, and is often regarded as a sign of courage and culture!

With reference to Mr. James's first question, it is well to remember that of *absolute* "Optimism" and "Pessimism" no finite creature can possibly be an adequate judge. No one save an Infinite, Self-existent Being, prior to, and the ultimate cause of, all finite existences, can be omniscient; and without omniscience who can say what system of things is *best* or *worst*? In defining, then, for purposes of discussion, Pessimism, and its antithesis, Optimism, we mean the respective theories that all things tend to *evil*, and that all things tend to *good*. Which of these theories is the more reasonable and philosophical? If we take a merely materialistic,—*i.e.*, an essentially atheistic,—basis for speculation, we shall find it hard to defend any Optimistic theory; but if we are Theists, we shall be able to contend (i.) that it is reasonable to expect good from God; (ii.) that God must be the better judge of the whole scheme of things than finite man can be; and, if we are *Christian* Theists, we can add (iii.) that God has given us a series of Revelations which inform us of a remedial and restorative purpose which dominates the history of human development—revelations which, while they recognise a mystery of evil, unfold a greater mystery of good.

To all who want suggestive thoughts about Pessimism let me commend an admirable lecture upon the subject in Professor Flint's *Antitheistic Theories*. Very clearly does he show that Schopenhauer and Hartmann's doctrines are "essentially Buddhistic," setting forth "a modified Buddhism without Buddha"; and that, while they thus make the Nihilistic theory less extravagant and legendary, they at the same time render it barren, abstract, and repellent. By eliminating the personal element which mingles with all the teaching of Buddhism they take away the sole support of an *emotional* character which, as it were, clothes with a positive garb an essentially negative creed.

Mr. James points out that Schopenhauer and Hartmann are "both Pantheists of an unusually nebulous description"; and assuredly, when we try to represent to ourselves the "alogical" Will by whose endless strivings Schopenhauer asserts this evil world to have been brought forth, and to be maintained in misery; or the "*unconscious* (mind?)" in which Hartmann

discovers a creative, and providential, and continually operative force underlying all sentient and non-sentient phenomenal existences, and tending towards annihilation,—that is, the reproduction of that “primitive harmony of the unconscious,” where nature and conscious life are non-existent; when, I say, we try to represent to ourselves these “hypostatized abstractions,” we shall most certainly conclude that we are in a speculative cloudland where there is no firm ground on which we can build either reason or faith.

All Pantheism, even the most poetical, and still more this pseudo-metaphysical stuff, is antitheistic and atheistic in its ultimate issues; but I should myself refuse to call Schopenhauer and Hartmann *Pantheists* at all. They might perhaps be termed “fatalistic *Pandynamists*”; and when men who are really searching after truth find that this permeating *δύναμις* is “blind will,” or a sort of “unconscious mind,” they will probably concur with Professor Flint, that they “do not need to occupy time in criticising fancies so arbitrary and self-contradictory.”

What we do need to consider in respect of any Pessimistic theories is, what bearing they have upon natural and revealed religion.

For myself, I think there is often an exaggerated idea of pain and death as *physical* evils; and in the animal and vegetable world, regarded apart from man, I do not find that “cruelty” and “carnage” are of such significance as to induce me to blame Nature, or God. In the field of physical research we can not seldom perceive how death is but part of the cycle of life, and how much that seems violent and calamitous is needed for the general good. But when we turn from “physical” science to mental philosophy and ethics, and to the personal and social factors of human life, we see much to perplex and to sadden; and our self-conscious nature, with all the discursive and introspective faculties of our complex personality, makes us susceptible to apprehensions, and fears, and hopes which will not be soothed or satisfied by any mere physical theory of the universe, but reach forward, hither and thither, with the questions, Where is happiness? Who will show us good? In this *moral* (or spiritual) aspect of matters, “the Pessimist view of existence can only be met by a religious view of existence.” And have we not in all Pessimistic theories (whether of poets, novelists, or philosophers) a strong testimony to the truthfulness of those views of human nature, and of its moral and spiritual needs, which the Bible sets before us? Everywhere there is a consciousness of evil; everywhere there is an aspiration after happiness,—that is, after what is good and harmonious. Everywhere there is some felt need for a remedial interposition; and even amid variously formulised utterances of despair there is recognisable a persistent hope of deliverance.

All this corroborates the reasonableness of an anti-materialistic view of the universe.

Neither *Hedonism* on the one side, nor *suicide* on the other, can satisfy our spiritual instincts; and these instincts cannot be inherent in man as

being either *from* nothing or *for* nothing. A *positive basis* exists somewhere. Human nature cannot content itself with philosophical *Nihilism* any more than it can with agnostic,—i.e., practically atheistic,—“*Positivism*” (so called). Faith in the existence of a Personal God, as the Beginner and Goal of all things, is the $\pi\omicron\upsilon\ \sigma\rho\omega$ which gives the only sufficient starting-point for satisfying and elevating search after truth in Nature, Mind, or History. Believing in this, we believe in the possibility of special revelations, which make history intelligible, however many difficulties, not to be solved by finite minds, remain for the philosophical thinker; and in accepting the Christian Revelation we have a refuge from our ignorances and our sorrows in the certain conviction that God is love, and that the *resultant* of all things is not evil, but good.

ORDINARY MEETING, APRIL 7, 1884.

H. CADMAN JONES, ESQ., M.A., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

ASSOCIATES :—Rev. C. Beeby, M.A., Birmingham ; Rev. Canon W. Daunt, M.A., Cork ; Rev. J. Iverach, M.A., Aberdeen ; Rev. W. H. Platt, D.D., LL.D., United States ; R. J. Wicksteed, B.A., LL.D., B.C.L., Canada.

HON. LOCAL SECRETARY.—Professor F. T. Bell, D.Sci. Belleville, Ontario.

Also the presentation of the following works for the Library :—

- “Proceedings of the Royal Society.” *From the Same.*
 “Earthquake Movements.” *From the Tokio University.*
 “Graptolytes.” By J. Postlethwaite, Esq. *From the Same.*
 ‘The Pharaohs and their People.’ By Miss Berkley. ”

The following paper was then read by the Author :—

THE PREHISTORIC FACTORY OF FLINT IMPLEMENTS AT SPIENNES. By the Rev. J. MAGENS MELLO, M.A., F.G.S., Member of the Scientific Society of Brussels, Local Secretary for Derbyshire of the Society of Antiquaries, &c.

IT is now a generally recognised fact that what has been called the “Stone Age” in this and in the adjoining countries of North-Western Europe was a lengthened period which was characterised by two well-marked periods,—one, the first, in which the implements used by early man were extremely rude, consisting chiefly of flints and other stones roughly chipped into forms more or less serviceable, which may have been used as axes, scrapers, knives, and hammers. During the earliest stages of the period these were rough in the extreme ; a few flakes struck off here and there from a larger stone were considered sufficient to adapt it for various purposes. There was no attempt whatever at finish. Implements of this type have been met with in the gravels of certain rivers, and amongst the oldest deposits in bone caves. At a later date the implements were somewhat more carefully fashioned, and amongst the relics of early man found in caves in this and other countries, tools and weapons of stone

have been found which exhibit far more differentiation in their forms than those I have mentioned, and were frequently carefully and somewhat elaborately chipped into shape. These two classes of implements merge gradually into one another, and together form what is known as the Palæolithic stage of human culture in this part of the world. This stage, however, presents us with no instances of the highly-elaborated implements, many of which were carefully polished, and some of which even survive in the forms produced in other materials at a later period. That age in which polished implements were used is the Neolithic, sometimes called the Prehistoric, and is, as I shall have occasion to notice further on, sharply cut off from the preceding Palæolithic age; we not only find no fusing of the implements, such as is the case with regard to the ruder and the more highly-finished implements of this latter, but it is also divided from it by a great change in the fauna; whereas during the Palæolithic age such animals as the mammoth, the rhinoceros, the reindeer, the hyæna, and others which, like these, are either extinct or no longer to be found in these countries, were the contemporaries of man, these had totally disappeared before the incoming of the Neolithic race, and the fauna which now prevails in Europe first made its appearance.

Having thus sketched out the main features of the two ages of the Stone period, I purpose in this paper to give an account of one of the great manufacturing centres of the Neolithic age.

The prehistoric factory of flint implements at Spiennes, in Belgium, although long known to Archæologists, and described in the report to the "Société des Sciences, &c." of Hainaut, made some years since by MM. A. Briart, F. Cornet, and A. Houzeau de Lehaie, has not, so far as I am aware, been noticed in detail in any generally accessible publications in this country; and, having had an opportunity of visiting the locality, and through the kindness of my friend the Marquis de Wavrin, of obtaining a large number of characteristic specimens, it has occurred to me that a short account of these, accompanied by illustrations of typical forms, may prove interesting to any who care to investigate the history of early man in Europe, and who would wish to compare the implements of this locality with those met with elsewhere.

It is well known that the Prehistoric or Neolithic inhabitants of North West Europe did not depend solely upon isolated labour for the supply of such stone weapons and tools as were needed by them, each individual making his own

when required, but that large manufacturing centres were established, in suitable localities, from which immense quantities of implements were issued, to be dispersed in the ordinary course of that trade which is known from various sources to have been carried on by the wandering tribes of those early days; the implements derived from these factories can be traced over wide districts.

In this country we had the well-known prehistoric manufactory of Cisbury, where are still to be seen the old pits and galleries from which the flints of the Chalk were obtained, and in which pits are found not only numerous remains of the implements themselves, in various stages of completion, from the rough nucleus to the finished axe-head, but also of the tools used in extracting the flints.

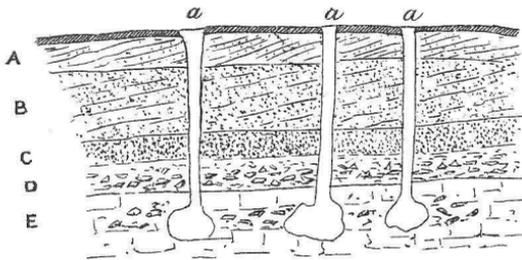
In France a considerable number of such factories are known,—for instance, the celebrated one at Pressigny-le-Grand, others also at Civray, Biard, and Charroux in Poitou, and one in the Commune of Chauvigny (Loire-et-Cher), called “le Champ des Diorières. Turning now to Spiennes, we find above that village, a tiny hamlet of labourers’ cottages, built on either side of the little river Trouille, plateaux now occupied by cultivated fields, but which were formerly the site of one of the most important Neolithic factories with which we are acquainted. The table-land is cut through on both sides of the river to the south of the village by the railway, which has thus enabled us to obtain good sections of the various beds forming the elevated ground. These are found to consist of brick-earth below the surface *detritus*, and under this is sandy loam, locally called “*ergeron*,” which, in its turn, reposes on other sandy beds, and on a deposit of angular and subangular flints, together with chalk *débris*, the chalk rock itself forming the basement of the whole series.

In the lower portions of these beds remains of the Pleistocene age occur, such as the mammoth, the woolly rhinoceros, the cave bear, the lion, the Irish elk, the urus, and the horse, and with these have been found flint implements of the well-known St. Acheul or river-gravel type. Through these various deposits, pits similar in many respects to those of Cisbury have been dug by the Neolithic men; in several places these pits not only penetrate the chalk, but from them workings have been driven in order to follow the line of flint nodules, to obtain which was evidently the object of these excavations. Sections of some of these pits have been exposed along the line of the railway-cutting, and here and there openings may be seen which communicate with the old galleries, whilst on the surface of the plateau itself the situa-

tion of the mouths of these ancient pits may here and there be traced. The old hollows are now filled up with quantities of *débris*, masses of chalk-rock, broken and worked flints, together with earth and sand, and mingled with these materials have been found the bones of a considerable number of animals formerly inhabiting the neighbourhood, such as the deer, elk, goat, short-horned ox, badger, polecat, otter, dog, cat, brown bear, hedgehog, hare, and rabbit, besides a few human bones and fragments of coarse pottery bearing no traces of having been thrown on a wheel of any kind. Many of the antlers of the deer have evidently been made use of as hammers or picks.

But it is not in these old workings alone that implements are obtained; lying upon the surface, or turned up in the course of agricultural operations, as well as in the thick talus of *débris* along the edge of the plateau between Spiennes and the railway, large numbers of worked flints have at different times been found. These implements are all made of the local grey-coloured chalk flint, and are met with in every stage of manufacture. Many of the specimens are most carefully chipped into shape; yet, well made as they are, none of them present the wonderfully-elaborated forms and the delicacy of the Neolithic weapons of the Danish tumuli, and they probably belonged to an earlier stage of the Prehistoric period, and were made by a less highly cultured people. Another point to be observed is that polished implements are very rarely met with at Spiennes; and it has been surmised, with much probability, that the makers of these implements were not in the habit of polishing them, that they sold or bartered them in the rough form, and that the buyer would, if he pleased, spend his time in putting on that polish characteristic of the Prehistoric or Neolithic age, but which was, perhaps, after all, a matter of "individual luxury."

With regard to the forms of the Spiennes implements we find a considerable variety of both small and large. There are, first, the large nuclei from which were struck flakes, to be fashioned by more delicate chipping into knives, scrapers, and arrow-heads. Many of the long narrow flakes, as well as the broader flat ones so common wherever implements occur in any quantity, are picked up on the surface of the fields. The nuclei themselves are often elaborated into "*hâches*" or axes, often called "*celts*," of various shapes. Some of the nuclei (figs. 1 and 2) are somewhat boat-shaped, with flakes struck off more or less at right angles to the keel, whilst others are longitudinally flaked. Smaller nuclei (fig. 3) are found pyramidally fractured; and some of these latter, as well as



Rough Diagram of the Spiennes Beds. Cf. A. Briart, etc., "Rapport."

- A Brick earth.
- B Sandy loam "ergeron."
- c Sandy beds.
- D Deposit of angular and subangular flints.
- E Chalk.
- a, a, a, "Prehistoric" pits.



Fig. 1.— $\frac{1}{2}$

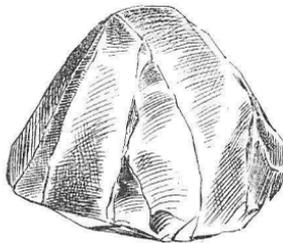


Fig. 3.— $\frac{1}{2}$.

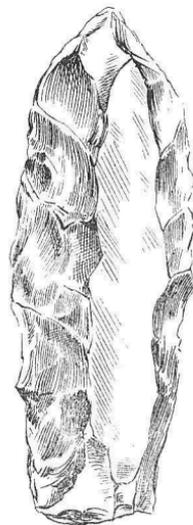


Fig. 2.— $\frac{1}{2}$.



Fig 4. - $\frac{1}{3}$.



Fig. 5. - $\frac{1}{3}$.

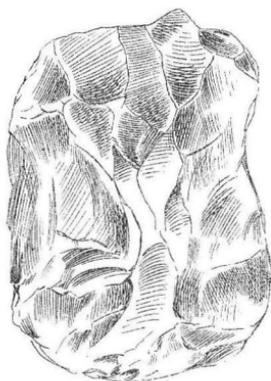


Fig. 6. - $\frac{1}{3}$.

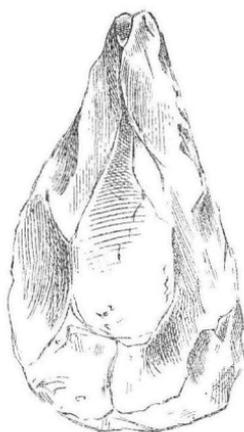


Fig. 7. - $\frac{1}{3}$.



Fig. 8. - $\frac{1}{3}$.



Fig. 9.— $\frac{1}{2}$.



Fig. 10.— $\frac{1}{2}$.



Fig. 13.— $\frac{1}{2}$.

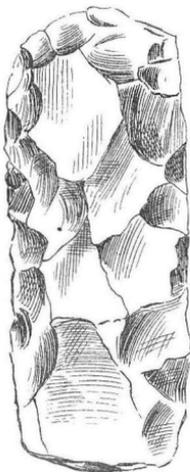


Fig. 11.— $\frac{1}{2}$.



Fig. 12.— $\frac{1}{2}$.



Fig. 14.— $\frac{1}{2}$.

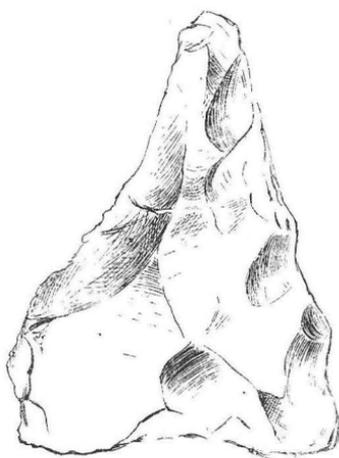


Fig. 15.— $\frac{1}{2}$.

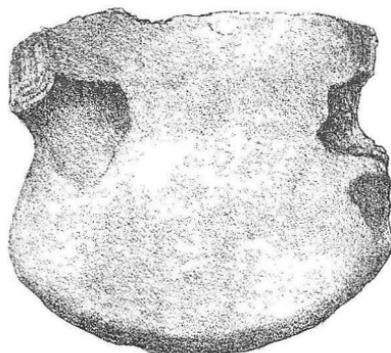


Fig. 18.— $\frac{1}{2}$.



Fig. 16.— $\frac{1}{2}$.



Fig. 17.— $\frac{1}{2}$.

large and small rounded masses, were evidently used as hammers, and still bear marks of rough service on their bruised faces; many of the larger elongated forms served the purpose of hammers likewise, as is shown by their crushed and battered sides. The large flints were worked into "hâches," which are often more or less oval or almond-shaped, either end of which might have been used (figs. 4, 5, 11, 16), whilst there are a few which bear a remarkable resemblance to the river-gravel forms, broad at one end and pointed at the other (fig. 7), and it has been questioned whether these Neolithic implements may not have had the narrow extremity in use, as appears to have been the case with the earlier weapons; the general rule, however, apparently being that the implements of this sort were, during the Neolithic age, sharpened at their broad end, whilst, in the Palæolithic, the point of the implement was used. The forms of the axe-like tools or weapons present us with several varieties, some (as fig. 8) being long and narrow, others (as figs. 9, 12) are broadened at the base, and are very similar to some of the Danish axes from the shell mounds. Large and small scrapers are plentiful, presenting, however, no special features, but long lance-head-like flakes (fig. 10) occur, some of which are not only carefully chipped on every side, but have been found also partially polished. These, however, appear to have been made from an already-polished celt, which was, probably, considered too precious to waste. Such smaller implements, fashioned out of broken polished ones, are not uncommon, and specimens are tolerably abundant in the ancient camp of Hastedon, near Namur, where barbed arrow-heads are also occasionally obtained, and are "characteristic of this stage of human culture" (Dupont). The polished celts or "hâches" found at Spiennes are very similar to those met with elsewhere. Fig. 18 represents a somewhat curious short form, notched at the sides in order to afford a firm hold for the ligature binding it to a shaft. Fig. 17 is a broken portion of a larger implement which has been partly polished, or, perhaps, has been chipped subsequently to its first use as a polished axe.

Another form of implement is found at Spiennes which is peculiar, namely, a rather large and flat triangular flake, which has been worked to a point at one of its angles. It was most likely used as a boring-tool.

These are the chief implements which appear to have been made in this primitive factory. That it must have been long established, during a tolerably settled period, is shown by the enormous number of tools and weapons still found on

its site; and there is also no trace of anything like protective works, such as are seen around the camps of other parts of Belgium, as, for instance, that of Hastedon, previously referred to.

The Spiennes flints are easily recognised when met with elsewhere, the grey colour of the flint contrasting with the yellowish stone of other localities, is one feature; and the surface-found implements are also incrustated with a white "patine," which is very generally discoloured with ferruginous stains along the angles of their faces,—stains probably contracted through the friction of the iron of ploughs, and of other agricultural tools used in the fields.

Far and wide over Belgium we frequently come across these Spiennes flints; in the Ardennes, in Flanders, as well as in many places nearer to the ancient factory itself, implements are found which must have been brought thence.

An interesting question arises in connexion with the Pre-historic implements. We have noticed already how, in lower portions of the series of beds in which they are found, the tools of Palæolithic man, the contemporary of the extinct Pleistocene fauna occur. Is M. Dupont right in supposing that there has been a direct derivation the one from the other, and are these Neolithic forms but the more advanced efforts of the same race of men, and not, as seems to be generally thought the case, the workmanship of a totally distinct people? There is certainly a strange similarity in form between some of the Spiennes surface flints and those of the St. Acheul type which underlie them; whilst, upon the other hand, we have to face the almost total change in the fauna,—a change as distinctly shown in the Spiennes beds as elsewhere, and which must have involved a great change in climate, and probably also in the physical conditions of the country, through all of which, if the view under consideration is to be accepted, the hunters and fishermen of the Palæolithic age must have continued to flourish and make progress until at length they developed into the somewhat more settled race of Neolithic times, possessed of domestic cattle, and having various industries and arts previously unknown or unpractised by their ancestors; then, side by side with these are we to consider the cave men, of whom there are such abundant traces in Belgium, as well as elsewhere, to have been contemporaries of these dwellers in the valleys, but possibly of a different race? and is their apparently sudden extinction to be attributed, as M. Dupont suggests, to the attacks of the hardier valley tribes, by whom they were exterminated? Here, again, we have to face the difficulty

which arises from the fact that in the caves we find no gradual passage of the Pleistocene into the Prehistoric fauna, but a sharp line drawn, the few caves which yield traces of the presence of Neolithic man showing that marked and abrupt alteration in the fauna to which I have referred; if the development of human civilisation in north-western Europe, of which alone I am speaking, has been a continued and gradual progress of a tribe or tribes of men, more or less closely connected together, and unmarked by anything like a great ethnographical break, ought we not to find an equally gradual change in the fauna? Can such a gradual change be shown to exist? Is it not rather a generally noticeable fact that the disappearance of the Pleistocene forms and the incoming of their successors is, as I have already pointed out, apparently marked by a sort of hiatus, which is as yet not very well accounted for, but which may perhaps with some reason be attributed, at any rate in part, to changes in the climate, closely connected with changes which have taken place in the physical geography of this part of the earth?

What light, if any, do such discoveries as those which we have been describing throw upon the question of the antiquity and primitive condition of the human race? As to man's origin and first appearance on earth science can as yet tell us little or nothing,—can record nothing after all but guesses, more or less plausible. All these discoveries of implements, whether in this or the neighbouring countries of north-western Europe, only give us a glimpse of the early condition of man in this particular quarter of the globe; and, however, far back in time we may be carried, we must not shut our eyes to the fact that we must go yet further back would we reach the age when the men of the river valleys and caves made their first appearance in the world, for no one, I suppose, would now hold the opinion that this race, which once inhabited Europe, originated in the localities in which their relics are now found: doubtless they were immigrants from some more distant region, only arriving in Europe after a long period of wandering; like their successors, may we not reasonably think that they formed one of, perhaps, the very earliest of those successive waves of migration, the more recent of which are recorded in traditions and history, migrations westwards from the cradle of the race in the East?

Whether there ever was a direct point of contact between Palæolithic and Neolithic man at any given place or time we cannot as yet say. At present all the discoveries made appear

to bear witness to that great break in time between the two already alluded to; to use a geological expression, no well-defined passage-beds are known, and Neolithic man appears as a new and strange race coming in after the disappearance, account for it as we may, of his Palæolithic forerunners. The Abbé Hamard, in his recently-published "Age de la Pierre, &c.," suggests that the Neolithic race formed the first incoming of the Aryans in Europe. This view, however, is altogether in opposition to that which has been advocated by Professor Boyd Dawkins and other authorities who consider the Neolithic population to have been a Non-Aryan race allied to the dark-skinned dolicho-cephalic Basques and other cognate peoples yet existing, whilst the Aryan race would be represented by the brachycephalic Celts.

Another very interesting question is whether these early men of Europe were always in the condition in which they appear to have been when living in this part of the world. If we may look upon them as offshoots from the parent stem of humanity, had their ancestors no higher civilisation than that of which they appear to have been possessors? Were the stone axes and knives the typical implements of the race when it originated, or were these wanderers reduced by isolation and privation to the state of barbarism in which they seem to have lived? Who shall say? It is a difficult matter also to determine whence the Neolithic stage of human progress originated. Polished implements are said to be very seldom met with in Asia Minor, and the makers of this type of implement do not seem to have entered Europe by this route. The same also is said of Egypt. The fact is, we know as yet far too little of the Prehistoric antiquities of the East, and more especially of that part of the Asiatic continent, which seems, as far as is at present known, to have been the cradle of mankind, and our discoveries in Europe, valuable in themselves as they are, really throw very little light upon the original condition of the human race; and it is quite possible that those facts of Prehistoric archæology which hold good for this quarter of the globe, may not prove equally true for all other parts of the world. At the same time it must be admitted that implements of stone of various sorts do appear to have been in use amongst men in all lands where man has lived, and that in all probability the general history of the race has been one of general progress in civilisation, but a progress broken from time to time through various causes by relapses or falls into a more or less barbarous state.

The CHAIRMAN (Mr. H. Cadman Jones).—I am sure I have the permission of all present to return the thanks of this meeting to Mr. Mello for his interesting paper. (Applause.) It opens up a class of deeply interesting subjects on which, however, in spite of all Mr. Mello has done, I am afraid we must await still further information before we can arrive at any practical conclusion. I have now to ask any who have remarks to make upon the paper to address the meeting.

Mr. S. R. PATTISON, F.G.S.—I think we ought not to allow the valuable conclusions put before us by Mr. Mello to pass without due acknowledgment of the masterful way in which they have been presented to us. The paper is one which is well worth dwelling upon, for it is extraordinarily complete, both in its facts and suggestions, and leaves very little to be done, except to study it. What the fruits of that study may be, we are hardly now in a position to estimate. As our Chairman has said, we have hardly sufficient facts, either in this paper or from other authorities, to enable us to furnish anything like a general theory. Of course, such a collection as we have on the table before us puts an end to any objections that have been made to the validity of flint implements. Whatever may be said as to particular attempts made by quarrymen, or even by *savans*, to impose upon their neighbours, it is impossible to maintain any such hypothesis here. We see before us implements of a manufacture quite as obvious in their character as if we had been in the factory and had actually seen them in the process of formation. Their variety is as remarkable as the state in which they are individually presented to us. It is clear that they were formed for the purpose of administering to various human wants, and that those who used them did not obtain them merely for the purpose of satisfying any immediate or urgent requirements, such as those of the chase or of war, but that they were evidently used in a state of society which was then fixed and settled, and which exhibited that variety of wants which arises out of an aggregation of men and their families in one particular locality. But although this collection puts an end to any doubt as to the genuineness of the implements, it fails to introduce any new fact in relation to the great mystery which surrounds the origin of palæolithic implements. It does not inform us by whom they were used, or when. They are said to underlie the later or neolithic implements, and at the same time to be unconnected with them; therefore, a dark mystery remains for the investigation of ourselves and others in the present and in future ages. It does not appear at all probable that this dark mystery will be very easily solved, for there have been a great many researches made into the subject, and very little progress in arriving at conclusions respecting it. Mr. Mello, in his very able remarks, has shown that we cannot say there was anything like a transition from the palæolithic implements into the later forms. The implements which surround the palæolithic fauna are quite different from those which surround the newer forms of the neolithic period. There is a vast difference between the implements of the mammoth age and those of the higher reindeer period. Those who study these two successions of life will be convinced that some

considerable period must have elapsed before the great change thus noted took place. Yet that time, although considerable, need not be indefinitely great, nor even so large as it is sometimes assumed to be, in order to account for the break Mr. Mello supposes. We find that the palæolithic period comes to a sudden stop as far as we at present know, and that these palæolithic implements also come to a sudden end. This break, accompanied by the physical changes which are evident, must have required time; but I do not know that it required a very great amount of time. It would, however, be a time that could be measured by centuries. I do not assume it to have required anything like a thousand years. It may certainly, have involved such a period; but it does not necessarily require it. There is also another point which these implements bring before us. It may be considered pretty well established that the newer implements belong to the beginning of an age which practically comes down to historic time. The implements of this class before us are neolithic, and are similar to those found in the British islands and other localities. They may, from this point of view, be said to connect themselves in some measure with the known monuments of history,—I will not say with quite modern history; but still, with history that may be termed modern, as compared with geological periods. We do, therefore, attain an advance of knowledge by the discovery of such implements as these, especially when they are found on so extensive a scale, and are brought before us in so admirable a way. We cannot be too loud in expressing the obligations of this Institute, and of all who are concerned in the elucidation of so interesting a subject, to Mr. Mello for the able manner in which he has been good enough to place his conclusions before us. (Applause.)

Mr. E. CHARLESWORTH, F.G.S. (a Visitor).—I feel very grateful for the invitation to be here this evening, as it has enabled me to hear the very able paper read by Mr. Mello. My own studies have been directed, not so much to the evidences of human handiwork in the early history of mankind on this planet, as to the faunas which have accompanied these implements; but, at the same time, I think it impossible to study the ancient fauna of the globe, as evidenced in what are called pleistocene times, without feeling the deepest interest in the great question so ably brought before us to-night. One of the lessons, and a very important one, we ought to draw from the history of this subject, and the connexion between these human evidences and the mammoth, is, that nothing which has been brought before the scientific and intellectual world, which for a time may seem to be utterly incredible, is therefore to be scouted as utterly false. Mr. Frere, a gentleman who lived in the county of Norfolk, nearly a hundred years ago, laid a paper before the Royal Society, in which he stated that he had found at Holme, or Hoxne—a village not far from Thetford,—unquestionable human implements in association with the remains of the mammoth, and clearly proving that that animal and man were contemporaneous. The Royal Society paid Mr. Frere the compliment of publishing his paper; but the learned world of that day discarded and altogether scouted his conclusion as utterly unworthy of further investigation. For

nearly half a century that paper remained in the volume of the *Transactions of the Royal Society* without being thought worthy of scientific discussion. But after the lapse of something like forty or fifty years light suddenly broke in upon the truth of that theory, of which the research made by Mr. Frere, who had long gone to his rest, was the forerunner ; for the evidence he had furnished was confirmed by M. Boucher de Perthes and other workers in the deposits of the pleistocene period. There are one or two points on which I should like to question Mr. Mello. In the first place, I would ask him to explain, if he can, the uses of these implements. Mr. Mello has referred to the beautiful finish of some of those that have been brought from Denmark. I may state that I was one of the pioneers in the formation of the Anthropological Society, and was present at one of its meetings a few years ago. On that occasion every article of furniture in the room was covered with a magnificent collection of flints from Denmark, and what most astonished me was that some of the implements, which were six, seven, and eight inches in length, were most beautifully, symmetrically, and even exquisitely finished ; but at the same time so slender in their make that I should have thought that to have put them to any use requiring considerable mechanical effort would have had the effect of demolishing them ; that is to say, that to have speared an animal with any one of them would have broken it to pieces at once. This has always been to me a great difficulty ; and the same remark will apply to some of the arrow-heads. I have had great practice in what may be termed flint-chipping, though I never attempted to make implements or flake knives ; but, being familiar with the peculiar brittleness of flint, it is to me a great puzzle to realise how these long slender implements could have been used either in war or in the chase, without being broken : that is one question on which I hope Mr. Mello will be able to satisfy my curiosity. Another question is this:—How is it that the early, or palæolithic, implements found in the gravel beds have their edges sharp and little worn, while the gravel itself, consisting of flints derived from the chalk, is generally presented to us in the form of boulders and pebbles, and not in the form of the original flint as seen in the chalk ? In fact, we see it only in the form of rolled pebbles, or shingle, such as we find on the sea beach. But when we come upon these flint implements, instead of finding that they have been rolled into pebbles, we see them with their edges clear and sharp, and with no evidence of bouldering. I do not mean to say that no such thing has ever been seen as a bouldered implement in the flint gravels ; but the implements generally are such as I have described. I remember having gone with Mr. Fitch, of Norwich, to Brandon, and although we did not obtain any on that visit, Mr. Fitch had previously procured from Brandon, at different times, a magnificent series of flint implements ; not one of which presented any signs of bouldering. How, I ask, is this to be explained ? There is another point as to which Mr. Mello, will, perhaps, say a word ; I allude to the question of forgeries. When it was first discovered that there really was some evidence of man having been contemporaneous with the mammoth, I was so unfortunate as to fall in with that quite

too clever individual, commonly known as Flint Jack, and I may add that I "paid the piper" for my acquaintance with him,—and pretty smartly too. (Laughter.) I did not suffer much in pocket myself, but he certainly did astonish my rather weak nerves, by showing me a number of fish-hooks, combs, and knives, which he said he had picked up on the Yorkshire wolds. (Laughter.) I communicated with a gentleman whose name I have no doubt is well known to many here,—Mr. Mayer, of Liverpool,—telling him what had been discovered in Yorkshire, at a place not far from Whitby, and that a large collection was to be had for £50. Mr. Mayer was so excited by the intelligence that he started off at once for Yorkshire, paid the £50, and brought away a batch of "Flint Jack's" work, in which I do not say there was nothing genuine, although probably about four-fifths were forgeries. This is one reason why I have felt a little distaste for the collection and study of these implements. Perhaps Mr. Mello will tell us whether he is able, under all the circumstances, to say whether what is put before him is a genuine article or a forgery. (Applause.)

Rev. F. S. COOK, D.D.—Perhaps Mr. Mello will be kind enough to state the depth of the shafts at Spiennes, and whether they are sinkings of a well-like character, or are merely large, wide pits; because, if they are of well-like formation, one would naturally inquire with what implements the wells were sunk.

Mr. W. P. JAMES.—I merely wish to say, on behalf of those of the outside public who desire to know something about these mysterious questions on the borderland between geology and archæology, that there are certain points on which we should like to have a little more light thrown than has been the case up to the present time. I may allude for instance to the use of the word "prehistoric." Prehistoric, as far as the ordinary interpretation of the word goes, means previous to history; but then we find that the historic records themselves vary in date, and thus we become confused in our chronology. I would remark, by way of illustration, that "prehistoric," in regard to Egypt, would mean a very different thing from "prehistoric" in regard to Gaul or Britain. Before the beginning of history in Egypt would mean about 3,000 or 2,500 years before Christ; whereas, in reference to Britain, it would mean only 300 years before Christ. I do not think that those who use the word "prehistoric" fully realise its extreme vagueness. We are, of course, most intimately connected with our own island. Let us take it as an example. The first time it is mentioned for certain is in the *Travels of Pytheas*, a Greek, whose book was long deemed fictitious, but is now known to be genuine. That traveller landed in Britain 300 years before Christ, and described what he saw. It appears that there were Celts here at that date; and we cannot go further back by means of our records, or by an appeal to material monuments, such as those of Egypt. The glory of Egypt had all passed away before the historic period had begun in Britain; in other words, all the Celtic flints may be of later date than the papyrus rolls of the early dynasties. I do not pretend to understand this subject in its

technical aspect ; but I believe there is a general feeling among the unscientific public that conclusions are drawn with very great freedom with regard to flint implements, and especially with reference to the pushing back through them of man's existence on the face of the earth. When the word "prehistoric" is used, it is assumed that it denotes great antiquity ; whereas it may refer to a stage in one nation contemporaneous with the historic period of another, and in reality quite modern. I am rather sorry that, in his very able paper, the author has used such extreme caution in his inferences and conclusions with regard to the points of contact between archæology and geology, because it is in them that the main interest on the part of the public lies. As to the implements themselves, we cannot, without some amount of training, appreciate their various stages of elaboration ; but we are greatly interested in knowing at what point we may join these things on to historic facts, so as in some degree to approximate chronologically the prehistoric to the historic period of human existence in Great Britain and Gaul. Are we to suppose that our prehistoric ancestors lived on the very verge of European civilisation of which the western parts of France and Great Britain were the outlying provinces ; and that the Esquimaux of the present day are to be considered as in a similar state because they still use these flint implements ? This subject is apt to be discussed with an indefiniteness and vagueness that seems hardly ever to lead, or to be likely to lead, to any useful conclusion. If Mr. Mello is able to dispel some of this vagueness, there are many in this room who would be much obliged to him. (Hear, hear.)

Mr. J. RENDALL.—I simply rise to ask a question. I should like to know how it is that, among the large number of these implements which are produced here and elsewhere, so few present any indication of the way in which they have been used ? Nothing would appear to be more natural than that an uncivilised race, not possessing or knowing the use of metals, should convert flints into such implements as they might require for the various purposes of life. But when we look at the flints on this table, and at those which have so often been produced before, and bear in mind that they are all specially selected specimens, we cannot fail to notice how few there are of the entire number on which any apparent marks of fitness for their intended use are visible ? Their adaptation to the purposes of arrows has been already mentioned, and we all know that such things, when projected with more or less force, would be of use, though they may not exhibit much inherent strength. But with regard to the other flints now on this table there is scarcely one, as it seems to me, which a savage, having sense enough to make it, would not presumably have fashioned into a more useful shape. There is only one which exhibits what I should have thought every one would have displayed. I allude to that which is marked "No. 18" in the illustrations at the end of the paper. This has a handle by which it might be fastened to a shaft. If a man had chipped a flint for use as a chisel, would he not have either made dents in it, or otherwise so shaped it, that it might be fastened to a handle ? There are one or two of these flints that might have been used without handles,—those for

instance which the lecturer has described as borers. There are some that might have been employed as scrapers ; but most of the flints, if put in a hole for use as chisels or for any other purpose, would soon slip out. They seem to me, for the most part, nearly useless in the shape they bear. I would ask Mr. Mello if he can suggest any way in which the greater part of them could be fixed ? If they were to be used for warfare, or as a defence against wild animals, how is it that they are not so shaped as to make them likely to prove useful ?

Mr. S. R. PATTISON, F.G.S.—May I be allowed to state, with regard to some of these implements (pointing out the objects referred to), that I have seen hundreds of similar tools in the Valley of the Connecticut where they have long been in use for hoeing corn. They are attached by thongs of leather to handles which are not very stout, but are rather long, and allow a little elasticity, and with such implements maize or any other crop may be hoed. They would make very good garden implements—quite as good as our own hoe. In this shape the hoe has long been made and used by the Indians, and is so used still. Numbers of the hoe-heads are left scattered about the ground. They are not considered of any value, and are not removed from place to place, but are left, when done with, in the fields. I might go through the entire list and vindicate their several uses ; but that would take up too much time. I may say with regard to another point which has been mentioned, that in the cromlechs found in Brittany there are one or two drawings on the inside of the inner granite stones of the great graves, which show the handles actually attached, sometimes by putting the implement into a split piece of wood and tying it on. I think that this has happened in the case of some of these tools.

Mr. R. J. HAMMOND.—I should like to know whether Mr. Mello is of opinion that the tribes who made these implements were ascending, or retrograding in the scale of civilisation ? Some say the proofs we have are in favour of the supposition that they were ascending ? Is it impossible, if they were going backward, that some of the remains showing their previous advance would be found ? Have indications been discovered that they had been in a higher stage of civilisation ?

Mr. J. M. MELLO, F.G.S.—I am afraid I shall not be able to reply to all the questions that have been put to me ; but there are some I will endeavour to answer as plainly and concisely as possible. One speaker asked : What is the thickness of the various sections in which the pits at Spiennes occur ? They vary from about 3 feet to 30 feet. There is one typical section given by M. Briart, who says that these pits are vertical, narrow, and circular in section, and from rather over half a mètre in diameter, up to very nearly a yard ; that they are often slightly enlarged towards the surface and also at their base in the chalk. All of them are filled up, as I have said, by blocks ; and any one who cares to look at the drawings given of one or two of them in M. Briart's pamphlet will see that some of these pits were very large in extent, and quite funnel shaped at their mouths, while at the base they run underground in the form of regular galleries,

sometimes in two directions ; they vary, however, very much in form. Mr. Charlesworth has asked a question as to the highly elaborated Danish implements. It certainly has been a puzzle to define what use could be made of some of the more delicate spear-heads : I have some, but have not brought them here to show you. They are so delicate in form that a very small amount of violence would suffice to break them ; but at the same time they might, when fitted as spears, be used as very formidable weapons against naked flesh. I cannot say, however, that they were ever used in battle against naked savages ; it is of course doubtful whether in such a climate as ours they would have had to encounter only naked flesh. I would suggest whether it is not possible that some of the highly elaborated implements may have been intended simply for ornamental or state purposes, and perhaps, for interment with the dead. I believe that some of the more elaborate New Zealand weapons of the present day are merely state implements—I allude to some of the finely-edged tools found in that country ; but of this I am not quite certain. With regard to what has been said about "Flint Jack" and the forgery of flint implements, I may say that I have also had experience of what "Flint Jack" could do in this way. I saw a good deal of that individual a few years before his death, and he made a large number of implements for me. I remember that on one occasion I gave him a soda-water bottle, which he broke up and made into some very beautiful arrow-heads and other implements. He also manufactured, out of some of the iron slag of the district, some forgeries which any one not acquainted with the appearance of the genuine articles would have said must have come from the obsidian district of Mexico. No one, however, who is practically acquainted with the true implements is likely to be taken in by forgeries, however skilfully manipulated. The forger cannot give what is called the patin, which is the white surface produced on the flint by age and exposure. These implements from Spiennes could not have been forged, because no forger could produce the white surface they possess. If you were to break one you would find that the white film is a mere coating. Very small and thin implements might, however, be forged by chipping off the patin from highly weathered flints, in which the process has gone some depth. In some cases this extends to nearly half an inch, so that it would not be difficult to get a piece large enough to make a small arrow-head. A large implement could not, however, be obtained in this way. I have one or two forgeries of implements from St. Acheul : they were made by some of the most celebrated forgers of that district, but it is found that in the old flints there is a high gloss which cannot be found on the recently fractured specimens, the latter being of a dull appearance and not at all glossy. There are, however, some kinds of flint out of which implements might be forged so as to deceive connoisseurs, the grey flints from which they could be made being dull even after having been for a long time exposed to the air. But as a rule, the forgery has a totally different surface from that presented by the genuine implement, and the signs of weather-staining, such as are seen in the implements on the table, cannot be produced by forgers. Another question

put by Mr. Charlesworth, as to how it is that the river-gravel types do not appear to have been more rolled and worn than they really are; I am hardly able to answer. Some of these Brandon implements have the appearance of having been rolled; the specimen in my hand exhibits a good deal of wear and tear: but a great many of them—especially one which I have from St. Acheul—are very sharp at the edges. But we must remember that the gravels must have been rolled about for ages before the implements were dropped among them. I cannot say whether the ancient savages and hunters who used these tools and weapons had canoes. Perhaps, and more probably, they walked over the surface of the rivers when frozen, and some of the implements they may have dropped would have fallen through when a thaw came, and so have become mingled with the gravel, where they may not have been subjected to the same amount of rolling as the bulk of the stones forming the river-beds. I think I heard some one speak of drawing a distinction between the mammoth age and the reindeer period. I ought to remind that speaker that the neolithic period was not the reindeer period, and that the reindeer was contemporaneous with the mammoth. In the French caverns there are remains of what is called the reindeer period, which is sometimes spoken of by Mortillet and others, who, in allusion to the contents of some caves in the Dordogne, refer to the mammoth and reindeer periods; but both are palæolithic as regards man. The reindeer is a pleistocene animal, and there are two stages, at least, of the palæolithic age; but the reindeer became extinct in North-Western Europe before neolithic man made his appearance, as is shown by the fact that we never find reindeer remains along with neolithic implements. Among the characteristic animals of this period we have the rabbit, the short-horned ox (*bos longifrons*), the sheep, and other creatures that are never found with the mammoth, rhinoceros, reindeer, or any other of the pleistocene fauna. I have been asked by another speaker for a definition of the word "prehistoric." This is, of course, a term which may be used in a vague way. When it is employed by Sir John Lubbock in the title of his work on *Prehistoric Times*, it is intended to embrace the whole of the two periods, pleistocene and neolithic. In fact, it may be said to embrace, in his mode of applying it, the whole of that period of human existence which preceded the records of history. But I have used the word simply as a synonym for "neolithic." When I speak of "prehistoric times," or of "prehistoric implements," I make a distinction between the palæolithic implements and those of the neolithic age, as the palæolithic implements are never polished; while what I call "prehistoric" or "neolithic" implements are polished—not always, but in many cases. I forget who it was originated this restricted use of the word "prehistoric" as embracing the neolithic age, and also the bronze age by which it was followed; but Professor Boyd Dawkins employs it in this limited sense. Professor Dawkins likewise thinks that the pleistocene and palæolithic men, who were the contemporaries of the mammoth and other of the extinct fauna, were possibly the ancestors of the present race of Esquimaux; that the Esquimaux were

the descendants of the palæolithic men, who were driven, little by little, to the north. These are the principal questions that have been put to me; but there is one other to which I would refer. I was asked whether I could suggest how implements were used. We meet with some in the Swiss lake dwellings, which used to be fastened to a fragment of deer horn. The hollow part of the antler was made to hold the implement, and it was sometimes bound to a wooden holder. Others would be bound by a leathern thong, or by a fibre similar to that which the savages of Australia and other places use to fasten their weapons to the holders. Some of the scrapers found in the Swiss lake dwellings were inserted into horn holders, one portion being pointed and unbroken, and the other, which was intended for use, chipped and jagged. Some spear-shaped forms were probably fastened in another way. Sir John Lubbock, in *Prehistoric Times*, figures a spear-head which is, I think, now in use among the Australian tribes. It is bound to a long spear-handle. Also, in the Swiss lake dwellings, we find implements simply mounted in a horn or bone holder. They were just driven in and used, I suppose, as scrapers, though probably a good many of them were like a schoolboy's knife, and used for more purposes than one. (Applause.)

The meeting was then adjourned.

ORDINARY MEETING, APRIL 21, 1884.

H. CADMAN JONES, ESQ., M.A., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

MEMBERS :—T. C. Edwards, Esq., Yorkshire ; C. J. Lacy, Esq., London.

Also the presentation of the following work for the Library :—

“The Isle of Wight.” By Captain J. Brown. *From the Same.*

The following paper was then read by the Author :—

THE EVOLUTION OF THE PEARLY NAUTILUS.

By S. R. PATTISON, F.G.S.

IT is a bold, perhaps a rash thing, to question a biological conclusion publicly expressed by the present distinguished President of the Royal Society. But no one would be more ready than he to encourage the pursuit of truth, and in the interest of the latter I offer the following remarks on the subject of evolution, in opposition to statements and inductions expressed by Professor Huxley in the Rede Lecture delivered at Cambridge in the month of June last, and reported in *Nature* of June 21, 1883.

The President defines the term evolution to mean “that the different forms of animal life had not arisen independently of each other in the great sweep of past time, but that the one had proceeded from the other; and that that which had happened in the course of past ages had been analogous to that which takes place daily and hourly in the case of the individual; that is to say, that just as at the present day, in the course of individual development, the lower and simple forms, in virtue of the properties which were inherent in them, passed step by step by the establishment of small successive differences into the higher and more complicated forms, so in the case of past ages, that which constituted the stock of the whole ancestry had advanced grade by grade, in

steps by steps, until it had attained the degree of complexity which we see at the present day.”*

This clear statement of the proposition amounts to an assertion that all the differences between life-forms, ancient and modern, have arisen from time to time by virtue of “inherent properties.”

The eloquent lecturer then sets himself to prove that this hypothesis coincides with the actual life-history on the globe. The evidence on which he relies is, that of the animal inhabiting the shell of the pearly nautilus, as compared with the indications presented by fossil shells of the same general kind. He selects from among the ancient fossils, one called an orthoceratite, a perfectly straight form; he takes this and claims for it the distinction of having been the father and founder of the whole nautiloid tribe. He says that it first underwent a slight curvature and became the cyrtoceras; in course of time the curving and rolling up of successive individuals became gradually more and more complete, until it finally issued in the beautiful *Nautilus Pompilius* of the present seas. That the proposition may be more fully before you, I quote further from the report:—“Unquestionably, nautili were found as far back as the Upper Silurian age. Before that time there were no nautili, but there were shells of the orthoceratidæ—of which there were magnificent examples before him—which resembled those of the nautili in that they were chambered, siphoned, &c., with the last chamber of such a size that it obviously sheltered the body of the animal. He thought no one could doubt that the creatures which fabricated these still earlier shells were substantially similar to the nautili, although their shells were straight, just as a nautilus shell would be if it were pulled out from a helix into a cone. Then came the forms known as cyrtoceras, which were slightly curved. Along with these they had the other forms which were on the table, and in which the shell began to grow spiral. The next that came were forms of nautilus, which differed from the nautilus of to-day in that the septa were like watch-glasses, and that the whorls did not overlap one another. In the next series, belonging to the later palæozoic strata, the shell was closely coiled and the septa began to be a little wavy, and the whorls began to overlap one another. And this process was continued in later forms, down to that of the present day. Looking broadly at the main changes which the nautilus stock underwent, changes parallel with those which were followed by the

* Rede Lecture, *Nature*, June 21, 1883, p. 189.

individual nautilus in the course of its development, he considered that there could be no doubt that they were justified in the hypothesis that the causes at work were the same in both cases, and that the inherent faculty, or power, or whatever else it might be called, which determined the successive changes of the nautilus after it had been hatched, had been operative throughout the whole continuous series of existence of the genus from its earliest appearances in the later Silurian rock up to the present day."

This was his case for evolution, which he rested wholly upon arguments of the kind he had adduced.

Will it surprise you to be told, after this, that not only is the argument hypothetical, but the facts are hypothetical too? for in the British rocks, and presumably elsewhere, the orthoceras never turned into a cyrtoceras, for the simple and sufficient reason, that the latter actually preceded the former.

They both appear in the same geological day, the epoch of the upper Cambrian, but the cyrtoceras is the first in the field.* After their first appearances both subsist, fully formed and equipped for the campaign of life, both preserving their respective identities, quite distinct from each other, both subsequently become scarce, and disappear. Whilst they lived together side by side in the Silurian times, new genera and species were added to each until there came to be no less than 143 distinct creatures, going down from age to age in lineal descent belonging to the orthoceras group, and 369 belonging to the cyrtoceras, enjoying the same surroundings in every respect, but each species keeping to its own model.

Professor Huxley accounts for the multiplication and variety of these creatures by the hypothesis that the cyrtoceras is an orthoceras in the first instance curved by accident or by external conditions, that thenceforward this individual produced progeny similarly curved, and then similar causes produced like occurrences in succession until the thousand varieties of cephalopodous life thus arose, and what occurred in one group happened also in all, and hence the variety displayed throughout the animal kingdom. Now, whatever else may have been the true history of the origin of the great

* Salter's appendix: *Memoirs of Geol. Survey*, vol. iii., p. 358. "It is the earliest of the Cephalopods known, and it is not a little remarkable that the first species we meet with in ascending order should be—not orthoceras, which is the most diffused and persistent form, but a genus which, so far as we know, is only Silurian and Devonian."

decayed cephalopodous family, I hope to show you that this is not its true pedigree, that the straight orthoceras is not the root of title.

But the President has a right to say that he needed not to ground his argument on the evidence of British rocks alone, nor place it on so narrow a basis as the mere form of the shell. This must be granted. Subsequently to the delivery of his lecture, a most potent ally has come forward in the person of my friend Professor Alpheus Hyatt, the Curator of the Natural History Society of Boston, in Massachusetts, who has devoted all the powers of an acute intellect, large experience, and ample opportunity on both sides of the sea, to the investigation of this very subject, and who has just published, in the proceedings of the Boston Society, his adoption of evolutionary views and of the theory of Professor Huxley. Notwithstanding this, I will try to lay before you the reasons which, in my judgment, are decisive against the conclusions of these eminent men. In doing this, I shall have to trouble you with some dry details of geological, or rather palæontological facts regarding the succession of rocks, and of the life indicated by their fossil contents.

We have first to speak of the shells.

The nautilus is, as is well known, the sole living representative of a vast family of marine creatures, which flourished in the first palæontological ages, and are known to us in a fossil condition under various names. In the lowest strata the form called orthoceras prevailed, though, as we have shown, it does not appear first. In subsequent times the coiled ammonite is the prevailing form. The latter is so numerous in the rocks that its remains stand as the popular type of fossil life in general.

These creatures belong to the group of cephalopods, the highest form of animal life existing in marine shells. They derive their distinctive class-name from their having the feet placed in a ring round the mouth.

The commonest cephalopod now known to us is the cuttle-fish, which has an internal calcareous support; the most beautiful, externally, is the pearly nautilus before referred to. The nautilus has two pairs of gills, the cuttle-fish only one pair, and the whole assemblage is divided into two families possessing this difference,—the one called the dibranchiates, the other the tetrabranchiates. The former, the cuttle-fish kind, are the most numerous in the present seas; but in the ancient oceans the nautiloids prevailed, and formed really the leading feature in the life of the period, so far as we know. The London clay immediately beneath where we now stand contains

the shells of numerous species of true nautili, and so does the chalk beneath, whilst that, and the oolites lying next below, abound also in ammonite forms, and the still underlying rocks are thickly strewn with other members of the great tribe.

For the present investigation it is only necessary to dwell principally on two leading forms,—the old straight fossil orthoceras, and its companion called the cyrtoceras, differing from the former in being slightly curved.

The chief home of the orthoceras and cyrtoceras is in the Silurian, both are also found in the Devonian. They begin to be supplanted by other genera in the carboniferous limestone, abound in profusion, in the guise of ammonites, in the Jurassic; rapidly decline and become feeble in the tertiaries; and, save as to the nautilus, are extinct in the present world.

The shell of the orthoceras appears to have resembled that of the pearly nautilus in that it was divided by shelly partitions (called septa) into numerous chambers, connected only by a tube called the siphuncle, running through the septa, and terminating in the body of the animal. The latter evidently lived in the last and largest chamber, the other chambers acting as floats, the siphuncle keeping the chambers in a living condition. The shell of the present nautilus is always completely and elegantly curved, whereas that of the orthoceras is always straight. There are other differences, but the argument of the Rede Lecture is founded on this one distinction. It assumes that the straight form became casually curved in some one individual, whence sprang other similarly curved creatures now named cyrtoceras. A multitude of such casual variations, becoming fixed from generation to generation, constituted the cyrtoceras tribe, whilst some other casual adventure or adaptive habit produced further coiling up and corresponding changes, which resulted in the populous races of ammonites and the persistent nautilus.

We may incidentally remark that both shells, thus claimed as parent and child, have ornaments in the shape of furrows and lines, probably with colour (of which some traces have been seen), thus displaying similar regularity and beauty to the features possessed by their modern representatives. It serves still further to connect the present with the remote past, to learn that the shells of these fossil orthoceratidæ afford, in some instances, marks of having been broken during life, and repaired again by the animal. The very dawn of life on the earth is chequered by ruin and restoration. The cephalopods were the monarchs of the sea, and, indeed, of creation, for there are no remains of fishes, and we have no trace, in the earliest formations of any land animal. There are

orthoceratites upwards of 10 feet long. Their function appears to have been to keep the seas clear of superfluous animal matter. No one who has looked a cuttle-fish in the face would wish to cope with an enlarged addition of the uncanny creature, however beautiful its shell might be.

Having now described what we are to look for in past life, I must briefly refer a little more fully to the places where we are to make our search.

The lowest group of sedimentary rocks is called the Laurentian, largely developed in Canada, where it was first distinguished and named. This is estimated at 30,000 feet thick, and consists of gneiss, quartz-rock, and limestone, with occasional beds of graphite. The old granitic rocks of the West of Scotland, and the hard, dark rocks of Skye, are supposed to belong to this series. No trace of organic life has been seen in any part of this vast formation, with the single exception of the masses of eozoon, a foraminifer developed and elucidated by the happy labours of Dr. Dawson, of Montreal. Next to the Laurentian, lying upon it, comes a series of coarse, hard rocks, called the Huronian, in which no fossils have yet been found. The reason for placing the Huronian over the Laurentian is that the former lies unconformably on the upturned edges of the latter. Next in the ascending scale is the series in which our best slates are found in Wales, and hence called the Cambrian. These show, in some of their layers, very numerous remains of small marine animals, including a bivalve mollusc called *Lingula*. The *Lingula* zone is the equivalent of the Potsdam sandstone of North America, and of the primordial zone in Bohemia. The Skiddaw slates in Cumberland, and the Quebec group and calciferous slates of New York county are also on this horizon. The assemblage of organic life shown by these rocks displays the well-known curious crustaceans as called trilobites, with great numbers of graptolites, and some shells and sea-urchins but no cephalopods. Next in our upward course occurs a series of slaty rocks, named, from the place where they were first distinguished, the Tremadoc slates. These are on the upper Cambrian level, and contain a distinct collection of animated life, still marine only, and numbering, for the first time, cephalopods. Amongst these latter the bent form, *cyrtoceras*, occurs in the lowest beds, and the straight form, the *orthoceras*, over them, as may be seen, at Tremadoc, in North Wales.

Dr. Blake, the chronicler of the British cephalopods, writes:—"The first to appear is *cyrtoceras*, represented by *C. præcox*, though followed in the uppermost division of the

same rocks by *Orthoceras sericæum*. It has been thought remarkable that the less simple forms should precede the straight orthoceras; but the history of discovery shows that we can place but little trust in such an isolated fact as it is liable any day to be reversed."* Although, therefore, we might be able to claim for the cyrtoceras the distinction of being the primal cephalopod, and so show the impossibility of its having, as the President thought, descended from orthoceras, yet we decline to snap a verdict in this manner, lest it should be reversed on a new trial by the production of further evidence. We prefer to open the question and look at all possible evidence in support of the Professor's proposition.

Those who have to plead for evolution from the orthoceras do not affirm that this was the first creature of its kind, but the first creature of present kinds. They assume the existence of some earlier stage of life (of which, however, we have no evidence whatever), in which there existed earlier and simpler creatures whence either cyrtoceras or orthoceras proceeded, or both. Palæontologists know nothing of this. Mr. Hyatt admits that "in all the larger series of shell-bearing cephalopods the nautiloid shells belong to several distinct series," which, he states, "arose independently from straight cones through the intermediate graded series of arcuate and gyroceran or clearly coiled forms." He lays it down that the ammonites are evidently descendants of the nautilinidæ, and that the evidence is strong that the whole order arose from a single organic centre, the nautilus of the Silurian, or the orthoceras of the Cambrian. But how is this statement consistent with the conclusion of the same writer,† that the study of the tetrabranchs teaches us that, "when we first meet with reliable records of their existence, they are already a highly organised and very varied type, with many genera." They must have had ancestors now unknown to us, "but at present the search for the ancestral form is, nevertheless, not hopeful."

When you visit the grand, capacious Natural History Museum at South Kensington, you find, in the department devoted to molluscan fossil remains, one room,—the first,—appropriated to cephalopods. The first cases on the right, as you enter, contain the orthoceratites, and next to these are the cyrtoceratites. This relative position is not indicative of order in time, but of apparent simplicity of form. The distinction between the two forms is immediately perceived. The cephalopod room is well worthy of study in the light of the early appearance of these creatures on the earth, and their apparently

* Blake, *British Cephalopoda*, p. 238.

† *Science*, Feb. 1, p. 127.

sudden and general diffusion. Mr. Hyatt, in his work of careful analysis, describes and names 137 genera of the tetrabran-
 chiates, all well marked by permanent transmissible and trans-
 mitted differences. The greater number of these arose during
 the very early period of the life of the globe. It is, of course,
 conceivable that all these were the results of a natural law,
 seated in the first and simplest specimen; nor, of course, would
 this conclusion be at variance with the strictest theism. We
 might believe that the curved form issued from the straight,
 and the coiled-up creatures with fringed partitions grew out
 of the simple ones with even septa; and, again, that the
 forms uncoiled and ultimately again became straight as in the
 bactrites of the chalk. But we have no instance whatever, in
 the whole field of nature elsewhere, of any such series of
 changes. Time works wonders, it is said, but does not work
 wonders *per se*.

On further inquiry into the relative numbers of the two
 forms, taking the "painful" labours of good Dr. Bigsby as
 our guide, we learn that there are in the Silurian rocks 317
 species of the extinct cyrtoceras, and 143 of orthoceras. In
 the succeeding formation, the carboniferous, there are regis-
 tered 24 of cyrtoceras and 114 of orthoceras.*

We have thus the contemporaneous existence, through
 untold ages, of these two typical forms of life, remarkably
 alike, yet also actually different; each species resembling the
 other accurately, in all but the minute characters which sepa-
 rated them; each genus and species pursuing its own way
 without change from age to age in the presence of countless
 individuals of other genera and species living under precisely
 similar conditions, yet the two families, the orthoceras and
 cyrtoceras, ever remain distinct; no more changed by their
 environments than Egyptian mummies in their grim com-
 panionship, each enfolded in its own multitudinous wrappings.
 As Professor Hall, of Albany (who has probably seen more of
 these fossils than any one else), said to me last summer, "An
 orthoceras was always an orthoceras and nothing else, and a
 cyrtoceras was always a cyrtoceras and nothing else."

I wish, therefore, to maintain that the one is not a variation
 from the other, but a distinct thing, so far as we have actual
 evidence; indeed, modern geology is largely based on the
 permanent or constant distinctions existing between organic
 fossils.

Prolonged experience has only strengthened the conclusion
 drawn by William Smith, the father of English geology,

* Bigsby's *Thesaurus: Siluricus*, 1860; *Devonico-carboniferous*, 1878.

nearly a century since, that strata may be identified by organic remains. Most of the species of the latter prevalent in one formation are peculiar to it, whilst some survive through two or more of the successive stages of the solid deposits of the earth; new forms come in at every stage; and, until some competent second cause can be established accounting for these new appearances, we must perforce call them creations. The similarity of the new forms to the old, and the harmony of the whole, oblige us to term it creation by law,—a law very similar to evolution, for the forms succeed each other with differences so slight, that, but for the permanency of the effects, they might be frequently assigned to casual variation. But the results appear to show that every step requires and displays some fresh adjustment, the exercise of a mind *ab extra*. What differences in organic life may be classed as mere modifications, and what may be deemed new departures, must be the subject of protracted observation, and perhaps of dispute, but the distinction is not the less real for this. The researches of Mr. Darwin, though not successful in piercing the mystery of the *modus operandi*, have yet taught us much concerning the limits of variability. They certainly have not established the fact of unlimited variability, which would be requisite for the maintenance of the theory of evolution.

Reverting to the main scope of the present argument, I have to state that, so far as we know, the cyrtoceras and the orthoceras were the first creatures of their class. Previously to their appearance, the rocks show the presence of molluscs of entirely different and lower type. It is not pretended that amongst the latter any ancestor of the cephalopods can be detected. It is certain, says the accomplished Monsieur Gaudry, that the extinct kinds had no influence whatever in the formation of their successors. In palæontology evolution subsists only as a mental conception; as we have seen, the two leading forms which are selected by the Rede lecturer, were present at the earliest life-period of which we have any trace of anything at all like them.

Of course, the differences in the form of the shell are simply indicative of differences in the contained animal. We have no difficulty in concluding that a constant transmissible difference in the form or curvature of the shell is the result of a similarly constant difference in the living animal.

One internal difference between cyrtoceras and orthoceras is in the usual position of the siphuncle, the tube which runs from the body of the animal backward through the chambers. In orthoceras, though not absolutely invariable, yet it is very nearly so, so much so as to be considered characteristic,

whereas in cyrtoceras the siphuncle is placed sometimes on the dorsal, sometimes in the ventral margin, "and in every conceivable position between these two points."*

Both the orthoceras and the cyrtoceras are nautiloids, and commence life alike in one respect, namely, with conical nuclei or ovisacs, as distinguished from the rounded ovisacs of the subsequent ammonites.

Professor Huxley would have us infer that the ammonite is a modified orthoceratite, but the present state of our knowledge does not confirm this. Monsieur Gaudry, one of the great masters in this science, when writing on the ovisacs, lays it down as follows:—"We must admit that this difference, shown so plainly in the upper Silurian epoch, is, in the present state of our knowledge, an argument of weight against the idea of linking together the whole creation."† Since the researches of Professor Hyatt this characteristic has lost some of its value; but, although he traced in one or more genera the existence of an ammonitoid nucleus, yet, in the vast majority of instances, the old radical difference obtains. As Dr. Blake says:—"We may here learn those characters which point to the origin of the forms possessing them, and any fundamental distinction found will prove a bifurcation of the group."‡ The little cap, or ovisac, is by Sir Richard Owen called the protoconch, and is a distinguishing mark of origin in the vast majority of cases.

Mr. Hyatt lays much stress on the embryological facts which he considers that he has established, that every individual curved cephalopod began life as a straight embryo, becomes curved in its growth, completes its curvature at maturity, and has a tendency to uncoil as it arrives at old age. He finds in this life of the single creature a representation of the life of the tribe, and argues that in both cases alike the growth is purely natural, and, as it were, self-contained. Surely this is analogy and not natural history. The tribal and the individual life may thus be parallel in part only. He himself says elsewhere:—"We cannot say that the causes which produced old age, and those which in time produced retrogressive types, were identical."§

It seems obvious, therefore, that no reliance whatever can be placed on the argument from embryology.

It is admitted that the marvellously rapid introduction of new species of these two orders in the Silurian epoch is

* Salter, *Memoir by Ramsay, North Wales*, vol. iii., p. 374.

† Gaudry, *Les Enchainements du Monde, &c.*, p. 173.

‡ *Fossil Cephalopoda*, p. 24. § *Science*, February 8, p. 149.

contrary to all our experience of rate of change at present: two assumptions have to be made to get rid of this difficulty; first, the usual one of inconceivably long periods of time; and, secondly, the supposition that the changes took place with far greater rapidity than now, of which, however, there is no proof whatever. On the contrary, the force of heredity is said to be always greatest nearest to the origin of the form. It is a somewhat singular circumstance, and not without a bearing on our question, that in the case of the ammonites we find the first forms closely coiled, but one of the principal last forms—the baculites—is absolutely as straight as the orthoceratite. If the process from the straight form to the curved is to be called evolution, by what name shall the reverse be distinguished? I show you a baculites, that you may see that it is not merely an uncoiled ammonite, any more than an orthoceratite is not merely an uncoiled nautilus,—but both are distinct forms, not degenerate but independent creatures.

The importance of the subject, as now elevated into a test case, must be my apology for adducing some authorities on both sides, in addition to those previously mentioned.

We may quote on the one side the utterances of Professor Flower at the recent Church Congress at Reading, who boldly says:—

“The opinion now almost, if not quite, universal among skilled and thoughtful naturalists of all countries, and whatever their beliefs on other subjects, is that the various forms of life which we see around us, and the existence of which we know from their fossil remains, are the product, not of independent creations, but of descent, with gradual modification from pre-existing forms.”* He afterwards, however, states that direct proof of the theory is wanting.

On the other hand, Dr. Duncan, in his presidential address to the Geological Society in 1878, comments on the difficulties of evolution in reference to the nautiloids as follows:—“Every student of palæontology must be impressed at the commencement of his studies with the excessive variety of form displayed by the tetrabranchiate cephalopoda, and when informed that it is produced by natural selection wonder is felt that the shapes assumed had a curious resemblance during the same geological age over the whole world, and that the genus *Nautilus* should have remained so little altered in spite of the struggle for existence, the survival of the fittest, sexual selection, and adaptive modification.” †

* *Nature*, October 11, 1883. † *Quarterly Journal, G. S.*, vol. xxxiv., p. 68.

To oppose my able friend Alpheus Hyatt, I would call up the old renowned chief from Bohemia. The Silurian rocks of that country were patiently examined during a lifetime by the high intelligence and industry of Joachim Barrande. They present most favourable conditions for the search; in no less than 665 species of cephalopods, crowded in a succession of strata generally similar in mineral composition, the phenomena of progressive life forms are abundantly displayed. Barrande writes that he was much struck with the *contemporaneous* appearance of orthoceras and cyrtoceras; and on the whole subject, as the result of his studies, he states that the facts positively forbid the conclusion that "the numerous and varied specific forms of each generic type are derived from each other by a slow and imperceptible transformation, under the influence of the surrounding medium."

Again he writes in his great work:—"In short, the differences between the zoological and chronological evolution of the cephalopods are so great and so plain that it is impossible to recognise any harmony between the two series; but both, being equally founded on facts and considerations outside all arbitrary influence, have their origin in the laws of nature.

In the face of these difficulties, theory can have recourse to the usual excuse, based on the lack of sufficient palæontological evidence. It can also call in either the unfailling resource of infinite and boundless ages of time before the beginning of the palæozoic era, or finally complete destruction of the organic remains in the metamorphic rocks."

Reverting again to a theory which would connect the cephalopods in the chain of evolution, he says:—"Although it is impossible to compare with accuracy the periods when the cephalopods made their first appearance in different countries, we may consider as the oldest representatives of this order those which appeared in Canada and England before the complete establishment of the second fauna. We must then be astonished at seeing that in these two countries the first forms belong to two different types. Thus in Canada there are found small orthoceratites in the passage-beds between the Potsdam sandstone and overlying series; in England, on the other hand, the first form is a little cyrtoceras of the Tremadoc fauna."*

And still further:—"In other words, the absence of the cephalopods in the primordial fauna cannot be reconciled with any hypothesis which would tend to carry over the origin and

development of these molluscs to a pre-Silurian period. We are, therefore, obliged to give up this hypothesis in order to explain the simultaneous appearance of numerous specific or generic forms of this order at very distant spots on the surface of the globe about the time of the origin of the second fauna.

After the facts and considerations which have gone before, the disagreements shown between the zoological and chronological evolution could not be made to disappear, either before the excuse of the lack of sufficient palæontological evidence, or before the hypothesis of a series of antepre-mordial faunas, or before the supposition of the total disappearance of the vestiges of these faunas through the effect of the metamorphism of the rocks.

These disagreements, then, remain in science to show us that the order of the cephalopods, that is, the first order among molluscs, by its organisation, as well as by its numbers, its variety, and the strength of its representatives during the Silurian ages, altogether eludes the ideal combinations which would tend to derive its origin and its primitive form from an imaginary individual, by an indefinite succession of imperceptible variations before the palæozoic era. This bears witness to the powerlessness of theories or self-made explanations to reveal to us the means by which it has pleased the Creator to introduce organic life upon the globe, and to provide for the succession and development of the types which should represent them, each one in the period which has been assigned to it by eternal wisdom."*

So far Barrande.

M. Gaudry, one of the ablest of living palæontologists, an evolutionist, concludes his statement of the case with the following important sentences:—"But, to be strictly correct, it must be added that, in the actual state of our knowledge, we are scarcely permitted to pierce the mystery which envelops the primal development of the great classes of animal life. No one knows the manner in which the first creature of the foraminifera, the polyps, the jelly-fishes, the urchins, the brachiopods, the bivalves, the ostracods, the univalves, the trilobites, the decapods, the myriapods, the insects, the spiders, the fish, the reptiles, &c., appeared. The most ancient fossils have not yet furnished us with positive proof of the passage of animals from one class to another class."†

I sum up by claiming, on the issue of evolution by the

* *Syst. Silurien de la Bohême*, ii., p. 157.

† Gaudry, p. 292.

influence of external circumstances or internal growth, a nonsuit, or a verdict of "not proven," as well on the evidence as on the admissions in the cause.

But testimony of all kinds appears to be readily set aside by the fascinating, flattering power of the doctrine of evolution. The proposition is repeated so loudly and continuously that it has begun to be accepted as an axiom, not to be questioned. It goes without argument. When a term becomes popular, it invariably comes to be used in a loose sense. Evolution, strictly, can only apply to action taking place in the subject; but, in a looser sense, it is now used to express the successive additions to the subject derived from any source. It is used to include all effects produced by a guiding principle or a possible accident. In order to account for the origin of a species, it is popularly held that nothing more is required than to show one very near to it, and thus resemblance is magnified into cause and effect. But surely permanent differences must indicate the action of corresponding constitutional powers. Naturalists find barriers, which they treat as boundary lines, only because they are so. They call the assemblage of facts within areas so bounded a species, and claim for it an independent origin, and call the mode in which this was brought about creation, for want of any adequate secondary cause. The common sense and common speech of mankind are on their side. Either cephalopods must have been derived from some simpler form, by minute stages of difference, or, they must have been originally created as we now find them; and if the latter supposition, which we have seen is an hypothesis surrounded with difficulties hitherto unsurmounted, requires the multiplication of miracles, we are not alarmed at this conclusion. Up to the present day the domain of natural history has been searched in vain for any second cause adequate to produce the permanent difference between races. Evolution may be a plausible guess, it may be a working hypothesis, but I do not think it bears examination; and there are those who properly say, Why should we resort to guess-work when another department of knowledge gives us the plain, simple truth,—God made "everything after its kind"?

Mr. Bouverie Pusey, recently here, successfully established the proposition that variation in the animal kingdom is limited and exceptional. The law which has ruled the existing differences must be a manifestation of creating, and not merely of unfolding. The direction of the will-force was evidently in such lines as to make the successive subjects as nearly alike as possible compatible with ordered essential

differences. The divine skill with which this has been accomplished appears to be the source of our embarrassments. Permitted variations necessary for life under actual conditions render the problem still more puzzling, and give us ample room for experiment and observation to distinguish between constant and inconstant differences; but this need not drive us to despair, for we do not choose to contemplate nature apart from God. It has been well said by Canon Westcott, that "theology accepts, without the least reserve, the conclusions of science as such; it only rejects the claim of science to contain within itself every spring of knowledge and every domain of thought."* Nor are we justified in substituting imagination for reason. Let us, by all means, use analogy, fancy, and poetry for our enjoyment and delight, they are beautiful and profitable modes of thought; but, in constructing the Temple of Science, we may use them as embellishments, not as building materials.

The CHAIRMAN said he was sure that the hearty thanks of the meeting would be readily granted to Mr. Pattison for his most valuable and interesting paper.

Mr. S. R. PATTISON, F.G.S., said that the point he had endeavoured to bring forward was this: Professor Huxley had advanced the theory that the Pearly Nautilus—the curved cephalopod—was produced by evolution from the straight or uncurved cephalopod, and had taken this assumed fact as the groundwork of the theory of evolution, and as evidence of the truth of that theory and of its working. In his paper he, Mr. Pattison, had attempted to show that the one form was not developed from the other. With regard to the paper not having been printed before the meeting, he took that opportunity of saying that only a week ago he had received from Boston the latest utterances of Professor Hyatt, one of the greatest authorities on the subject, and as these were utterly at variance with the views that he himself had formed, he had been anxious to study them. He could only say that there were facts in the case about the inferences from which opinions would differ. Professor Huxley, no doubt, held his own opinions honestly, and he (Mr. Pattison) hoped that he did the same.

Mr. E. CHARLESWORTH, F.G.S. (a visitor), said that, having a large experience of the subject, he would like to make a few remarks. Professor Huxley's lecture, from which Mr. Pattison had read them some extracts, was intended to prove his theory of evolution as founded upon the theory—as they had heard—of the Nautilus and its connexion with the theory of evolution. The subject of embryology was nothing to the point. He had known Professor Darwin when he was a young man,—when the name of "Darwin"

* *Gospel of the Resurrection.*

was wholly unknown to the learned world ; but, perfectly apart from the interest which he therefore took in his theories, as springing from him, he took the greatest interest in this subject. He had read the abstract of Professor Huxley's paper with the greatest interest, but he had also read it with the greatest surprise. It seemed to him the production of a man of the very highest attainments in the scientific world. The subject was the "Nautilus." The common name that would be applied to its class was "shell-fish" ; the proper name for it was "an organised mollusc." If they could imagine the living body of the mollusc, living in a trumpet divided by curtains thrown across it, and the creature always moving forward, and that, as it moves forward, it has no use for the small end and throws it away, this would be the straight form. Then, if they imagined another form, of which the shell was a curved trumpet, they would get the Nautilus. Professor Huxley then had told them that this curved form was an offshoot of the straight one. But the straight forms have been found living side by side with the curved ones,—as their contemporaries, and not as their ancestors. It was impossible that the one could be the ancestor of the other when they were thus found. If they went down through the London clay, and down to the deepest strata, they found there the Nautilus just as it was ages and ages ago. The two forms had co-existed as far back as they could be traced, and this showed that Professor Huxley's lecture had been a failure. But he (Mr. Charlesworth) hoped that the meeting would not take what he had said as a proof that he held that evolution is altogether a false theory. Though not a convert to the doctrine of evolution, he was not prepared to deny it altogether.

Mr. W. P. JAMES said that he had unfortunately only heard a portion of the paper, but had been much struck with what he had heard as to the permanence of the forms under discussion. He could say nothing about the Nautilus, but on another branch—a kindred subject, Fossil Botany,—he would like to say a few words. Fossil botany was supposed to be weaker than the other branches of Palæontology, but it threw much light upon the subject of permanence of form. Botany did not produce anything so substantial as the bones and skeletons of animals or the shells of molluscs. If the conchological and other records were imperfect, he was afraid that the botanical was still more so. But yet it afforded much valuable evidence. If they went back to the Miocene flora they could not but be struck with the evidence of permanence they would find there. Poplars, palms, and many other trees were found there exactly the same as in the present day, the generic type being but very little changed. Every one could see that permanence and not variety was the most wonderful thing ; and this was emphasised by the fact that the climate had changed very much, since it was then most certainly sub-tropical. But to go further back, the mere fact that the type of the fern has remained so constant through the time that has elapsed since the Palæozoic coal measures that a mere child can recognise it, is astonishing. Botanists divide the fern group into three classes, popularly termed Ferns, Horse-tails, and Club-mosses. There had been a

discussion as to some of these classes, but there was now a general agreement that, even at that very remote time, they were as distinct from each other as now ; and, if they had not changed during the long period during which we were thus enabled to observe them, it was absurd to argue that they could have changed to the extent that the theory of evolution required in the period that physicists allow to the world, for the three classes have never had the time necessary to develop from a common ancestor. If the theory of evolution were true, it should agree with the facts of botany as well as with those of zoology ; but it obviously fails to do so. Fossil botany was, he regretted, a neglected subject ; but eminent authorities had asserted that the facts it established disproved, or at least are opposed to, the theory of evolution.

Mr. PATTISON said that there was nothing in the remarks which had been made which called for any reply from him. He was very much indebted to Mr. James for his observations. They were very much to the point, and he had felt great pleasure in listening to an argument so strongly in favour of that which he had himself advanced.

The meeting was then adjourned.

ORDINARY MEETING, MAY 6, 1884.

(Specially held at the Society of Arts House.)

SIR H. BARKLY, G.C.M.G., K.C.B., F.R.S., IN THE CHAIR.

The minutes of the last meeting were read and confirmed.

The CHAIRMAN—I have now the honour of introducing Dr. Dawson,* Vice-Chancellor of McGill University, Montreal, who has kindly prepared for this Institute a statement of the results of his researches during a recent tour in Egypt and Syria in relation to the indications there manifested of the former occupation of those countries by a primitive race of man.

[Sir W. Dawson was received with much applause by the audience, which filled the large theatre of the Society of Arts in every part. He read the following paper.]

NOTES ON PREHISTORIC MAN IN EGYPT AND THE LEBANON. Sir J. W. DAWSON, K.C.M.G., LL.D., F.R.S.*

IN my recent visit to Egypt and Syria, I was very desirous to learn as much as possible respecting the traces of prehistoric men in these countries. In Egypt I was unsuccessful in obtaining any certain evidence of the existence of man earlier than the historical period; but in Northern Syria, following in the footsteps of Canon Tristram and other explorers, more satisfactory results were obtained, and which may contribute something to the facts already known.

Considerable attention has recently been given to the question of the existence of prehistoric man in Egypt, in consequence of the discovery of worked flints in various parts of the country. More especially I may refer to the papers of Sir John Lubbock, Mr. Jukes-Browne, Captain Burton, Mr. Greg, and General Pitt-Rivers, in the *Journal of the Anthropological Institute*, and that of Professor Haynes in the *Journal of the American Academy of Sciences*.

Egypt abounds in material for flint-working. Certain beds of the Eocene limestone hold numerous, and often large flint nodules, and, where these beds have been removed by denudation, the residual flints are widely scattered over the desert surfaces. There are also beds of gravel largely com-

* Dr. Dawson was knighted shortly afterwards.—Ed.

posed of entire and broken specimens of these flints. That the ancient Egyptians worked the flint nodules, and used flint arrows and knives, is well known, and it is also believed that flint flakes were used in the cutting of hieroglyphics on the softer limestones. Careful examination with the lens of sculptured surfaces of limestone convinces me that the hieroglyphics were usually scratched with sharp points rather than chiselled, and splinters of flint would be very suitable for this purpose. Bauerman has described* flint picks of triangular and trapeziform shape found in the mines worked by the Egyptians at Wady Meghara, in the Sinai peninsula, and states that the marks on the stone are such as these tools would make. The manufacture has been continued to the present time, flints for muskets, and also for strike-lights, to be carried with steel and tinder of vegetable fibre in the tobacco-pouch, being still commonly made and sold. This manufacture is carried on at Assiout, and also at the village of Kadasseh, near the Gizeh pyramids.

It follows from this that the occurrence of flint chips or flakes on the surface, and especially near "ateliers," village sites, or tombs, &c., carries with it no evidence of age, except such as may be afforded by the condition or forms of the flints; and the former is somewhat invalidated by the considerations that some flints weather more rapidly than others, and that under certain conditions of exposure weathering occurs very rapidly; while the latter is of little value, as the rudest forms of flints have been used for strike-lights and other purposes in the most modern times. Nor is it remarkable that worked flints are more common on the desert surfaces than on the alluvial plain, since it is on the former that the material for their manufacture is to be found, and on the latter they are likely to have been buried by recent deposits.

The well-known locality near Helouan forms a good example of the mode of occurrence of modern flint implements. At this place the worked flints, which are mostly of the form of long, slender flakes and pointed spicules, occur on the desert surface, or only under a little drifted sand, and the locality where they are found is evidently an old village site, as it has remains of foundations and tombs, worked blocks of limestone, and numerous fragments of burned brick, which occur along with the flakes. The character of the bricks would seem to indicate that the site was inhabited in the Roman time, or later. The flakes may have been made

* *Journal of the Geological Society*, vol. xxv.

for use on the spot, perhaps in carving stone from the neighbouring quarries; or they may have been sold in Helouan or in Memphis, as they now are in Assiout and Cairo. Arrow-heads are said to have been found at Helouan, but I saw none of these, unless, indeed, some of the pointed flakes might have been intended for this use. It is worthy of remark that the desert near Helouan is less abundantly supplied with flint nodules than most other places, so that the material may have been brought from some distance. The flakes are usually much discoloured on the surface, many of them being of a kind of flint which blackens on weathering; but some of them of a different kind of flint are comparatively fresh in appearance. The principal locality is about half a mile south-west of the present town, and apparently on the line of an old track leading from the quarries to the river. (Pl. II., Figs. 6, 7.)

A different conclusion would be warranted if such worked flints were found in old deposits, anterior to the times of Egyptian civilisation. A case of this kind seems to be furnished by the discovery, reported by General Pitt-Rivers, in the *Journal of the Anthropological Institute*,* of flint flakes in an old gravel at a place called by the natives Jebel Assart, at the mouth of the ravine of Bab-el-Molook, in which are the tombs of the kings, near Thebes. I have examined this place with some care, and am convinced of the antiquity of the gravel. It constitutes a stratified bed of considerable area, 25 feet in thickness, and with intercalated layers of sandy matter mixed with small stones. These layers are entirely different from the Nile mud, and are made up of fine *débris* of the Eocene rocks, with small stones and broken flints. They indicate more tranquil deposition, proceeding in the intervals of the gravel deposits and under water. General Pitt-Rivers refers to only one of these beds; but in the deeper sections three may be observed (Fig. 1). The whole mass has been cemented by calcareous infiltration so as to constitute a rock of some hardness. It is true it consists of the same materials now washed down the ravine by the torrents caused by winter rains, namely, partially-rounded masses of limestone and flints, whole and broken, but it must have been formed at a time when the ravine was steeper and less excavated than at present, and probably subject to more violent inundations, and when it must have carried its gravel into a larger Nile than the present, or possibly into an arm of the sea. It is, in all probability, one of the Pleistocene gravels

* No. 39, May, 1882.

of the valley, which belong to a period of subsidence indicated by similar beds in other places, and also by the raised beaches and the rocks covered with modern oysters and bored by lithodomous shells, which are seen near Cairo and at Gizeh, at the height of 200 feet above the sea.

Along a wady or ravine cut through the bed by the modern torrents, the ancient Egyptians have excavated tombs in the hard gravel. But, independently of this, a geologist would have little doubt as to its prehistoric age. The doubt here lies with respect to the flints. The bed is full of broken flints, as are the modern gravels carried down the ravine at present, and indeed all gravels formed by powerful torrents or surf-action in flint districts. These result from the violent impinging of stones on the flints, and therefore have all the characters of specimens broken by hand, except that they have no determinate forms. In this respect the broken flints found in these beds differ from those found at Helouan, or in the bone caves of the Lebanon, and resemble those which may be found in any bed of gravel formed by violent mechanical action. It is true, a few out of thousands of shapeless flakes might be likened to flat flakes formed by man; but the same proportion of such forms may be found in the modern *débris* of the torrents. The main point at issue in respect to these forms is the importance attached to what is termed a "bulb of percussion," produced by a sharp blow striking off a flake. That this is usually an evidence of human agency may be admitted; but since it may be produced by the action of a water-driven stone, it cannot be regarded as an infallible proof, except when sustained by other evidences of the presence of man.

The specimens figured as from this bed by General Pitt-Rivers are in no respect exceptions to this, and I dug out many similar ones from the same beds, but none which could with any certainty be assigned to human agency. I do not, of course, refer to those which he describes from tombs and from the surface, one of which is a finely-formed knife, with edges modified by pressure. Another, supposed to be for scraping or polishing shafts of spears, is like specimens of worn strike-lights from the pouches of modern Arabs. (Pl. II., Fig. 8.) The annular nodules figured by General Pitt-Rivers, which are numerous in some of the limestones, of course have no connexion with the worked flints, and the specimens which he figures from the surface, though some of them are no doubt ancient, are probably in part natural and in part from the little heaps left by Arabs and others in places where they have been shaping flints for muskets or for

strike-lights. I obtained numbers of such surface specimens, evidently of more recent date than the old gravels above referred to, and whose mode of occurrence renders it impossible to decide as to their origin or antiquity. There is no foundation in fact for the statement that flint in Egypt has been imported from a distance for the manufacture of implements. Flint nodules occur in the limestones throughout the Nile valley, and are abundant in the *débris* derived from their waste; and though flakes and chips are numerous near tombs, quarries, and village sites, they are also very abundant in the places where the flint is found. I found no large hatchets of "palæolithic" form in Egypt, but purchased a spear-like weapon of polished slate, said to have been found in a tomb, and a beautiful little polished hatchet of jade, perforated for suspension as an ornament.

I may add that the hardened gravel and silt above referred to afforded no fossils, except those in limestone pebbles, and a few irregular root-like bodies in the finer bands, and which may have been aquatic plants, and would go to confirm the conclusion that the beds were deposited under water.

The Lebanon Mountains, composed as they are principally of horizontal or slightly inclined beds of limestone of different degrees of hardness, and traversed by many faults and fissures, are eminently suited for the production of caverns and rock shelters available for human residence or for sheltering animals, and such caverns accordingly abound in most parts of the range, and have, from the earliest periods, been employed for these purposes. These caverns are, with respect to their origin, of two kinds,—river caverns and sea-cliff caverns.

The former have been excavated by streams running underground along lines of fissure which they have enlarged into tunnels. A remarkable example of this kind is the Grotto of the Nahr-el-Kelb, or Dog River, the ancient Lycus, which was explored in 1873 by Messrs. Marshall, Bliss, Brigstoke, and Huxley, and found to extend for 1,256 yards, and to expand into large halls with magnificent stalactites. Another is that from which the neighbouring mountain stream of Ant Elias issues like a gigantic fountain. These water-caves may ultimately become dry, by the streams finding a lower level, either in the rock itself or in some adjacent ravine, this being, perhaps, sometimes determined by the partial falling-in or choking of the cavern itself. In the ravine of Ant Elias, in addition to the present water-cave, there is one which has become perfectly dry, and there are remains of others which have been cut into and unroofed by the further excavation of the ravine.

The second class of caverns,—those excavated by the sea,—may be seen in process of formation at many places on the coast, where the waves have cut into fissures or have undercut the harder beds. They are usually not very deep, and are often mere shelters or overhanging ledges. Such caverns are frequent on the old inland cliffs which have been subjected to erosion when the land stood at a lower level. Caverns of both these classes contain evidences of their use by man.

The remains of an ancient cavern were discovered in 1864 by the Rev. Canon Tristram in the celebrated maritime pass at the mouth of the Nahr-el-Kelb, and were thus described by him :—

“The position of this mass of bone was several feet above the height of the present roadway, but below the level of the ancient Egyptian track. The remains extend for perhaps 124 feet, and it has probably formed the flooring of an ancient cavern, the roof of which must have been cut away by Rameses to form his road or to obtain a surface for his tablet. From the position of the deposit, it would seem as though the floor of the cave had once extended to the sea-face of the cliff, and that the remaining portion was excavated by Antonine for his road, leaving only the small portion which we examined.” (He then notices the fallen masses of breccia which have been thrown down on the talus formed in making the road.) “The bones are all in fragments, the remains, in all probability, of the feasts of the makers of the rude implements. Four of the teeth have belonged to an ox somewhat resembling the ox of our peat-mosses, and one of them probably to a bison. Of the others, some may probably be assigned to the red-deer or reindeer, and another to an elk.”

Lartet has described the caves of this district in his geological report of the expedition of the Duc de Luynes, and Fraas has devoted some space to them in *Aus dem Orient*. The latter specifies as found in these caverns, *Ursus arctos*, *Felis spelæa*, *Rhinoceros tichorhinus*, *Bos priscus*, *Sus priscus*, and remains of *Equus*, *Cervus*, and *Capra*, an assemblage which may well be called prehistoric, even in a country whose history extends so far back as that of Syria. Lartet, however, mentions only species of stag, goat, antelope, &c., all of them believed to have been found in the Lebanon in early historic times.

I had the pleasure of visiting this place in company with Rev. Dr. Bliss, of the Beyrout College, in February last, and endeavoured, as far as possible, to supplement and perfect the observations of Canon Tristram (Pl. I., Fig. 2).

At the point in question, the present road, which is probably

nearly identical with that cut by the Romans, is about 100 feet above the sea-level, from which the bank rises in a steep slope, composed of fallen blocks of stone. The road bends inward into the cliff, which here recedes in a little cove facing the N.W., at the bottom of which was the cave. The remains of this consist of a stalagmite floor, about 18 inches in its general thickness, extending inward from the road toward the cliff about six paces, and in breadth along the road about nine paces. The roof and sides of the cave are gone, but at the back the vertical cliff presents a sort of niche with the top slightly arched, and corresponding to the back of the cave, which must have been nine yards broad and of considerable height, with an arched roof. It has evidently been a sea-cave, excavated at the bottom of a small cove or indentation in the cliff, and at a time when the sea was about 100 feet above its present level. Near the cave, the cliff rises in a series of little terraces, on which grain had been sown; and over the top runs an old road or track which seems to have been that in use when the early Assyrian and Egyptian tablets were cut on the rock, as they are evidently related to the level of this and not to that of the present road.

Whether the roof of the cavern had fallen in before the Roman road was made is uncertain; but it is clear that the floor of the cave was cut into in making the road, and at least the *débris* of its sides and roof used in forming the bank, as large masses, both of the stalagmite and of the limestone rock, lie on the slope, some of the latter holding characteristic cretaceous corals, which belong to the soft bed in which the cave was originally excavated. A large slab of the bone-breccia eight feet in length, now forms part of the parapet of the road, and would make a magnificent museum specimen. The exposed surfaces of the stalagmite, and the pieces on the bank, were carefully searched for teeth and bones and flint knives, and the specimens found will be described in the sequel.* Search was also made in the little terraces near the cave, and a few flint flakes were found, but no other signs of human occupancy. On the flat top of the cliff, over which the old track runs, nothing was seen. The cretaceous limestone has an anticlinal undulation at the locality of the caves, dipping W.S.W. at one end, and N.E. at the other.

In the same cove with Tristram's cave, a little to the south and thirty-five feet higher in the bank, another, though

* See appended Note. Prof. Boyd Dawkins, F.R.S., has kindly undertaken their more detailed examination.

smaller, cave exists, with its roof still entire. The floor of this cave is of soft earth, and in digging in it nothing was found. Near the mouth, however, was an oval bed made of stones, lined with green rushes, on which some one had slept within a few days, furnishing an example of the recent use of this cavern.

In the next adjoining cove to the south-west of Tristram's cave, Dr. Bliss was so fortunate as to find the floor of a second cavern still richer in remains than that of Tristram's cave, from which it is distant two hundred and ten paces along the road. Its roof is entirely gone, the material having apparently been for the most part removed to form the road, though some large blocks remain. The stalagmite floor is ten paces broad, and in some places as much as four feet thick. It is somewhat softer, and of a more yellow colour, than that in the other cave, but its contents in bones and flint knives appear to be similar.

Between the two caves the road passes round a point of rock concealing the one from the other, and commanding an extensive view of the coast from Beyrout to Tripoli. At this point are the remains of a foundation of hard concrete, and near it a plain shaft of grey granite projecting from the parapet of the road, as if some monument had been erected, probably in Roman times, at this point.

It is to be observed that when these caverns were entire, and before any road was cut around the cliff, their occupants would enjoy a position difficult of approach by enemies and commanding an extensive view along the coast. There would also be easy access to the shore and to the top of the cliff, and small terraces of ground capable of occupation and even of culture, and, in any case, of sustaining trees available for shelter and fuel. No running water is known nearer than the river, but there are cavities in the rock which retain rain-water, and, if, at the time of the occupancy of the caverns, the land was a little higher than now, the flat country found at other parts of the coast may have extended around this promontory, and there may have been springs at the foot of the cliff. The ledges of rock at the foot of these cliffs abound in limpets and other shell-fish, and at the time of my visit I saw boys engaged in collecting these. If the sea had been as near at the time of the occupation of the prehistoric caves, we should have expected that their inhabitants would have availed themselves of this source of food, and that numbers of shells would have been found in their kitchen-middens. As this is not the case, we have an additional reason to suppose that the sea was then distant. If, at the period in question,

the maritime plain of this coast was much wider than at present, this would have enabled herds of horses and deer to migrate from north to south, and to find suitable pasturage, and would also have afforded fit haunts for the rhinoceros. It is evident, however, that any such condition of the coast must have been anterior to the times of Phœnician history.

It is also probable that the caves may have been occupied occasionally, or at certain seasons, rather than continuously. The bones and knives are not merely covered with stalagmitic matter, but mixed with it, indicating that the deposit was in progress when these remains were being accumulated. This would also give evidence of a more moist climate than that prevailing at present, and probably a wooded condition of the country, such as that referred to in the descriptions of Lebanon in the Old Testament, and which must have continued from the earliest times till the hills were finally denuded of their trees by the agency of man.

Though it is possible that these caves may have remained intact until the cutting of the Roman road, it seems more probable that their roofs were removed previously, and the appearance of the rock, along with the absence of any evidence of late residence, agrees with the character of the animal remains in indicating that their occupancy by man had been brought to a close anterior to the times of history, and possibly in the great submergence which closed the second continental or antediluvian period. There is, in any case, no evidence of any later occupancy than that by the early people whose *débris* is enclosed in the stalagmite.

I may remark here that the knives in these caves are made of the flint found in the immediate vicinity, and that they differ in no respect from those of the later caves and rock shelters of this region, except in perhaps being a little broader and more massive. (Pl. III.)

On the border of St. George's Bay, between the caves and Ant Elias, I observed, near the shore, and at no great elevation, a band of red loam and stones in which were a few similar flint flakes. The red earth in question is a *remanié* deposit derived from the older red earth to be noticed in the sequel, and which contains no stones or flints. The flakes contained in this *remanié* earth may have been washed out of old caverns, or from the surface of the ground at higher levels; but probably at a period historically very ancient.

The stream of Ant Elias, between Nahr-el-Kelb and Beyrout, bubbles up from the bottom of a ravine, in front of a cavern, along which its waters are carried as in a tunnel. On the

opposite or northern side of the valley, and a little higher up, is another cavern, with a high arched entrance, and about fifty feet above the bottom of the ravine (Pl. I., Fig. 3). On entering the cave it is found to be a tunnel penetrating for about fifty yards into the limestone rock, in the direction of N. 60° E., and then turning off at right angles to its former course, the strike of the cretaceous limestone being N. 60° W., with dip to the S.W. Within, its floor is much encumbered with fallen blocks, but near the entrance it presents an earthen floor with only a few stones, some of them of large size. Against the sides are masses of stalagmite, some of which rise to a height of six feet above the floor, and at the mouth is a ridge of similar stalagmite, extending beyond the mouth of the cave, and indicating that the roof formerly projected farther than it does at present. On the side of the cliff there are also the remains of an old tunnel, long since cut away, and showing only a part of one side. The stalagmite of this cave contains a few flint knives and bones, but differs in appearance from that in the Nahr-el-Kelb caves, and is less rich in remains. The earthen floor is a very rich deposit of flint knives and bones, the former very thin and well made, and accompanied by a few small cores (Pl. II.). It is possible that the stalagmite of this cave may belong to the time of the primitive people who lived in the Nahr-el-Kelb caves; and that, after their deposits had been sealed up in this material and some portions of the front of the cavern removed by erosion, it had been again occupied by a similar rude people, whose *débris* is found in the earth. But it is also possible that the stalagmite may be no older than the cave earth; and the excavations I was able to make are not sufficient fully to decide this question. The cave earth I would refer to the same age with that of certain rock-shelters discovered on the banks of the Nahr-el-Kelb, and which are stated by Lartet to contain remains only of the recent animals of the country.

Among the remains in the Ant Elias cave are bones of birds, and shells of the large *Helix* (*H. pomatia*) now common in the country, and still used as food. This species was not seen in the older deposits. A shell of a species of *Turbo* still common on the coast was also found.

The cavern at Ant Elias is large enough to have accommodated a considerable tribe of ancient Troglodytes, and the time during which it was so occupied need not have been very long, provided the occupants were numerous. The country at the time was no doubt wooded and well stocked with game, and the primitive people may have been prodigal

of flint knives, as abundance of material for their manufacture exists in the neighbouring limestones. They may also, as it seems likely the Belgian people of the Reindeer age were accustomed to do, have instituted *battues*, and made up quantities of pemmican or preserved meat for subsequent use with the flesh of the animals slaughtered.

Mr. West, of the Beyrout College, has promised to make further explorations in this cave, and to give particular attention to the teeth of mammals, to any objects of art other than flint knives, and to any stratification that may exist in the deposit.

Connected with the questions raised by the caverns, are the flint flakes and implements found at the Ras of Beyrout, and I believe first noticed by Mr. Chester in his report to the committee of the Palestine Exploration Fund.*

The oldest rock seen in passing from Beyrout around the point by the Lighthouse and Pigeon Island is the cretaceous limestone, which at this place is remarkably rich in large flint nodules. Upon the limestone rests a soft grey sandstone, used for building in the town, and containing in places fragments of recent shells. It is similar in its character to the modern sandstone of the Jaffa coast, and is, no doubt, of the same age. At one of the quarries a stratum of indurated deep red sand was seen to occur in the middle of the grey beds, and large sand-pipes, which traverse the grey beds perpendicularly, were filled with the same red sand, which also overlies the grey beds, and forms the surface of the highest part of the point, where it is more or less covered with loose wind-blown sand of a greyish colour. In one place, the lower grey sandstone was seen to be about forty feet in thickness, and the red sand is in some places as much as ten feet in thickness. The summit of these deposits rises as high as 250 feet above the sea-level. These sands are, probably, in great part products of the waste of the red and grey arenaceous beds of the lignitiferous zone of the Lebanon cretaceous, which occurs in the hills some distance behind. They belong to the modern or Pleistocene age, and to a time when the coast was submerged to the amount of 250 feet below its present level. At a place called the Bishop's Garden, behind Beyrout, and opposite the mouth of the ravine of the Beyrout river, there occurs a thick bed of grey and red conglomerate, capped with red sand, and which I believe to be a more inland representative of the coast deposit.

* Quarterly Statement.

At the Ras of Beyrout the bed of red sand contains no stones or other foreign bodies, except near the surface, where it seems to have been disturbed and re-deposited by the action of the rain-water; but on its surface it holds small stones, fragments of coarse pottery, and even of glass, and flint flakes and implements, which are partly covered with blown sand (Pl. II.). Among the stones I found fragments of vesicular trap, which may have been imported for millstones, and a small piece of Egyptian granite. All these bodies are mixed together, without anything to determine their relative ages, and they are most abundant at the surface of the red sand, and immediately under the drifted sand, or where it has been removed by the wind. The flint flakes are much whitened by weathering, and evidently of great antiquity, and with them are many large and irregular flakes, probably rejected as useless. A few spear and arrow heads have been found at this place. I found only one fragment of a lance or spear, but this had evidently been worked with some skill by pressure on the edges, in the manner now employed by the American Indians (Pl. I., Fig. 1). A small flake of obsidian, with a rounded indentation at the edge, as if intended for use as a hollow scraper, was also found, and may indicate the importation of this material for the manufacture of implements.

The fact that these flint implements occur along with pottery and other city refuse, probably implies that they belong to the historic period; and the reason of their occurrence here may be that the place was occupied by native tribes who came to trade with or to attack the Phœnician colony; or that it was resorted to by such people, because of the abundance of good flint in the limestone near this place. The deposit might thus seem to connect the time of the foundation of the early Phœnician colony with that of the later flint folk. It is, however, possible that an older deposit of flints may have subsequently been buried with city refuse, which is still being carted out to this place; or, on the other hand, that the citizens of Berytus may have continued to use flint flakes and arrows at the same time with pottery, and when they were building edifices of stone.

A curious instance of this connexion was mentioned to me by Mr. Sarruf, of the Beyrout College. He had found in a grave in the Lebanon, lance-heads of bronze and copper, along with flint flakes, thus showing the continued use of the latter after the natives had obtained weapons of bronze. On the other hand, Dr. Jessup, of the American Mission, has found, near Tyre, ancient tombs excavated in the bone-breccias of older prehistoric caverns.

Thus, in the Lebanon, we appear to have evidence of antediluvian or post-glacial cave-dwellers, belonging to the earliest known races of men, and of later Troglodytes and flint people, who must have continued in the country till it was colonised by the Canaanites and Phœnicians, and who may have occupied the remoter glens of the mountains down to a comparatively recent time.

It is to be observed here that the present bare condition of these mountains must be quite different from their primitive state, when they must have been clothed with forests, and were probably inhabited by many kinds of game long since extinct. In this state, also, they would be much more abundantly watered than at present, and would possess a more equable, though on the whole cooler, climate.

It is also interesting to note the possible connexion of at least the later cave-dwellers of the Lebanon with some of those primitive peoples referred to by Moses in the Book of Deuteronomy, as having inhabited Palestine before its colonisation by the Canaanites and Semites.

If we endeavour, in conclusion, to sum up the later geological history of the Lebanon district, we may conclude that, like other parts of Syria, it experienced considerable elevatory movements at the close of the Eocene period, and further elevation in the Pliocene; that in the Pleistocene period it was submerged to the extent of several hundred feet, and at this time many of the ancient sea-cliffs and caverns were cut; and that in the early modern or post-glacial age it partook of the elevation which at this time seems to have affected the whole coasts of the Mediterranean. It may have been in this time of elevation, when there was probably much more land at the eastern end of the Mediterranean, that men first appeared and took possession of the country, and established themselves in the caves. These, however, they probably occupied only at those seasons when they needed such shelter, or when they resorted to the hills in pursuit of game. They may have had other stations, now submerged, in the low grounds or by the sea-coast. This state of things was closed by the great post-glacial submergence or deluge, of which we are now finding so many evidences in different parts of the world, and after this the present geographical conditions were established, and the period of history commenced. In this, the country, then wooded and tenanted by wild animals, was first occupied by rude tribes, probably of Turanian or Hamite origin, and afterwards by the more civilised Phœnicians.

NOTE ON TEETH AND BONES, AND ON FLINT
IMPLEMENTS.

PROF. DAWKINS has been so kind as to examine in a preliminary manner the specimens of teeth, &c., collected, and has authorised me to state that the breccia from the Pass of Nahr-el-Kelb contains remains of *Rhinoceros* (probably *R. tichorhinus*), *Cervus*, *Bos*, and *Equus*. In the earth of the probably more modern cave of Ant Elias are teeth of the hog, and of the goat or sheep, and an antler of the roe-deer. These facts are sufficient to indicate the earlier date of the Nahr-el-Kelb caverns, as stated above; but more detailed examination of the fragments of breccia collected will, no doubt, develop other points of interest. It is to be observed here that at the Nahr-el-Kelb River, Lartet has found a rock shelter which contains remains similar to those of Ant Elias, but these have not yet been found in connexion with the old caverns at the Pass.

In the breccia of Nahr-el-Kelb there are large and small knives of the ordinary form, curved flakes roughly chipped at one side, triangular flakes chipped at the edges (Pls. II. and III.), and a flake with the point rounded, and slightly chipped as if for a scraper. There are also remains of cores, and many minute chips, indicating that implements were made on the spot. No large implements of the Palæolithic type were observed. No charcoal was noticed, but a few of the fragments of bone have a brown colour, as if from exposure to fire. Some of the flint knives are perfectly fresh on their surfaces, others are much whitened and decayed.

In Plate III. I have represented some additional flint implements worked out from the breccia of the Nahr-el-Kelb Pass. Fig. 1 is a knife or scraper partly embedded in the breccia. One side has been shaped by fine chipping, or perhaps worn by use in scraping. Fig. 2 is part of a large flake, which may originally have been a spear or lance, but has been much worn at one side by use as a knife or scraper. Fig. 3 is a flake, which has had a curved notch chipped in one end, and the upper side chipped by use. Fig. 4 is a rough one-edged knife, much worn and chipped. Fig. 5 may possibly have been the end of a spear or arrow. Besides these there was found in a mass of the breccia a fragment of a stone hammer of diorite, broken by use. It may have been a naturally smoothed stone, or may have been artificially polished. As this kind of stone is not found at the locality, it may have been brought from some distance. It was reduced to a very fragile condition by decay of its felspar. There was also found in the breccia a fragment of crystalline alabaster, which may have been employed in the manufacture of ornaments, but no carvings or ornaments were observed.

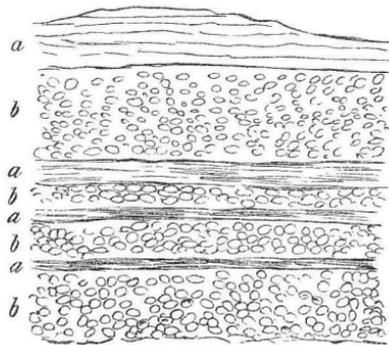


FIG. 1 -SECTION OF INDURATED GRAVEL AND SAND AT JEBEL ASSART - THEBES.

(a) Indurated Sand. (b) Gravel.

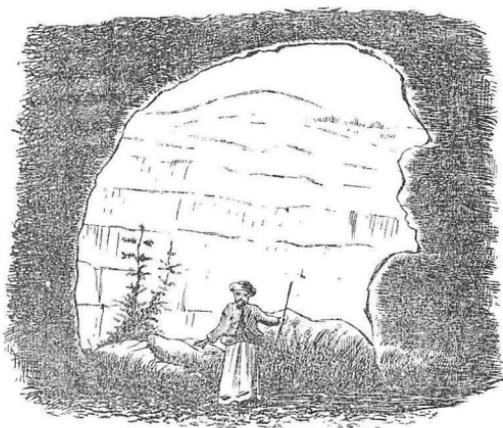


FIG. 3. - ENTRANCE OF CAVERN AT ANT ELIAS

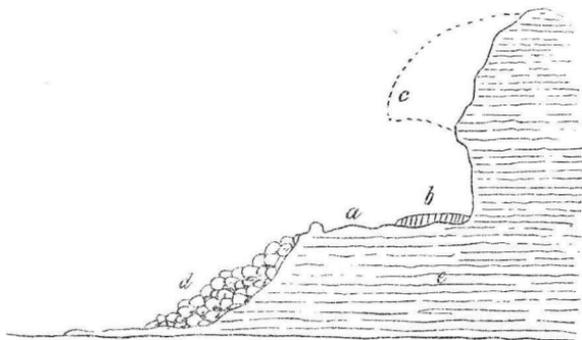
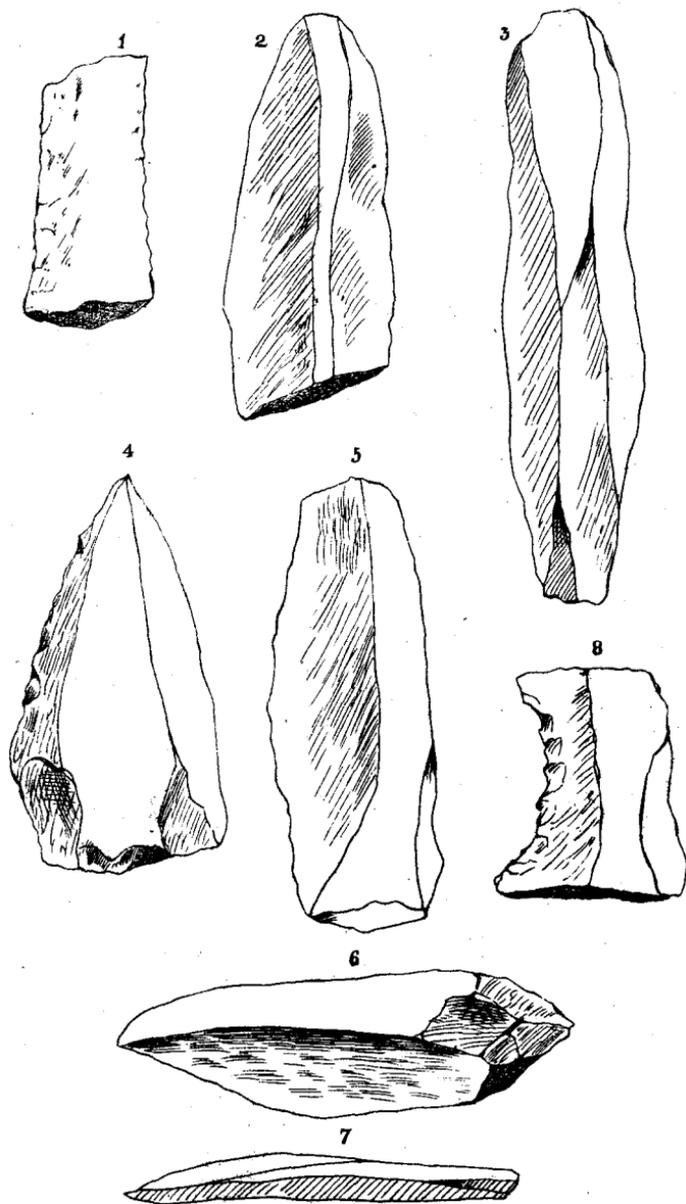
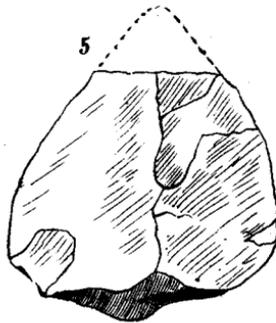
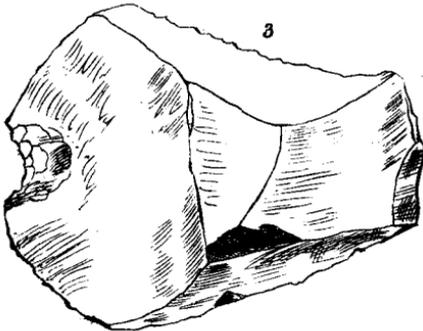
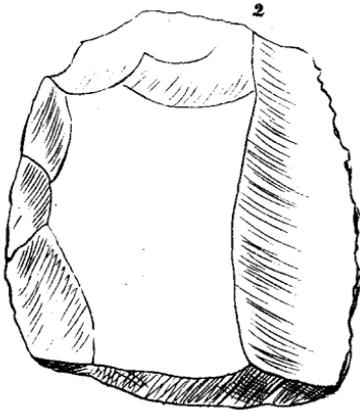
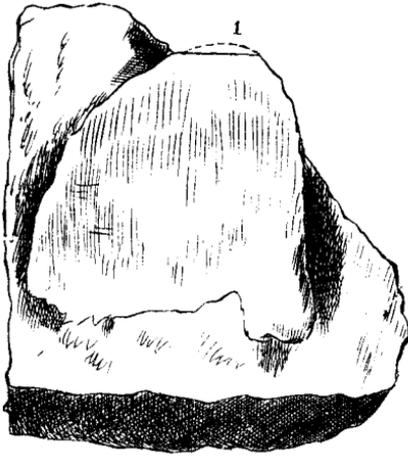


Fig. 2. -REMAINS OF CAVERN ON PASS OF NAHR-EL-KELB.

(a) Road. (b) Breccia. (c) Roof now removed.
(d) Talus of large stones and breccia. (e) Sea.



1. Fragment of Spear, Ras, Beyrout. 2, Knife, Do. 3, Knife, Ant Elias.
 4, 5, Knives, Nahr-el-Kelb. 6, 7, Knife and Spicule, Helouan.
 8, Modern Strike-light, worn on one side.



FLINTS FROM THE BRECCIA OF THE PASS OF NAHR-EL-KELB.

1, 2, 3, 4, 4a, Knives, or Scrapers.

5, 5a, Spear? or arrow?

In the cave earth at Ant Elias there are numerous and well-made flint knives (Pl. II., Figs. 2, 3). Some of these are very thin and delicate. There are also scrapers rounded and chipped at the edges, and many cores and minute flakes. A few of the fragments of bone are distinctly charred. Some of the knives and bones are encrusted with stalagmitic matter, but not in sufficient quantity to cement them together; and at the sides and front of the cave there are knives and fragments of bone enclosed in stalagmite, which is of a different colour and texture from that of Nahr-el-Kelb, and contains shells of a small *Helix*. Several specimens of the large edible *Helix* were found in the cave earth, and one shell of a small *Turbo*. No implements other than knives and scrapers were found, except a pointed instrument about four inches in length, and an inch thick at the butt, which had been roughly fashioned out of limestone.

According to Lartet (*Comptes Rendus*, 1864), Dr. Hedenborg was the first to direct attention to the Ant Elias caves, but he does not seem to have examined their contents. M. Botta was the first to notice the rock shelters near the Nahr-el-Kelb River, which Lartet himself afterwards explored, and which are obviously more modern in their contents than the breccias of the Nahr-el-Kelb Pass.

The CHAIRMAN (Sir H. Barkly, G.C.M.G., K.C.B., F.R.S.)—I have before me a list of gentlemen who may offer some remarks on the very able paper just read, and in asking them to do so I will preface my invitation by saying that I trust they will keep, as far as possible, to the subject of the paper which is a very wide one. I now call upon Professor Wiltshire.

Professor WILTSHIRE, F.L.S., F.R.A.S., F.G.S.—I did not expect to be called upon to make any remarks, and therefore have not come prepared to speak upon the subject so ably dealt with by Dr. Dawson. I have consequently, only to express my great satisfaction at having been enabled to listen to the important lecture in which the learned Professor has so eloquently brought before us the facts bearing upon this subject. Wherever we go over Europe we find some traces of our remote ancestors. I was very much struck, while on a visit to Iceland last autumn, to find in the Museum at Reykjavik implements identical in character with those that are found in different parts of Europe; but beyond saying this, I have only to express the gratification I have derived from the interesting remarks we have all listened to, and to thank Dr. Dawson for the information he has afforded us.

Mr. S. R. PATTISON, F.G.S.—I have nothing to add to the important particulars laid before us this evening by Dr. Dawson. I think, however, it is extremely fortunate for us that one who is acquainted with both hemispheres and who is also well versed in all the sciences cognate with this subject, should have chosen as a field for his latest researches a portion of the globe which is

from many other circumstances so deeply interesting to us, while it is also a matter of special good fortune for this Institute that its members have had the opportunity of hearing the results of Dr. Dawson's investigations brought before them in so interesting a manner. There are some of the prepossessions of the scientific mind that have been a little displaced by the facts just laid before us. There has long been a notion that if we were to explore the East we should find an absence of evidence of the palæolithic period—of the old flint implement period—and that during the time that was going on in the western part of Europe there was a civilisation existing in the East from which our own barbarism was, as it were, a degenerate offshoot. This has, however, been entirely displaced; and it is now quite clear that the East presents the same phenomena of a rude palæolithic age as are found in the West; consequently one can no longer raise arguments on the old assumption. What we have now learned also settles another negative, namely, with regard to the old gravels—older than the breccia of the Lebanon caves or any of our caves,—the gravel that fills the valley which General Pitt Rivers has described, we may now, perhaps, regard it as proved (although with the modesty of a true scientist, Dr. Dawson reserves to himself the right to await and consider further evidence on the subject) that the flints found there are not of human manufacture. The conclusion is that there is nothing in the case in point that ought to disturb the received chronology of the West; so that we therefore have a confirmation of the fact that the great mammalian epoch of the Pleistocene period was developed there as well as here. There are two great stages of that period—namely, the one exhibiting extinct animals, and the other or reindeer stage, as shown especially in the south of France and in our own country,—periods of which we have heard something from the Rev. J. M. Mello in his interesting account of the Cresswell caves, and as to which we may be permitted to entertain a hope that further researches in the same direction will enable us to correlate the facts so as to form a system of chronology which may be of service with regard to those spots left vacant in historical records. There is ample room and verge enough in the written record to allow for the occurrence of those facts of which we have heard to-night, within the historic period. I think the Institute owes a deep debt of gratitude to Dr. Dawson for having so kindly prepared for it so valuable a paper containing the stores of information he has been enabled to obtain in the East, because his facts not only come as the results of observation made in the ordinary way, but are rendered the more valuable as coming from one who, both on the American continent and this, has had abundant means which he has well used of informing himself and others on this important subject.

Professor WARINGTON W. SMYTH, M.A., F.R.S., F.G.S.—I regret very much that, through my own fault, I have heard very imperfectly the interesting paper read to us this evening, and that therefore I am unable to respond as I should like to do to the invitation proffered to me that I should speak in regard to the numerous and curious matters that have been brought

before us by the learned Vice-Chancellor of McGill University. Dr. Dawson has the advantage of being, in a certain sense, a comparatively young geologist, although an experienced man in his own country; and he has, further, had the opportunity of visiting those Eastern districts of which he has spoken something like a quarter of a century after the appearance of the remarkable volume published by M. Boucher de Perthes, which led to a resumption of the search for the relics of ancient man both in the caves and in the gravels. first in France and then, following up the French investigations, throughout the whole world. I had the disadvantage of travelling in many of those countries in which research has now been made, before M. Boucher de Perthes had revived the interest felt in this subject. There was a time, long before the discussion of his discoveries, a time known to us by the labours of Cuvier, and especially by the late Dean Buckland, when it was ascertained that the relics found in the caverns of various parts of Europe were among the most interesting facts a geologist could possibly have to consider. But a period of torpor succeeded, and for many years together our geologists and naturalists did not appear to interest themselves in the further search for information on this subject, even in those parts of our own country which had given rise to such interesting discussions years before. At that period, therefore, we learned nothing of the flint implements which now excite so much interest, and paid very little attention to those ancient arts that were exhibited in the cutting of stones in various ways, or to those other topics which, unfortunately, I have so indiscriminately gathered from the lecture of this evening. I at any rate feel this; from what has been brought before us it is evident that, although some of Dr. Dawson's statements are a little startling, while others may seem rather difficult of acceptance without further discussion, and others, again, may be said to be somewhat puzzling to those who would like to find their explanation, yet of this we are all assured, that the learned Professor is a man of so much experience in geology, and has shown in so many of his books a disposition to battle fairly with the facts and inferences belonging to this subject, that we may safely trust what he has stated to be the truth as far as he has been able to look into it.

Professor T. RUPERT JONES, F.R.S., F.G.S. (a Visitor).—I must add my thanks to those of other speakers for the remarkably interesting paper the learned Doctor has laid before us. I regard the clearness with which he has developed all his facts and inferences as indeed admirable. He has certainly given us so much valuable matter in so short a time that I have no doubt many persons who are not very well competent to follow the details, because they are not quite such geologists as himself, may, perhaps, have lost something of his remarkably able exposition; and I hope, therefore, it will soon be printed, so that all may be able more fully to understand and appreciate it. May I be allowed to suggest one or two points on which we might ask for some illustration? I am sure Dr. Dawson will allow me, as an old friend, to offer such criticism as I am able; and, as he himself has found it necessary to abbreviate his paper, so will I endeavour to compress into a few

words what I have to say. I would, in the first place, remark that there is in the British Museum a very remarkable flint implement which has been brought from Egypt. It is, probably, not prehistoric; but it is, nevertheless, of very respectable antiquity. I allude to a very fine dagger-shaped flint, with the handle still in its place; and, what is more, it has remnants of the sheath on it. The only comparable specimen I know of is that illustrated and described by Christy and others as found in Mexico, where it was at one time, no doubt, an honoured if not revered sacrificial knife. Dr. Dawson has brought before us to-night the mode in which implements are made of flint, and has shown how men having similar means and intentions, and aiming at similar ends, must necessarily, out of the same materials, arrive at similar results. This, doubtless, has been the case all over the world. Flint is very common, and occurs in every limestone. It is not peculiar to any place, and is as common in the Egyptian limestone as elsewhere. Wherever flint is found it has been made into flint implements, and these have always been made in the same way, because it always breaks in the same way. But with regard to this old gravel of sandstone, flint, and calcareous sand of the Nile Valley, I would ask Dr. Dawson to think over the point he has stated in relation to the number of flint chips which occur with bulbs of percussion, and those which occur without such bulbs. He is too far away from the place now to collect statistics; nevertheless, they will be necessary to enable us to arrive at a conclusion as to whether, under his mode of putting it, nature has made many bulbed flints. I do not think it likely that many can have been accidentally produced; because it requires a continued succession of blows in a particular line, on one continuous edge, to produce bulbed flakes. Nature may knock boulders together by thousands and millions, but she can very seldom repeat her blows in exactly the same way upon the same edge, one block coming down upon another, and the upper stones knocking one edge of the suffering block, so that flakes are regularly driven off with bulbed faces. Frost does not act so unless there are little fossils or faults in the flint that might enable it thus to cause a bulb. I was under the impression that General Pitt-Rivers found something more than a simple flake, and I think it would be well worth the while of those who have heard Dr. Dawson's paper, to do what he has recommended, and read General Pitt-Rivers' memoir, so that they may judge for themselves. There are some very good observations on the method of flint implement-making in a Report on the manufacture of gun-flints by Mr. Skertchly. There are some other remarks I should like to make: I think it not impossible that man may have lived in Egypt in those very remote times when there were only islands in what now forms the Egyptian area, and when the river ran among them. There is no reason why this should not have been the case; and if this were so, there can be no reason why there should not be artificially-made flint-flakes in those ancient water-courses. They are undoubtedly old. Of course, geologically speaking, the period referred to may be regarded as only yesterday or last evening, which would signify a few hundreds

of thousands of years ago; and I should like to ask Dr. Dawson to favour us with a comparison of dates as between the period when Egypt lay at a different level than now, and that when the Syrian caves were at a high level. Can he say whether they were coincident? If so the Lebanon hill district has been raised up subsequently. But whether this be so or not it seems to me to be a kind of discrepancy to use the word "antediluvian." Geologists do not allow such a word as it is used in the ordinary sense. There have doubtless been deluges—and those enormous deluges; in fact, it is shown that there was a geological period in which there were so many deluges, one after another—it may be a few years apart, or it may be hundreds of years—which affected all the peoples in perhaps every part of the world; and it is probable that when the remnants of those peoples came together in the course of time, and had, every one of them a traditional deluge to speak of, this may have been the origin of the idea of a great universal deluge such as has been commonly understood.* The geologist puts these diluvial times down as having occurred in the post-glacial period after the great ice era,—the period when one or both polar parts of the world were gradually relieved of the enormous ice-fields which had previously existed, as the ice melted and disappeared with deluge after deluge, the seasons becoming hotter, the effect of the successive floods and movements of the land was to cut off one people from another and create human isolations on a grand scale, leaving remnants of the antediluvian peoples, which became the ancestors of the different nations now found in various parts of the world. It would be very interesting to know how long after the post-glacial period the elevation occurred which brought up the Syrian hills from the level which occupied the place where the Mediterranean is now. I merely say this because it would bring the matter more closely home to us to be enabled to have something like comparative data of which we could speak. But something of this sort we have already, for we can point to the evidences of those upheavals—some of which formed the land occupying the area of the existing North Sea, when there was one great continuous valley from the Rhine to the Norwegian area, and when the land was so high that the North Sea Valley and, doubtless, the English Channel were inland valleys. At that time men inhabited England—how long ago we know not; but among geologists I may mention Prestwich, of Oxford, and the Rev. Osmond Fisher, of Cambridge, the former of whom considered that it must have been at least ten thousand years, while the latter thinks it must have been more. I hope Dr. Dawson will think over these remarks, and if he can find time to offer a few words in reply I should be glad if he would do so.

Colonel J. HERSCHEL, R.E., F.R.S., F.R.A.S., having said a few words,

Mr. W. ST. CHAD BOSCAWEN.—Although unable to speak upon this subject from the geologist's point of view, I may state that I have examined the caves that have been described by Professor Dawson, and that I spent some

* This subject is specially treated in Sir J. W. Dawson's reply.

time at the mouth of the Nahr-el Kelb. I visited it four or five times, and I am able to endorse a good deal that has been said with regard to the remains there. There is one point I think I may throw a little light upon—namely, as to the late existence and use of stone implements in Syria. In the year 1879, when travelling in Northern Syria, I obtained, while in the neighbourhood of Aleppo, from some people in the adjacent villages who had been digging a quantity of soil from one of the numerous mounds on the plain for the purpose of making an addition to a mill-dam, a number of stone implements. Among them was a very fine green-stone axe, which is now exhibited in the Museum at Oxford. I also obtained at the same time a number of flint implements. The axe I have referred to showed signs of having been used as a sacrificial implement. It exhibited a peculiar method of grinding which I had never seen before, one edge being ground to a sharper angle than the other,—one being the curve of a circle, while the other was a sharp angle. The implement also seemed to me to bear traces of having been decorated. In Beyrout I obtained several flint implements, and some other implements of a black stone, which were curved as if the back part were used for polishing and the other for cutting. The existence of such stones throughout the north part of the Orontes valley and about Aleppo is well known. I saw half a basketful of various stone implements in the house of a German gentleman. In the ruins of Carchemish, also, some had been found by a German who had been there before me. But there was one curious fact which seemed to me to indicate an old historic period,—I allude to pieces of sculpture standing among the ruins of Carchemish, and representing some figures of gods, one of which held a large battle-axe in its hand, the axe being lashed to the handle, as the strapping of the marking of a band used for the purpose of tying the handle to the stone is distinctly shown. It may also be remembered that in one of the lists of tribute to Thotmes the Third, mention is made of axes of green stone forming part of the tribute which the Hittite kings and princes of Egypt presented to that monarch; so that the use of stone axes is clearly brought down to an historic period. As to the custom of cave-dwelling in Syria, we know that in the interior it always has been and still continues to be a mode of dwelling in the East; but it is for the geologist to say how far that can be carried back. It is a singular fact that the earliest known sign for a dwelling of any kind in the cuneiform inscriptions—is the figure of a cave. I have no authority to speak as a geologist, as I hardly know one stone from another; but I have thought that the points I have mentioned, as bearing on other branches of study, might be deemed of interest.

Mr. D. HOWARD, V.-P. Inst. Chemistry.—I regard the paper we have heard to-night as an exceedingly interesting one; but have no desire to take up the time of the meeting by making many comments thereon. It appears to me that Dr. Dawson has thoroughly studied the customs of those whose habitations we have been considering, and has not only kept a good look out in all directions whence attacks might be likely to come, but has cautiously guarded himself against them. It is very pleasant, apart from the great interest of his

paper, to find so difficult a subject handled in so masterly a manner, and to note that he has been content to study and present the facts as they really are, without evincing the too common desire to prove some pre-conceived theory as having been ascertained and settled by the discovery of flint implements. I cannot but believe that the more we talk of flint implements in this spirit, the more truth shall we elicit, and the more shall we find that the phantoms created by them have no tangible existence. There is one point that strikes me as very interesting, and that is the singular verification of the flint implements of sacrifice spoken of in Egyptian history, furnished by the evidence of the Egyptian specimens now in the British Museum. It is well known that to this day flint implements are used for sacrificial purposes in the South Sea Islands. One of my brothers has in his possession an axe which has been used within the memory of living men for human sacrifice, and I consider it to be a curious survival of an ancient sacrificial custom, when we find that in Egypt they used sacrificial knives for purposes of embalmment. It may also have been that the Egyptian surgeons who knew a good deal, had discovered that a clean-cutting surface was a very good thing for operations in hot climates. But the fact that throughout the world flint knives have been used for sacrificial purposes, is a strong evidence of the survival of an ancient custom. As a general rule it may be taken that anything connected with sacrifice is also connected with the early history of the human race. The singular aversion to eating the horse among European races seems to me to be a survival of the time when it was a proof of Odin worship to eat horseflesh. The horse-sacrifice was one of the prominent features of the Aryan system of worship, and I think it most interesting to find in these things the evidence of the long survival of ancient observances.

J. RAE, Esq., M.D., LL.D., F.R.S.—I came here to-night with a good deal of pleasure as I expected to hear much that was valuable, and I am extremely gratified by what I have listened to. I cannot, however, offer much in the shape of addition to the information already furnished. My only acquaintance with people using stone implements is with the Esquimaux, and I doubt whether the form in which they work up the stones they employ as implements at the present day, is altogether like that found in the caves and gravels of this and other countries. They are generally very skilfully made, and probably they have acquired a greater power of fashioning them neatly or of finishing them off; but they cannot have learned how to do this from any other people, in the case at any rate of one or two implements, for they are made by a people who never came in contact with those of any other nation than themselves. The way in which they work up one or two implements that are made of green-stone is something wonderful, considering the materials they have. I have a woman's knife which, I think both Sir John Lubbock and Mr. Evans, as well as other authorities, speak of as being one of the most neatly made implements it is possible to manufacture out of such very hard material. I have another green-stone implement, of about eight or nine inches in length, made into an ice-chisel as neatly as any artificer in this country could fashion it. And all the other Esquimaux imple-

ments are made in a very perfect manner. I am, however, not sufficiently experienced in the forms of tools and weapons made by other peoples to be able to say anything further than that I have had great pleasure in listening to Dr. Dawson's admirable paper. It has been a source of much instruction to me.

Mr. E. CHARLESWORTH, F.G.S. (a Visitor).—I can only express the interest with which I have listened to the paper read by Dr. Dawson. There are one or two points on which I may be allowed to remark, without very deeply trenching on the rule the Chairman has laid down. My friend, the eminent mineralogist and geologist Professor Warington Smyth, has referred to the French investigator M. Boucher de Perthes; but we ought to remember that long before his time a native of this country, resident in Norfolk, Mr. Frere, had in reality laid the foundation upon which geologists have since carried man back to the period of the mammoth. Nobody believed him at the time his paper was laid before the Royal Society, although it was printed in their Transactions, the fact being that the whole learned world read that paper, discredited it, and entirely forgot it. Therefore, when we quote M. Boucher de Perthes, and give him credit for having reminded us of the state of things which existed so long ago, we ought not to forget that the whole question of the origin of man, and the evidences carrying him back to the period of the mammoth, was argued by one of our own countrymen before the researches of M. Boucher de Perthes were commenced. I may here be allowed to make a remark on which perhaps Dr. Dawson will give his opinion. One of the things that have greatly puzzled me, and which I mentioned at a meeting of the Victoria Institute on a recent occasion, is the fact that while these flint implements are found in such vast abundance in the gravels around London and in Norfolk and other parts of the kingdom, there are but very few that exhibit any traces of abrasion. As a boy I lived in Suffolk, and used to spend a great deal of my time among the gravels of that county hunting for fossils—principally the fossil sea-urchin. I found in those searches that a large proportion of the fossils were much rubbed and worn. Here and there there might be one in a tolerably perfect state, but the majority were much abraded; whereas if we see a collection of flint implements we invariably find that there are scarcely any signs of abrasion on any of them. They are found side by side with the fossil urchins and other things which are abraded, and I should like to know how it is that the flints present so little trace of the same action. Another point on which Dr. Dawson might kindly enlighten us is this: As a resident in America, he is doubtless familiar with a vast number of the implements found on that continent. Can he tell us, approximately, what is the geological age of those implements? Both the mammoth and mastodon are found in association with them there; but in this country we find the mastodon only, that mammal being later than the mammoth in geological history. Is any portion of the beautiful arrow-heads and other flint implements of America carried back in that region to the mammoth period? Dr. Dawson spoke very cautiously of finding

in the gravels of Egypt traces of human work. We must recollect how much the gravels around London have been explored. Priestley, a surgeon in London, who added so much to the early history of geology, worked nearly all his life among the gravels of London as well as of Suffolk and Norfolk, and he never came across one of these flint implements. Therefore, the fact that doubtful implements have been found in the gravels of Egypt leaves it open to us to say that, if we could carry out a large amount of research in that country, we might find as much evidence of human handiwork there as we do in England and other parts of Europe. In conclusion, I will only express the warm thanks we must all render to Dr. Dawson for the really great intellectual treat he has afforded those present this evening.

The CHAIRMAN.—I am sure this meeting will heartily join with me in the duty we have now to perform of thanking Dr. Dawson for the very able and interesting paper he has read to us. In the presence of so many eminent geologists it is not for me to say a word as to whether in my opinion he has established the principal points he has put before us. It seems that Dr. Dawson failed to discover any worked flints in the Pleistocene gravels of Thebes or elsewhere, but he found evidence in the bone breccia of the Lebanon caverns sufficient to satisfy him that they were occupied by the earliest race of mankind, whom I suppose we must continue, in the present state of our knowledge, to call post-glacial men. Whether or not the learned Dr. has made out the points he has started it is not, I repeat, for me to say; but I would, at any rate, impress on this meeting the great value attached to the personal testimony of a thoroughly trained geologist like Dr. Dawson on questions of this kind, especially when he has had the opportunity of recently visiting the places of which he speaks. It is one of the objects of this Institute to elicit and discuss questions of this kind, and I am sure no one will gainsay me in asserting that we are deeply indebted to Dr. Dawson for a very profitable and successful paper and discussion thereon. Dr. Dawson will now say what he may deem fit in reply to what has been put forward by those who have spoken.

The AUTHOR.—The answers to the questions that have been put and discussed would be quite sufficient to form the materials for a second lecture and I think it would be very unwise to attempt replying to them all to-night. Upon a few of them, however, which are of the greatest importance, I think a few words may be said. My friend Mr. Pattison referred to the question of civilised men existing at the very early periods spoken of. That question is one which I do not think is settled yet. It may have been that races were dwelling in the Lebanon mountains in a very rude condition when there were more civilised races on the plains upon the borders of the Mediterranean and in the adjacent valleys, of which we have no knowledge. That is, indeed, one of those negative points on which one ought not to say anything. My friend, Professor Rupert Jones, has brought up some interesting points such as one might expect a geologist of his experience to put forward. With regard to the flint dagger in the British Museum, to which he has

alluded, it is, doubtless, a very interesting specimen of the flint instrument, and I may add that the flint implements and knives we have obtained from Egypt are as beautiful examples of fine workmanship as we have found anywhere. In the British Museum there are several fine specimens of these highly-finished flint knives from Egypt, which are sure to be of great interest to any one who goes to look at them. With regard to the point referred to as to the similarity prevailing between the implements found in different parts of the world, it would seem that man, in all times and all countries, made them exactly on the same principles. A great deal depends, of course, on the similarity of the materials used; and then again we must look to the similarity of the social conditions under which men were placed in primitive times, the instincts they had to gratify in accordance with those conditions, and the means they found whereby to fulfil their few and simple wants. It would indeed appear that some of our very early ancestors of the human race found out the way to make implements perfectly suited to satisfy these wants, and those who came afterwards adopted the same methods, which they were unable to improve upon. It is true that we have not found palæolithic tools in the very oldest of the Lebanon caves similar to the great, rude, hatchet-like flints discovered in the French and other gravels; but it is, of course, possible that the very ancient people who lived in that age may have used such implements, not in the vicinity of those caves, but at other stations. We have to take into account the fact that those old people were like some of their modern descendants, living at one period by the river sides, where the gravels are, and at others in the woods and mountains; and that they may not have carried the tools and weapons they used at one place into the other where they were not needed, but secreted them in hiding-places after the manner of the American Indians down to the present day. I do not know the actual use or uses of those remarkably rough chisels and axes that are found in the gravels; but I suppose they were used for the same purposes as the large polished hatchets of a much later age, such as digging the earth, hollowing out wood, and other things of a kindred nature. That, at any rate, is what an American would think of them, and we must bear in mind that in districts like the south of England, as well as in Egypt and Lebanon, where there is plenty of flint, the working and chipping of flint would be practised in a way that was pretty much the same throughout, but scarcely the same as that adopted where the stone was of a different kind. In districts where there was jade and green-stone and not flint, the implements would be made differently from those constructed of flint; and this leads me to another point. We are, I think, too often apt to attribute to time what really belongs to space, and I feel pretty sure that some of my friends have been led into this error. With regard to the question, how many flakes and bulbs might be made by nature herself; that is no doubt a very apposite question, and in looking at such a deposit as that at Jebel Assart and taking out the broken stones, one must come to the conclusion that it might possibly be that an accidental stroke

given occasionally would produce this kind of result [showing a piece of flint]. I do not throw any doubt on the evidence of human workmanship as derivable from this kind of appearance; but it must have occurred pretty frequently in the natural process of things that flint was accidentally thus fractured. I think, moreover, that where one finds a flint that might have been a human implement, or might have been the result of natural fracture, he is not justified in saying it was the result of human handiwork unless he finds something else to confirm that assumption. The archaeologists certainly have more confidence in these things than we as geologists should have. As to the term "antediluvian," I may state that I used it as an equivalent to "post-glacial" in geology. Geologists are much alarmed at the present day by the idea of saying anything at all about the "Deluge." In old times they used to attribute almost everything to the Deluge, and in fact they almost rode the Deluge to death; but modern geologists, as I have said, are afraid of speaking of the Deluge. We were beginning to go back a little in that direction, as we find that after the great submergence of continents which took place in the Pleistocene age, and to which I have referred,—that subsidence which seems to have affected all the northern hemisphere,—there came a period which Lyell properly called the second continental period, and which we sometimes call the post-glacial period, when the continents were larger than now,—when England was connected with the mainland of Europe, and the migratory animals walked along the dry land from Germany to England, a period during which England was, doubtless, first colonised, when man lived in a larger world and when men were of huge stature and great physical power, with bigger limbs and bigger heads, so that I hardly know what we should have been if with our present culture we had possessed the physical power of those post-glacial men. I have great respect for those men. They unfortunately came to an untimely end, because that continental period was followed by a second subsidence, which must have been a great and a terrible affair. We now know the Deluge to have been an historical event, the record of which is preserved not only in the Bible, but in other history. We also know that there was a great submergence which closed the second continental period. Whether it was a cataclysmal event which occupied only a short time, or whether it was more gradual and lasted a long time, is a matter which might be disputed, for it depends on the interpretation given to the facts by different schools of geology. But at the time when multitudes of those immense extinct mammals, such as the mammoth and the rhinoceros were swept away by the subsidence which submerged such ranges as the hills of Lebanon and of this country, so as to spread it over with gravel, which is not altogether local, but some of which was swept from the north of England and Wales over this district, the event was of a character which affords evidence of a great and serious cataclysm. As to the time when this took place, and its duration, we are not in a position to say much; but we come to the conclusion that the older part of the human period was separated from the more modern by a very great physical

break or hiatus. A thing of great interest to me in Lebanon was, that there seems to have been left in the caverns there good evidence of a people who really lived in that old post-glacial and second continental period ; and I have no doubt that we shall get further evidence of this. We may also get evidence of the fact that there were civilised men existing then. But during the earlier period of the existence of the human race, before men obtained a knowledge of metals, men, whether civilised or not, must have depended far more on stone implements than they do now. Some of the most civilised of the native races in America cultivated their fields, and did it well, with stone implements, many of them as rudely made as the old palæolithic tools or weapons, and I am somewhat inclined to suspect that some of the implements we find in the gravels belonged to and were used by palæolithic agriculturists. I am not certain that they were quite such savages as we suppose. Mr. Charlesworth has raised a curious point as to the implements found in the gravels not having been rubbed or abraded. I do not know the extent to which this is general, but if it be a general thing, it would lead to the conclusion that, after the pebbles were rounded, the flint instruments were transported from elsewhere, and by some means became mixed with them. It might be a curious point to follow up. I have been asked as to the comparative ages of certain remains found in America. I think it probable that the mastodon lived longer there than in this country—say up to the time the mammoth became extinct—that both lived quite into the modern period, and probably up to the time when the first men made their appearance on the American Continent. The flint implements found there are on or near the surface and mostly in alluvial deposits, so that we cannot say they are any older than the modern period. There are some a little more ancient than the rest found in the Californian gravels and in the rivers of Pennsylvania ; but I do not think we have the right to say that any of them are older than those of your post-glacial gravels. Therefore we, in America, are very much in the same position with you in regard to this point. I have only further to say that I am very much obliged to all who have spoken and to the meeting generally for the kind way in which they have received what I have stated, which I know has been somewhat fragmentary.

The meeting then examined the specimens and afterwards adjourned to the Museum, where refreshments were served.

ADDITIONAL NOTE BY SIR J. WM. DAWSON, K.C.M.G., F.R.S.
ON REMAINS FROM THE LEBANON CAVERNS.

THE specimens collected in the Lebanon caves have now been arranged in the Peter Redpath Museum of McGill University, and I have had the pleasure of showing them to Professor Boyd Dawkins, on occasion of his visit to Montreal in connexion with the meeting of the British Association in that city. The results of this re-examination present, however, little in addition to the facts stated in my paper of May 9th.

In the older breccia of the Nahr-el-Kelb pass, all the teeth and bones appear to belong to a few species of large mammals. *Rhinoceros tichorhinus* is represented by several molars and by fragments of the bones. A deer not distinguishable from *Cervus dama* is also somewhat abundant. A species of *Equus* and a species of *Bos* also occur. The teeth of the latter are too imperfect for determination of the species. Only a few of the fragments of bone have been subjected to the action of fire. There are no remains whatever of invertebrate animals or of plants. The indications are of hunters subsisting, while sojourning in these caves, on a few large animals, just as in North America certain tribes were accustomed to feed almost exclusively on the bison and the caribou. This would further seem to show that, as suggested in my paper, there were at that time more extensive plains at the foot of the Lebanon than at present.

The inner cavern of Ant Elias has one species in common with the older, namely, the fallow deer. It has also the roe (*C. capreolus*), and one specimen is the lower jaw of a fawn with the milk teeth. There are also teeth of the wild goat, and possibly of the sheep, though the latter can scarcely be considered as certain, and one tooth of the hog (*Sus scrofa*). A very few bones belong to large birds, and there are many shells of *Helix pomatia*, which still lives in the vicinity. Shells of a smaller species of snail, included in breccia at the sides of the cave, do not seem to be connected with its occupation by man. A single marine univalve was found, and seems to be *Trochus (monodonta) articulata*, a species still occurring on the coast. A larger proportion of the bones in this cavern show marks of fire, and the long bones have all been broken to extract the marrow.

The indications in this cavern are of conditions of the Lebanon country and its inhabitants similar to those now existing, except in the greater prevalence of forest; but no signs were found of any intercourse with civilised men, nor did any pottery or bone implements occur. The further excavations now in progress may, however, result in additional discoveries on these points.

ORDINARY INTERMEDIATE MEETING, MARCH 17, 1884.

H. CADMAN JONES, ESQ., M.A., IN THE CHAIR.

The Minutes of the last meeting were read and confirmed, and the following Elections were announced :—

MEMBERS :—

Colonel T. Hyatt, A.M., President Pennsylvania Military Academy.
 Rev. W. M. Lawrence, A.M., D.D., United States.
 Rev. T. H. Turner, B.A., Erdington.

ASSOCIATES :—

The Right Rev. the Bishop of Lahore, D.D.
 S. C. Bartlett, Esq., President Dartmouth College, United States.
 W. Fowler, Esq., M.P., London.
 G. Henderson, Esq., Dulwich.
 Rev. W. W. McLane, United States.
 A. Sinclair, Esq., Brixton.
 P. A. White, Esq., Bromley.
 Miss E. Berkley, St. Leonards.

Also the presentation of the following Works for the Library :—

"Proceedings of the Society of Biblical Archæology."	<i>From the Same.</i>
"Proceedings of the American Antiquarian Society."	"
"Proceedings of the Madras Meteorological Society."	"

A Paper on "Evolution" was then read from the Manuscript by Mr. S. E. B. Bouverie Pusey. A general discussion ensued, in which Professor Lionel S. Beale, F.R.S., Mr. S. R. Pattison, F.G.S., Mr. D. Howard, V.P.I.C., Mr. J. Hassell, Mr. W. Griffith, Surgeon-General Gordon, C.B., and the Chairman took part.

The publication of the Paper is temporarily postponed.

APPENDIX A.

THE "GUNNING NATURAL SCIENCE SCHOLARSHIPS AND FELLOWSHIP FOR THEOLOGICAL STUDENTS" AT THE UNIVERSITY OF EDINBURGH.*

1. Dr. Gunning proposes to assign two hundred pounds annually for encouragement of the study of the Natural Sciences amongst students of Theology.
2. The competition to be open to students of the Established Church and the Free Church of Scotland.
3. The scholarships to be three in number, of the respective annual values of twenty, thirty, and fifty pounds.
4. Each scholarship to be held for three years.
5. The three scholarships shall be decided for the first time in May, 1880.
6. The candidates to be examined in natural history, botany, and geology,

* This statement is inserted, as it will be read with interest by many Members and friends. The Founder has acted upon his own responsibility, and quite independently of the Institute. The scheme is for the purpose of promoting an object in the same direction as that which the Institute was founded to carry out (it is not often that the value of a society's main object is so emphatically recognised).

The fellowship and scholarships can now be competed for by theological students of the Scottish universities "holding to our National Confession of Faith." The Founder writes as follows in regard to the scheme:—"It is now launched. If the idea is good, would not some with more money than this life needs establish similar prizes in connexion with the

by the professors and extra-academical examiners of the University of Edinburgh ; also, in some department of Natural Theology or Christian Apologetics having special reference to the connexion between religion and science, by the examiners to be appointed by the Faculty of Theology in the University of Edinburgh, it being left to the Faculty to choose one of the examiners outside its own body.

7. Each candidate to produce evidence of his having attended a three years' course of study in the Faculty of Arts of one or other of the Scotch universities, and also a declaration that he is on the point of commencing the theological studies enjoined by the Church to which he belongs.

8. If it shall appear to the examiners that there are not candidates whose examination comes up to a due standard of excellence, the scholarship or scholarships shall not be assigned, and the competition shall be renewed between them and other candidates six months subsequently.

9. There shall be a fellowship of the value of one hundred pounds annually, to be held for three years, the first to be competed for in May, 1883.

10. The competitions to be open to students of the Established and Free Churches of Scotland who have completed a three years' course of theological study.

11. The fellowship to be awarded after a senior examination in natural history, botany, and geology, and in their theological studies by the examiners mentioned above in section 6, and on due certification of proficiency as theological students.

“Church of England, the Wesleyan and other Nonconformist denominations in England ? With different platforms, but only one Faith, we could then combine to qualify the rising race of religious teachers with enough of scientific knowledge duly to appreciate and rebut the pretentious sophisms of those to whom the gospel of wisdom, peace, and salvation is hated foolishness.

“My scheme is tentative at present, but after experience of its working will be made permanent. I now see that the scholarships should be competed for annually (and not held for three years), so as to prevent the gainer resting on his oars during the two succeeding years, and also to give unsuccessful men hopes of gaining at the second or third trials. In other words, scholarships should be annual trials as *certamina* for the fellowship, the final prize which implies six years' study of geology, botany, and natural history. By having these degrees of scholarships, more students will be induced to compete, as some despairing of being first may hope to be second or third. Of course, with sufficient means more of each could be established.

“By this means students for the university who have a knowledge of the three sciences named will be centres of influence against false science in the districts in which they may labour.” The Founder (now resident in South America) concludes by referring to the value of the Institute's “Transactions” to ministers of the Gospel in their respective districts.

12. The fellowship not to be assigned if no competitor be found duly qualified ; and the competition, in that case, to be renewed in six months.

13. Each holder of a fellowship at the close of his three years' occupancy either to produce a dissertation or to deliver a few lectures on some subject related to the connexion between the Scriptures and the natural sciences ; the Faculty of Divinity, and the three professors of the natural sciences in the University of Edinburgh to decide whether the dissertation is worthy of publication or the lectures of being publicly delivered.

14. The Senatus Academicus of the University of Edinburgh at any time after six years subsequently to the awarding of the first fellowship in 1883, to have the power of altering the above conditions, but only in such manner as may seem to them more conducive to the study of the natural sciences by theological students in Scotland.

P.S.—Dr. Gunning offers these scholarships and the fellowships for a period of nine years. But if they answer the purpose designed of fully encouraging the study of the natural sciences by theological students, it is his wish and present intention to found them permanently.*

* It is hoped that the publicity again given to the scheme may help to this end.

APPENDIX B.

It has been remarked by many that they have found the *Journal* of much use when preparing lectures to show the falsity of the theory so often propounded, "that science and philosophy were alike opposed to religious belief." This idea has its advocates both at home, abroad, and in some of our colonies; and in many places the members of this Institute have made strong efforts, especially in Australia and New Zealand, to oppose it, by lectures, the circulation of the Institute's *Journal*, and the republication of portions thereof.

That the use thus made of the *Journal* may not have been in vain, the following extract from a Dunedin (New Zealand) newspaper shows.

It is entitled "The Abjuration of the Vice-President of the Free Thought Association."

"Mr. Joseph Braithwaite, the Vice-President of the Free Thought Association, has (1884) resigned his position and membership in the Association. He has written a long letter, giving his reasons for the retirement, the principal of which is, that no good can be accomplished by mere negation, while positive teaching is impossible on the basis of the Association. In concluding his letter, he says:—'I am not disposed to ignore the claims of traditional teachings—they have their value; nor do I see the utility of rushing into extreme scepticism because one leaves the Church. Religion, that is, a belief in God and immortality, and the influences connected therewith, is natural to man, whatever his intellect may say. This is so because it is based upon his higher necessities, which, like everything else in nature, must have some corresponding reality. My opinion is, you might as well try to drive back the waves from the seashore as to eradicate religion altogether. Creeds and religious systems may change, religion never. Tear down the churches to-day, to-morrow they would be up again. I am satisfied the Association will never make headway among the people until it can present a motive power for good higher than the one they have got already, and to do this it must have a religious basis, or it will never reach their higher aspirations. I have adopted these views after years of (I hope) serious study and reflection, and a degree of anxiety known only to my most intimate friends. Hence it will be seen that I cannot co-operate any longer with the Association, nor with the Children's Lyceum, which I specially regret. Nevertheless, I shall ever be found standing up for civil and religious liberty, and the completest toleration one to another.'"