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PROCEEDINGS

OF THE

ASIATIC SOCIETY OF BENGAL.

EDITED BY

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THE HONORARY SECRETARY,



JANUARY TO DECEMBER,

1899.



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THE

# AMERICAN SOCIETY OF PHYSICIAN-SURGEONS

INCORPORATED IN THE DISTRICT OF COLUMBIA

OFFICE OF THE SECRETARY

1907

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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL.

FOR JANUARY, 1899.

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The Monthly General Meeting of the Asiatic Society of Bengal was held, on Wednesday, the 4th January, 1899, at 9 P.M.

A. PEDLER, ESQ., F.R.S., Vice-President, in the Chair.

The following members were present:—

Captain A. R. S. Anderson, I.M.S., Mr. J. Bathgate, Dr. T. Bloch, Babu M. N. Chatterjee, Mr. W. K. Dods, Mr. F. Finn, Captain W. Haig, Mr. W. A. Lee, Mr. L. de Nicéville, Mr. J. D. Nimmo, Mr. C. Saunders, Mr. M. J. Seth, Mr. E. Thornton, Major L. A. Waddell, I.M.S., The Revd. J. Watt.

*Visitors*:—Major S. Burrard, Mr. W. F. Reynolds.

The minutes of the last meeting were read and confirmed.

Eighteen presentations were announced.

Nawab Ali Hussain Khan, Director of Public Instruction, Bhopal State; Lieutenant M. Ll. Ferrar, 12th Kelat-i-Ghilzai Regiment; Dr. Frank Gerard Clemow, M.D. Edin., D. P. H. Camb., were balloted for and elected Ordinary Members.

A vacancy having occurred owing to the death of Dr. G. Bühler, the Council recommended Dr. A. F. R. Hoernle, C.I.E., for election as Honorary Member at the next meeting.

It would be superfluous to recount to the members of the Society which Dr. Hoernle has so long and so eminently adorned the services

which he has rendered to the Science of Philology, were it not desirable, in the interests of that Society itself to place on record the history of the connexion which has existed between it and one of its most brilliant members. Opportunity should also be taken to supply the future historians of the Society with a few brief facts concerning the life and works of a scholar of worldwide reputation.

Augustus Frederick Rudolf Hoernle, C.I.E., Ph D., was born at Secundra, near Agra, on the 19th October, 1841. His father was the Reverend C. T. Hoernle, who was during the greater part of his life a Church Missionary in India, and he came of an old German family, the earliest recorded ancestor living in the 15th century. He was taken home in the year 1848, and was educated first by a private tutor, and then, successively, at the Paedagogium in Esslingen, at the Gymnasium in Stuttgart, and at the 'Klosterschule' in Schönthal, all which places are in the Kingdom of Württemberg. In 1858 he went to Basel University, to study Philosophy with Professor Steffensen, to whom he twenty-two years later dedicated his first great work, the Gaudian Grammar; and, in 1860, to London, to study Sanskrit with Professor Goldstücker. He returned to India in the year 1865, and was appointed Professor of Philosophy and Sanskrit at Jay Narayan's College in Benares. He was elected an Ordinary Member of this Society at the December Meeting of the year 1872, his first contribution to the Journal of the Society, entitled *Essays in Aid of a Comparative Grammar of Gaurian Languages* which formed the basis of his Gaudian Grammar subsequently published, having appeared a few months previously. Dr. Hoernle spent the years 1873-1877 at home in England, where he was actively employed in the preparation of the latter work, which appeared in 1878, under the title of *A Comparative Grammar of the North-Indian Vernaculars*. In the same year he came out to India again as Principal of the Cathedral Mission College, which position he held till the year 1881, when he was appointed Principal of the Calcutta Madrasah and Professor at the Presidency College, posts which he is still nominally holding. In 1892, he was placed on special duty by the Government of Bengal to prepare an edition of the Bower Manuscript, and at present he is again on similar service, being employed by the Government of India to report on the British Collection of Central Asian Antiquities. In the year 1897 his high scientific attainments were recognised by Her Majesty, who conferred upon him the title of Companion of the Indian Empire.

It has already been stated that Dr. Hoernle joined this Society in the year 1872. He was elected Honorary Philological Secretary in 1879, and it is difficult to express in adequate terms the indebtedness of the Society to him for the tact and learning with which he edited its

*Journal* in the succeeding twelve years.\* He resigned this post in December 1891, but continued to give the Society the benefit of his learning and of his experience as a member of the Council. He was elected President in the year 1897. He has thus served the Society in nearly every possible capacity. As an Ordinary Member, he enriched its *Journal* with essays which upheld its reputation among European scholars; as the Editor of Part I of that *Journal*, he maintained its character, and with kindly words of encouragement and advice introduced to its pages younger students who have since themselves helped to maintain the high repute of the Society; and as President, he successfully guided the Society through a year of no common difficulty.

Dr. Hoernle's scientific writings are numerous,—how numerous it is unnecessary to tell readers of our *Journal*. It must suffice to mention a few of his more important works. His *Comparative Grammar of the North-Indian Vernaculars* has already been mentioned. It at once established his fame throughout Europe, as a philologist of the first rank. It was followed, in the year 1880, by his edition of Caṇḍa's *Prākṛta-lakṣaṇa*, a Grammar of an ancient form of the Prākṛit Language. His next work was the Comparative Dictionary of the Bihārī Language, written in collaboration with Dr. Grierson, which was commenced in 1885, the further issue, after the first two numbers, being temporarily suspended. In 1888-90 appeared the two volumes of his edition and translation of the seventh *Aṅga* of the Jains, entitled, the *Uvāsaga-dasāw*, in which he first appeared as an authority on the religion of that important sect. Since 1892, he has been principally occupied with the examination of the ancient Sanskrit literature discovered in Central Asia, and the fruit of these studies has been his magnificent edition of the Bower Manuscript, which has been issuing in parts since the year 1895. It is as a numismatist, as an archæologist and as an epigraphist that Dr. Hoernle has been best known to the scientific world of late years, and his numerous papers on this subjects in our *Journal* and in the *Indian Antiquary* are accepted universally as of the greatest and most material value.

It is with much pleasure, and with the greatest confidence that the Council have the honor of proposing his name as that of an Honorary Member of the Asiatic Society, the highest distinction which it can give. While on the eve of his departure from India, they regret the approaching loss of a friend who has endeared himself to all who know him, they wish him all happiness and prosperity and further honours, amidst his new surroundings.

Babu Hiralal Sen, Moulvie Mahomed Yusoof, Khan Bahadur, Mr. R. E. S. Thomas and Mr. H. Luson, expressed a wish to withdraw from the Society.

The SECRETARY reported the death of H. H. The Maharaja of Darbhanga.

The PRESIDENT announced that up to 31st December no essays had been received in competition for the Elliott Prize for Scientific Research for 1898.

The SECRETARY laid on the table a circular, dated 21st November, 1898, from the President, Royal Geographical Society, London, asking contributions on behalf of the National Antarctic Expedition.

The following papers were read:—

1. *The story of Hazuri.*—By DAYARAM GIDUMAL, Judge, Shikarpur, Sindh. Communicated by the Anthropological Secretary. (Postponed from the last meeting).

The paper will be published in *Journal*, Part III.

2. *On the Kāçmīrī Verb.*—By G. A. GRIERSON, PH.D., C.I.E., I.C.S. The paper will be published in *Journal*, Part I.

3. *Notes on Tamil Words and Ways.*—By A. C. CLAYTON. Communicated by the Anthropological Secretary.

4. *Note on a sacred tank at Amolai, Tahsil Chhibramau, District Farrukhabad.*—By CHARLES A. SILBERRAD, B.A., B.Sc., I.C.S. Communicated by the Anthropological Secretary.

5. *Shagūn, or Rain-omen.*—By CHARLES A. SILBERRAD, B.A., B.Sc., I.C.S. Communicated by the Anthropological Secretary.

6. *The Evil-eye and the scaring of Ghosts.*—By E. N. MAHADEVA SASTRIAR. Communicated by the Anthropological Secretary.

The papers will be published in the *Journal*, Part III.



PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL.  
FOR FEBRUARY, 1899.

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The Annual Meeting of the Asiatic Society of Bengal, was held on Wednesday, the 1st February, 1899, at 9 P.M.

His Excellency Baron Curzon of Kedleston, G.M.S.I., G.M.I.E., Patron, was present.

THE HON. MR. H. H. RISLEY, B.A., C.I.E., I.C.S., President, in the chair.

The following members were present :—

Major A. Alcock, I.M.S., Captain A. R. S. Anderson, I.M.S., Mr. J. Bathgate, Dr. T. Bloch, Dr. A. Caddy, Dr. F. G. Clemow, Mr. W. B. Colville, Mr. W. K. Dods, Rai Narsing Chandra Dutt, Mr. F. Finn, The Revd. W. K. Firminger, Mr. G. W. Forrest, Major C. R. M. Green, I.M.S., Mr. C. L. Griesbach, C.I.E., Mr. J. N. Das-Gupta, Captain W. Haig, Col. T. Hendley, C.I.E., Mr. D. Hooper, The Revd. H. B. Hyde, The Revd. Father E. Lafont, C.I.E., Mr. C. Little, Kumar Rameshwar Malliah, Mr. J. Mann, Mr. R. D. Mehta, C.I.E., Mr. C. S. Middlemiss, Mr. W. H. Miles, Dr. Asutosh Mukerjee, Mr. L. de Nicéville, Mr. J. D. Nimmo, Mr. M. H. Oung, Mr. A. Pedler, Mr. H. M. Rustomjee, Babu Amritalal Sarkar, Dr. Mahendralal Sarkar, C.I.E., Mr. C. Saunders, Mr. M. J. Seth, Mahamahapodhyaya Haraprasad Shastri, Babu Nagendra Nath Vasu, Pandit Mahendra Nath Vidyaniidhi, Dr. G. Watt, C.I.E., The Revd. J. Watt, Mr. C. R. Wilson, Mr. J. Wyness.

*Visitors* :—Captain F. L. Adam, A. D. C. to the Viceroy, Mr. and Mrs. C. Bendall, Dr. W. Booth, Babu Akshoya Kumar Bose, Babu Ganendra Nath Bose, The Revd. Mr. H. W. Cogan, Mr. E. C. Cotes, Mr. J. J. Cotton, Miss de Sélincourt, Mr. A. Grant, Mr. A. H. James, Mr. E. Kennison, Dr. A. von Krafft, Mr. W. R. Lawrence, C.I.E., Private Secretary to H. E.

the Viceroy, Babu Birajmohan Majundar, Captain A. H. McMahon, C.S.I., C.I.E., Mr. M. R. Mehta, Babu Mannohan Mukerjee, Mr. W. Orrell, The Hon. Mr. J. D. Rees, C.I.E., Dr. A. Schulte im Hofe, Mr. W. Withall.

According to the Bye-laws of the Society, the President ordered the voting papers to be distributed for the election of officers and members of Council for 1899 and appointed Mr. C. L. Griesbach, C.I.E., and Mr. W. H. Miles to be Scrutineers.

The PRESIDENT then called upon the Secretary to read the Annual Report.

## ANNUAL REPORT FOR 1898.

The Council of the Asiatic Society have the honour to submit the following Report on the state and progress of the Society's affairs during the past year :—

### Member List.

During the year under review, 31 Ordinary Members were elected, 9 withdrew, 7 died, 3 were removed from the list under Rule 40, being more than three years absent from India. The total number of Members at the close of 1898 was thus 300 against 283 at the end of the preceding year; of these 122 were Residents, 108 Non-Residents, 11 Foreign, 23 Life, 35 Absent from India, and 1 Special Non-Subscribing Member, as will be seen from the following table which also shews the fluctuations in the numbers of Ordinary Members during the past six years.

YEAR.	PAYING.				NON-PAYING.				GRAND TOTAL.
	Resident.	Non-Resident.	Foreign.	Total.	Life.	Absent.	Special Non-Subscribing.	Total.	
1893 ... ..	116	123	12	251	22	33	2	57	308
1894 ... ..	98	125	12	235	22	36	2	60	295
1895 ... ..	108	122	12	242	23	31	1	55	297
1896 ... ..	105	119	11	235	23	35	1	59	294
1897 ... ..	106	115	9	230	22	35	1	58	288
1898 ... ..	122	108	11	241	23	35	1	59	300



The seven Ordinary Members, the loss of whom by death during the year we have to regret, were The Hon. Maulvie Sir Sayid Ahmad Khan Bahadur, Mr. Umes Chandra Batabyal, Babu Hara Chandra Chaudhuri, Mr. G. E. Grimes, Pandit Rao Govind Rao Narain, H. H. The Hon. Maharajah Sir Luchmessur Singh Bahadur, and Pandit Hari Mohan Vidyabhusan.

There was one death amongst the Honorary Members, *viz.*, Dr. Georg Bühler, and one amongst Associate Members, *viz.*, Mr. C. J. Rodgers, their numbers now stand at 23 and 9 respectively.

The Special Honorary Centenary Members and Corresponding Member remain at 5 and 1 respectively as last year, there having been no casualties.

No Members compounded for their subscriptions during the year.

#### Indian Museum.

One presentation made to the Society by Mr. F. J. Needham was transferred to the Indian Museum under the provisions of Act XXII of 1876, namely, the big Kettle-Drum, referred to in the Society's Proceedings for July 1898, page 186.

Mr. A. Pedler was re-elected a Trustee of the Indian Museum.

The other Trustees on behalf of the Society were:—

Dr. A. F. R. Hoernle, C.I.E., Dr. Mahendralal Sarkar, C.I.E., R. D. Oldham, Esq., F.G.S., G. W. Küchler, Esq., M A.

#### Finance.

The accounts of the Society are shown in Statement No. 1, in the Appendix, under the usual heads. The closing balance for the year was Rs. 1,47,205-1-1 which is less, by Rs. 6,250-2-6 than that of the year preceding. It must be mentioned, however in explanation (1) that our expenses for the year in review include a sum of Rs. 5,829-8-6 for repairing the damage done to the building by the earthquake of 1897, and (2) that as a consequence of the stricter scrutiny demanded by Members at the last Annual Meeting our outstanding liabilities are abnormally small, being not much over a thousand rupees.

Statement No. 8 contains the Balance Sheet of the Society and of the different funds administered through it.

The Budget Estimate for 1898 was taken at the following figures:—

Receipts Rs. 17,700. Expenditure Rs. 22,210 (Ordinary Rs. 16,682, Extraordinary Rs. 5,528).

Taking into account only the ordinary items of receipts and expenditure for the year 1898, the actual results have been, Receipts Rs. 16,886-5-2 and Expenditure Rs. 18,995-7-8.

The receipts show a decrease of Rs. 813-10-10 while the expenditure shows an increase of Rs. 2,313-7-8 on the Budget Estimate.

The falling off in the receipts is due to non-payment of subscriptions by some of the Members.

This can be rectified by the Members themselves.

On the expenditure side, the items of "Lighting," "Postage," "Freight," "Contingencies," "Books," "Journal Part I," "Journal, Part II," "Proceedings," and "Printing Circulars, etc." all show an increase.

The increase of Rs. 20 for *Lighting* is due to the settling-up of some old outstanding gas-bills.

The increase of Rs. 28-1-3 for *Postage* is caused by the distribution of presentations of Dr. Grierson's *Kaçmiri Grammar*.

The increase of Rs. 62-3-0 for *Freights* is chiefly due to exceptionally large applications for back volumes of the Society's publications in exchange. The value of the exchanges received in return must be set against this.

A considerable part of the increase of Rs 135-8-9 for "Contingencies" is accounted for by cold-weather uniforms for servants. This should have been estimated for, as it is a periodically recurring charge but was over-looked.

The increase of Rs. 1,172-1-3 for "Books" is in great measure accounted for by the fact that Messrs. Luzac & Co's. accounts for eighteen months had to be adjusted, whereas the estimates were for twelve months only.

The increase of Rs. 1,627-3-9 for *Journal* and *Proceedings* can be satisfactorily explained. As a matter of fact, the expenditure for the publications of the year in review has been under the estimate, and the increase is due to our having had to adjust large bills outstanding for the year 1897.

For *Journal Part I*, the expenditure shows Rs. 4,629-15-9 against a sanctioned estimate of Rs. 2,100 or an apparent excess of Rs. 2,529-15-9.

But, on the one hand, Rs. 1,912 of this apparent excess went to settle outstanding printers' bills for 1897—which reduces the excess to Rs. 617-15-9; and, on the other hand, an extra credit of Rs. 1,600 was made to *Journal Part I*, out of the accumulations of the Assam Government Grant for Ethnology, for printing an illustrated paper upon Assam Copper-plate Inscriptions. So that, taking the income of *Journal Part I* at Rs. 2,100 plus 1,600 = Rs. 3,700, and the expenditure at Rs. 4,629-15-9 minus Rs. 1,912 = Rs. 2,717-15-9, the publication of the ordinary papers in this Part has cost Rs. 982-0-3 less than the estimate. As a matter of fact, we have a small bill of Rs. 427-3-0 still outstanding

against the last number of Journal Part I for 1898 and the cost of the index has to be allowed for but even when these are included we are still well within the sanctioned estimate.

For Journal Part II the expenditure shows Rs. 3,279-8-6 against a sanctioned estimate of Rs. 2,100, or an apparent excess of Rs. 1,179-8-6.

But we have had to pay outstanding printers' bills for 1897, amounting to Rs. 2,234-10-0, and our actual expenditure on Journal Part II for 1898 has been only Rs. 1,044-14-6, so that the Journal has really been carried on at a cost of Rs. 1,055-1-6 less than the estimate. There are bills for the last Number and Index of Journal Part II for 1898 still unpaid, but these only amount to Rs. 359-15-0 and the cost of Plate I has still to be included.

For Journal Part III the sanctioned estimate was Rs. 3,000, and the expenditure—excluding the grant, above-mentioned, of Rs. 1,600 for the paper in Part I on Assam Copper-plate Inscriptions—was Rs. 378-8-0. To this must be added Rs. 193-15-0, still unpaid for printing the last Number; but even with these additions we are nearly Rs. 800 within the estimate.

For the *Proceedings* the expenditure shows Rs. 1,539-3-6 against a sanctioned estimate of Rs. 1,000 or an excess of Rs. 539-3-6.

But outstanding bills for 1897, amounting to Rs. 520-4-6, are included in this expenditure, so that the *Proceedings* for 1898 have really cost very little more than the amount sanctioned, even if we include three small bills amounting in all to about Rs. 98, still unpaid for the *Proceedings* for November and December and for the Index.

There is a very slight increase of Rs. 4-15-0 under the head of "Printing Circulars."

In addition to the extraordinary expenditure for Earthquake Repairs, Rs. 117-9-0 was spent for putting up a new Lightning Conductor, and Rs. 36 was spent for a teak-wood cabinet to fit the Society's coin safe. Neither of these items were provided for in the Budget.

The Budget Estimate of probable Ordinary Receipts and Expenditure for 1899, has been fixed as follow: Receipts Rs. 17,000. Expenditure Rs. 16,782.

On the receipt side, the estimated income under the head "Subscriptions" is based upon the actuals of the last year. "Rent of Rooms" has been reduced by Rs. 300 as, unlike last year, there are no arrears due to us.

On the expenditure side, *Salaries* has been increased by Rs. 100, and a small addition of Rs. 40 has been allowed for "Freight."

We know at present of only one extraordinary item of expenditure to be allowed for during 1899, namely Rs. 140 for relining pictures.

The details of the Budget Estimate are as follows:—

### Receipts.

Subscriptions	...	...	Rs. 6,600	0	0
Sale of Publications	...	...	600	0	0
Interest of Investments	...	...	5,500	0	0
Rent of Rooms	...	...	1,200	0	0
Government Allowances	...	...	3,000	0	0
Miscellaneous	...	...	100	0	0
Total			Rs. 17,000	0	0

### Expenditure.

Salaries	...	...	Rs. 3,600	0	0
Commission	...	...	400	0	0
Pension	...	...	52	0	0
Stationery	...	...	120	0	0
Lighting	...	...	60	0	0
Municipal Taxes	...	...	819	0	0
Postage	...	...	600	0	0
Freight	...	...	80	0	0
Meetings	...	...	80	0	0
Contingencies	...	...	200	0	0
Books	...	...	1,500	0	0
Local Periodicals	...	...	16	0	0
Binding	...	...	750	0	0
Journal, Part I	...	...	2,100	0	0
,, Part II	...	...	2,100	0	0
,, Part III	...	...	3,000	0	0
Proceedings	...	...	1,000	0	0
Printing Circulars, &c.	...	...	200	0	0
Registration Fee	...	...	5	0	0
Auditor's Fee	...	...	100	0	0
Total			Rs. 16,782	0	0

### Extraordinary Expenditure.

Furniture	...	...	140	0	0
Total			Rs. 16,922	0	0

In connexion with *Finance* there is one thing more to mention.

At the last Annual Meeting it was decided by a majority of eleven against ten "that the Council arrange during the coming year to prevent expenditure on the Journals exceeding the amount allowed by the Society in the estimates and report at the next Annual Meeting."

The Council accordingly have to report:—

- (1) That they have made arrangements that no paper shall be printed without an order in Council and without an estimate of cost being prepared beforehand by the Secretary responsible. By this means the Council will be kept constantly informed of the financial position of the current Journal.
- (2) That in Conference with the Baptist Mission Press they have obtained a reduction of five annas per page for printing the Society's *Journal* and *Proceedings*, and a very considerable reduction in the rate for wrappers.
- (3) That they have approved the Secretaries' proposals for obviating blank pages in the *Journal* and for making the *Accessions to Library*, published in the *Proceedings*, shorter and more compact.

All these matters will be found more fully reported in the Abstract of Proceedings of Council now before you. It is to be hoped that Members will bear in mind that these changes add very considerably to the work of the Honorary Secretaries.

As a matter of fact, the increased supervision of the Council and Secretaries has not yet shown any obvious result, though the results will be manifest enough next year. The immediate results are probably not quite what was expected: they show an increase, instead of a decrease, in expenditure.

This, as has already been explained, is due to the fact that in re-arranging our affairs we have had to make good the deficiencies of previous years.

Our only alternative was to put a complete stop to all our publications except *Journal* Part III, which was obviously impossible.

#### London Agency.

The number of copies of the *Journal*, of the *Proceedings*, and of the *Bibliotheca Indica*, sent to Messrs. Luzac and Co., during the year 1898, for sale, were 380, 240 and 728, valued at £59-13-0 and £9-0-0, and Rs. 580-14-0 respectively.

The proceeds of sale of the *Journal* and *Proceedings*, and of the *Bibliotheca Indica* during 18 months were Rs. 619-3-5 and Rs. 146-3-2 respectively.

Twelve invoices of books purchased and of publications of various Societies sent in exchange, were received during the year. The value of the books purchased amounted to £61-17-11.

#### Continental Agency.

The number of copies of the *Journal*, of the *Proceedings*, and of the *Bibliotheca Indica*, sent to Mr. Otto Harrassowitz, the Society's Continental Agent, during 1898, for sale, were 81, 50 and 527, valued at £12-3-0 and £1-17-6 and Rs. 320-14-0 respectively.

The proceeds of sale of the *Journal* and *Proceedings*, and of the *Bibliotheca Indica*, during 18 months were Rs. 163-3-0 and Rs. 670-15-6 respectively.

#### Library.

The total number of volumes, or parts of volumes added to the Library during the year was 2,416, of which 711 were purchased and 1,705 presented or received in exchange for the Society's publications.

The accessions to the Library after June were published in one list in the December Proceedings, in accordance with the orders of Council (see Abstract of Council Proceedings for September).

#### Publications.

There were published during the year twelve numbers of the "*Proceedings*" (Nos. 10 and 11 of 1897, and Nos. 1-10 of 1898), containing 236 pages of letter-press and four plates; three numbers of the "*Journal*," Part I (Nos. 1-3 of 1898), containing 272 pages of letter-press and 14 plates; three numbers of the "*Journal*," Part II (No. 4 of 1897, and Nos. 1-2 of 1898), containing 439 pages of letter-press and 4 plates; two numbers of the *Journal*, Part III (Nos. 1-2 of 1898), containing 117 pages of letter-press. There were also published a Kāçmīrī Grammar by Īçvara-Kaula, edited by Dr. G. A. Grierson, Parts I and II, the Index to *Journal*, Part I for 1896 and the Index to *Journal*, Part II for 1897 and 1898.

#### Coin Cabinet.

During the year 16 coins were added to the cabinet, viz., 12 silver and 4 copper, all of which were presented under the Treasure Trove Act by the Government of Bengal. They comprise coins of the following classes:—Punch-marked (silver) 3; Varāha (silver) 2, (copper) 4;

Vigraha (silver) 7. Detailed notices of these coins will be found in the Proceedings for June 1898.

The Philological Secretary has arranged the Society's Coin Cabinet to enable students to inspect the collection.

#### Office of Secretaries.

There is no change to report in the office of Secretaries.

Dr. T. Bloch continued as Philological Secretary and Editor of the *Journal*, Part I; Mr. F. Finn as Natural History Secretary and Editor of the *Journal*, Part II; Mr. L. de Nicéville as Anthropological Secretary and Editor of the *Journal*, Part III; Major A. Alcock, I.M.S., as General Secretary and Editor of the *Proceedings*; and Mahamahapadhyaya Haraprasad Shastri as Joint Philological Secretary.

Mr. G. W. Kuchler carried on the duties of Treasurer throughout the year.

Mr. J. H. Elliott continued Assistant Secretary and Librarian throughout the year.

Pandit Annadaprasad Saraswati was appointed permanently as the Pandit of the Society in the place of Pandit Harimohan Vidyabhusan, deceased.

There were no other changes in the office establishment.

#### Bibliotheca Indica.

The Report refers only to such publications as have been brought to an end or taken up during the last year.

#### Arabic Persian Series.

1. Dr. Ranking has finished his translation of Vol. I of Badāoni's *Muntakhabu-t-tawārikh*. The translation of Vol. III of the same work has been entrusted to Captain Wolseley Haig, Officiating Secretary to the Board of Examiners, Calcutta.

2. A translation of the *Riyāzu-s-salāṭīn*, edited for the Bibliotheca, by Maulvi Abdul Haq, has been entrusted to Dr. T. Bloch.

#### Sanskrit Series.

None of the current publications has been brought to an end during the last year. The following publications have been taken:—

- (1) An edition of the *Çatapatha Brāhmaṇa* with Commentary, by Pandit Satyavrata Sāmaçraṇi;
- (2) An edition of the *Vivaraṇa*, a Sub-Commentary on *Patañjali*, by 3 Benares Pandit;

- (3) An edition of the *Abhilaṣitārtha-cintāmaṇi*, by K. M. Juglekar, Esq. ;
- (4) An edition of the *Advaita-cintākaustubha*, by Babu Girīndra-nātha Datta ;
- (5) An edition of the *Gaṅgāvākyāvāli*, with Geographical and Historical Notes, by Mahāmahōpādhyāya Haraprasāda Ṣāstrī ;
- (6) An edition of the *Tantraratna*, by Mahāmahōpādhyāya Chandrakānta Tarkālaṅkāra ;
- (7) An edition of the *Jñātādharma-kathāsūtra*, being the sixth *Aṅga* of the *Jainas*, by Dr. T. Bloch ;
- (8) An English Translation of the *Ṣrāddhatattva*, by Babu Nakuliṣvara Bhaṭṭācārya.

Owing to reasons which are detailed in the Presidential Address, none of these is sufficiently advanced for part publication.

#### ABSTRACT OF PROCEEDINGS OF COUNCIL DURING 1898.

##### *January 28th.*

The loan of the manuscripts of "*Gunakāraṇḍa Vyūha*" and "*Dvāviṇiṣa Avadāna*" to Dr. Sten Konow, on the guarantee of the University of Christiania was approved.

It was ordered to pay the bill of Messrs. Mackintosh, Burn and Co., for Rs. 5,528-3-6 for Earthquake repairs.

An exchange of publications with the Keeper of the State Archives, The Hague was considered.

##### *April 1st.*

The loan of the manuscript of "*Māasir-i-Rahimī*," by 'Abdu-l-Bachī-i-Nihawandī to Mr. H. Beveridge was sanctioned.

The report of the Sub-committee to examine the Society's pictures was approved and it was resolved to ask Mr. E. B. Havell to let pictures Nos. 18 (*The Farmer's Household by Morland*), 34 (*Ruins of Mahabali-puram*), 48 (*The Marquess Wellesley*), and 94 (*William B. Bird*), be relined by the Head Master of the School of Art and to patch No. 18 (*The Farmer's Household by Morland*) at his convenience.

##### *April 29th.*

A special grant of Rs. 1,600 was sanctioned out of the accumulations of Assam Government Grants for Ethnological Research, for publishing, in *Journal Part I*, Dr. A. F. R. Hoernle's paper on Assam



Copper-plate Inscriptions; the order to be reported to members at the next General Meeting.

Pandit Annadaprasad Sarasvati was confirmed in the appointment of the Pandit of the Society.

*May 27th.*

Drs. L. A. Waddell and D. Prain were asked to accept seats on the Council of the Society.

The accounts of the Government Grants for Ethnology, written up to date, were ordered to be adopted subject to an addition of 20 % of "Postage on Journals" and 10 % of "Establishment."

It was ordered that in future no paper should be *printed* without a special order in Council and that each proposal to print a paper should be accompanied by a memorandum showing the probable cost of printing and the funds available.

The President's proposals on the subject of Indian Folklore Research were adopted.

*July 1st.*

Mr. A. Pedler was re-elected a Trustee of the Indian Museum.

The proposal of the American Philosophical Society for an exchange of publications with the Society was accepted.

*July 29th.*

It was agreed to exchange, *Journal*, Part II, for the "Kansas University Quarterly."

On the representation of the Secretary that the budget for the Proceedings for 1898 had already exceeded, it was ordered that the "*Proceedings*" be continued.

*August 26th.*

Mahāmahopādhyaya Haraprasad Shastri was allowed travelling allowance from the Sanskrit Manuscript Fund to accompany Professor C. Bendall to Nepal.

Professor P. Peterson was asked to edit the "Upaniti-bhava-pranpancha" for the Bibliotheca Indica.

Permission was accorded to Mr. C. H. Tawney to translate the "Prabandha-Cintamani" for the Bibliotheca Indica and as a *special case*, to print the work in England.

The relining of the pictures of Nos. 34 (Ruins of Mahabalipuram), 48 (The Marquess Wellesley), and 94 (William B. Bird) was entrusted to Babu A. P. Bagchi at a cost of Rs. 100.

It was ordered that the Catalogue of the Oriental Works in the Society's Library compiled by Pandit Kunja Behary Nyayabhushan, be printed at the charges of the O. P. Fund.

On the report of the Secretary upon the present financial position of Journals, Parts I-II, and Proceedings, it was ordered that the outstanding account for 1897 be paid and if necessary, Government Paper be sold out for the purpose. The budget grants for current year be kept separate and the Secretaries form a Sub-committee to report to Council as to the possibility of any reduction in the cost of printing the Society's publications.

*September 30th.*

On an application from the South African Museum, Cape Town, an offer was made of the Society's *Proceedings* and *Journal*, Part II, in exchange for their "Annals."

On an application from the Royal Geographical Society of Australasia, Adelaide, an offer was made of the Society's *Proceedings* and *Journal*, Parts II-III, in exchange for their "Proceedings."

It was agreed to lend the manuscript of the "Bōdhicāryavata-rika" to Professor L. de la Vallée Poussin on the guarantee of the University of Ghent.

The proposal of Dr. Hoernle to publish his report on the Central Asian Antiquities as an Extra Number of *Journal*, Part I for 1899, was approved, provided the Government of India supplied the plates and paid for their extra copies.

At the instance of Sir George King, F.R.S., it was resolved to address the Government of the Straits Settlements with regard to a suggested contribution towards the publication in *Journal*, Part II, of the "Malayan Flora."

The relining of the picture of the Farmer's Household by Morland at a cost of Rs. 40 was sanctioned.

The following recommendations of the Sub-committee appointed to consider means for reducing expenditure on the publications of the Society were approved.

That in the *Proceedings* :—

- (i) The List of accessions to Library be condensed
  - (a) by the omission of Blue books not having a Literary, Scientific, Archæological, or other special interest (*e.g.*, Traffic Returns) ;
  - (b) by entering all Serials once a year instead of once a month.
- (ii) The Extracts from the Proceedings of Council published with the Annual Report be much further contracted.

(iii) The Descriptive Catalogue of the Bibliotheca Indica published in the Annual Report be confined to new or completed works.

That in the *Journal* :—

(i) That every issue end at the bottom of a left hand page, and any surplus matter be carried on to the beginning of the next *Number*.

(ii) And that therefore the title of each Part of the *Journal* be printed only at the commencement of the volume for the year, instead of at the beginning of every *Number*.

That the following scale of printing and binding charges, which had been settled in Conference with the Manager of the Baptist Mission Press be accepted :—

1. *Proceedings*. The rate per page to be *three rupees*, except in the case of contributions involving the use of characters of more than one language (what the Press calls “bilingual articles), *if such contributions extend over more than one page*. The rate for these exceptional articles will be *three rupees five annas* per page.

2. *Journals, Parts I, II and III*. The rate per page to be *three rupees*, except in the case of articles of special difficulty.

Special difficulty is to include (a) illegibility of MSS., (b) unduly heavy alterations in proof sheets, and (c) the need of a variety of characters (“bilingual articles).”

For these exceptional articles the rate will be *three rupees five annas* per page, except again in the case of extremely difficult articles, *like those by Dr. Grierson on Kashmiri Grammar* for which the rate will be *three rupees thirteen annas* per page.

3. Covers and “Doing up” :—

For *paper and printing of covers*, or wrappers there shall be one fixed consolidated charge of *ten rupees* for each *Number* of a *Journal* and nine rupees eight annas for each *Issue* of the *Proceedings*.

For “Doing up,” both of *Journals* and *Proceedings*, the charge shall be at the rate of *one pice and a half* per hundred copies of each page that the *Number* or *Issue* contains.

October 14th.

An exchange of publications with the Tufts College, Massachusetts, U.S.A., for the Society’s *Proceedings* and *Journal*, Part II, was approved.

November 25th.

The resignation of Mr. A. T. Pringle as a member of Council was recorded.

Dr. M. A. Stein's request to publish his paper on the Ancient Geography of Kashmir as an Extra Number of *Journal*, Part I for 1899, was approved.

*December 19th.*

A meeting of the Council was called early in order that the recommendations under Rule 44 of the President, Vice-Presidents, Secretaries and other Members of Council for the ensuing year might be prepared and circulated to Resident members before the 1st January in accordance with that Rule.

It was recommended that Dr. A. F. R. Hoernle be proposed as an Honorary Member in the place of Dr. G. Bühler, deceased.

Also that Lord Curzon, the Viceroy and Governor-General of India, be asked to become the Patron of the Society.

The Report having been read and some copies having been distributed, the President invited the meeting to consider it at their leisure.

The PRESIDENT announced that the Elliott Prize for Scientific Research would not be awarded for the year 1898.

The PRESIDENT then delivered the annual address.

### ANNUAL ADDRESS, 1899.

GENTLEMEN,

As the chief aims of this Society are scientific, and the main purpose of this address is to review the scientific work of the year, I shall content myself with a brief reference to those administrative facts which are fully stated in the Annual Report. We have elected during 1898, 31 new Members, the largest record of admissions since 1889; and our numbers, after allowing for deaths and withdrawals, are now higher than in any year since 1893. Fourteen Societies mostly Foreign and Colonial, have applied during the year to receive our *Journal* in exchange for theirs; and the number of original papers offered to us for publication has been so great as to cause some embarrassment to the Secretaries in respect of ways and means.

As to finance, the Treasurer's statement shows that we closed the year with a sum of Rs. 147,205-1-1 to our credit. This is less, by Rs. 6,250, than the closing balance of the year immediately preceding (1897), and less, by Rs. 5,849, than the average closing balance of the

three preceding years (1895-97) ; but, on the other hand, it is Rs. 6,019 better than the average closing balance of the seven years (1888-94) before that. So that when it is borne in mind that our expenditure for the past year includes the extraordinary item of Rs. 5,829-8-6 for repairing the damage done to the building by the earthquake of 1897, it will be apparent that the present state of our finances is not so bad as was at one time supposed. I am of course aware that the introduction of natural calamities, such as earthquakes and cyclones, in the familiar rôle of lodging-house cat is, as a financial expedient, neither novel nor convincing. But there is no mistake about the earthquake. It did damage in the way of bricks and mortar to the extent of nearly Rs. 6,000, and one of the bricks went through our best picture, credibly attributed to George Morland. It has cost money to repair the building and to mend that and other pictures also damaged. But on the whole we need not despair of our finances. One comfort is that if we do not wilfully shut our eyes we always know how we stand. We have that first requisite, an excellent method of accounts, which we owe to no less a person than Sir James Westland, who years ago when he was recasting the accounts of the Empire, found time to devise for this Society a system skilfully adapted to our special needs, which as the Secretary and Treasurer know, are in many respects peculiar and complicated owing to the number of ear-marked funds with which we deal.

The discussion that took place on our financial position at the last Annual Meeting has however served one most useful purpose. It has drawn attention to the necessity of treating a Budget provision with proper respect—a necessity which a scientific idealist is perhaps at times apt to overlook. The Council have stopped that leak at any rate, by ruling that no paper is to be printed without specific sanction given on a regular estimate of its cost. They have also obtained from the Society's printers a substantial reduction in the scale of charges for printing and making up our publications. Owing however to the more punctual payment of bills and to the fact that arrears of previous years had to be cleared off, the Council were unable to keep within the Budget allotments for the Proceedings and Journal. I hope matters are now on such a footing that this will not recur, and that we shall be able in future to administer our funds in such a manner that our activity in publication may not have to be restricted. A scientific society which does not publish a respectable number of papers has, as Matthew Arnold said of somebody's translation of Homer, no proper reason for existing.

I now turn to the work of the year.

## WORK OF THE YEAR.

Under the heads of Philology and Archæology, as treated in Part I of the *Journal* and in the *Bibliotheca Indica* we have to consider the following sections:—

- (1) Modern Indian Vernaculars; their grammar and literature;
- (2) The classical languages of India: Sanskrit, Arabic and Persian;
- (3) History and Antiquities: the latter term including Archæology, Inscriptions and Coins.

Among the languages now spoken in India, **Kāçmīrī** has been hitherto unduly neglected by Oriental Scholars. Except for an imperfect grammar and dictionary, nothing to speak of has been done to elucidate the grammatical structure of this in many respects very important language. This gap has now been filled by Mr. Grierson, to whose scholarship the study of Modern Indo Aryan Vernaculars already owes so much. In the year under review, he completed his edition of *Īçvarakaula's Kāçmīraçabdāmṛta*, or "the nectar of *Kāçmīrī* words," the work of a modern Pandit of Kashmir, which treats of the language of that country according to the system of Hindu Grammar. In a series of articles published in *Journal* Part I, Mr. Grierson has also dealt with the rules contained in *Īçvarakaula's Grammar*, in the systematic method of European scholars. Of this series, the last Volume of the *Journal* contains papers on the *Kāçmīrī Nouns and Suffixes*, which for the first time make available a large amount of information hitherto inaccessible.

To the same Scholar we owe a clip from his Linguistic workshop of very exceptional interest. His paper on a dialect of Guzerati spoken in the District of Midnapur shows how, by circulating for translation a version of the parable of the Prodigal son (which judiciously substitutes a kid for the proverbial fatted calf) he has unearthed a queer tribe of criminal gipsies called Siyalgiris, about 120 strong, who speak a variety of the corrupt form of Guzerati current among the Bhils. How they found their way across India, what led them to split off from the main body of their tribe, and why they have maintained their language for 150 years while adopting, as is stated to be the case, the religion and customs of the people about them, are questions which may never be answered. Like most illiterate nomads, they are afflicted or blessed with short memories. One may perhaps venture to surmise that they found it convenient for professional purposes to keep up a language which their neighbours did not understand. It is stated that they marry only among themselves but have adopted the local Hindu pat-

ronyms which ordinarily have something to do with the regulation of inter-marriage. If this is so a parallel is to be found in the case of the Telingas, a small caste discovered in Bankura ten years ago. These people claimed and were believed to be the descendants of certain sepoy imported from Madras in the last century by one of the Rajas of Bisheupur. They married only among themselves, but had adopted, for the purpose of determining the prohibited degrees in wedlock, the totemistic section-names of the semi-aboriginal Bagdis and Bauris of Western Bengal. I can only hope that some local student of folk-lore will be moved to approach the Siyalgiris with the set of questions we circulated recently and will send us the results.

Mr. Grierson also contributed some interesting *Notes on the date of the composition of Tūlsī Dās's Rāmāyaṇa*, which seek to establish the fact that the famous poet died in Benares of the plague, which in Jehangir's time ravaged India for eight years (1616-1624) and that he spent the last four days of his life in dictating the Hanuman-bāhuka, an appendix to the Kavitta-Ramayana, which describes the symptoms of his disease. The theory imputes to the poet astonishing vitality, but his description of what the faculty call an axillar bubo has certainly been distressingly familiar to all students of modern plague literature during the last two years.

Babu M. M. Chakravarti's paper on *Modern Oriya Poets* carries us still further to the East than Benares, the home of Tūlsī Dās. The learned gentleman has embodied in it a large amount of new information on the modern History of Orissa and its vernacular literature which may be said to owe its origin to the great religious movement which is connected with the worship of Kṛṣṇa.

While the papers just referred to deal with the vernacular languages of India, the greater part of the Philological work done by the Society concerns the classical languages of this country, *viz.*, Sanskrit Arabic and Persian. It would be beyond the scope of this brief review to mention all the names and titles of the various works published by the Society in the *Bibliotheca Indica* during the last year. Speaking generally, it may be said that the last year's outturn of fasciculi in this series has been below the average of former years. This deficiency appears to be partly due to the plague-scare which drove away from Calcutta many of our native editors and thus interfered with the steady pursuit of their literary work, and partly to the fact that a good many new works have been taken up, which have not yet advanced far enough for publication. Among those new works, it will be welcome news to all scholars who are interested in Vedic Literature to know that an edition of the *Çatapatha-Brāhmaṇa* has been entrusted to Pandit

Satyavrata Sāmaçāmi. This edition will meet a real want, as Prof. Weber's edition of the same text is now entirely out of print; it will moreover contain the whole of the Commentary, and not merely extracts from it. A further want hitherto has been a good *Translation of Suçruta*, the standard work on Hindu Medicine. This work now has been taken in hand by Dr. Hoernle, and the first fasciculus of his translation has already appeared.

A more modern work, the edition of which has been entrusted to the Society's Joint Philological Secretary, Mahamahopadhyaya Hara Prasad Shastri, is the *Gaygāvākyaṅgāvalī*. It belongs to the well-known class of Mahātmyas, dealing with holy places of pilgrimage, but it is considered to be of value for the history and geography of Ancient India. To the same class of literature belongs the paper by Babu M. M. Chakravartti on *Sanskrit Literature in Orissa*. The modern Sanskrit Literature of that country consists principally of Mahātmyas and Commentaries or systematic Treatises on Hindu Law. To Hara Prasad Shastri the Society also owes short notices of two new Sanskrit works discovered by him. The first is the *Pavanadūta*, written by Dhōyī, a poet who lived at the court of Lakṣmaṇasēna, the last king of Bengal in the 12th century A.D. It is an imitation of Kālidāsa's "Cloud-messenger" (*Mēghadūta*), the fiction being that a fair damsel of the South happened to see Lakṣmaṇasēna on his "conquest of the four quarters" and at once fell in love with him. She afterwards deputed a cloud to carry the message of her love to the king, who in the mean time had returned to his capital at Nuddia, and the poem describes the route by which the cloud travelled to "the garden on earth," as Bengal was naturally called by a local courtier. The second work is by *Āryadēva*, a famous teacher of Buddhism. It was discovered by Hara Prasad Shastri during his stay at Khatmandu.

Intimately connected with Buddhism was Jainism. Of the holy scriptures of this creed, the edition of the sixth Anga, the *Jñātādharma-kathāsūtra*, has been entrusted to the Society's Philological Secretary, Dr. Bloch, who hopes soon to complete it.

In the Arabic-Persian branch, most of the works undertaken by the Society deal with the history of Muhammedan rule in India, and those published last year, are concerned more especially with the history of the Emperor Akbar. Mr. Beveridge, a former President of the Society, has published three fasciculi of his translation of *Abu-l-Faẓl's Akbar-nāma* and while the fourth is nearly ready for issue. The same learned gentleman has also furnished the Society with an account of the *Memoirs of Bāyazīd Bīyāt*, a Steward of the Kitchen under Humāyūn and Akbar, who was asked by the latter king to commit to writing the history of



his life. These memoirs were utilised by Abu-l-Fazl when composing the Akbarnāma. Dr. Ranking has brought to an end his translation of the first Volume of the *Muntakhabu-t-tawārīkh*, written by Abu-l-Fazl's colleague, 'Abdu-l-Qādir-i-Bādāōnī, and a translation of the History of Bengal under Muhammadan rule, called "The Gardens of Kings" (*Riyāzu-s-salātīn*), has been entrusted to Dr. Bloch.

Of purely historical papers, I may first notice the continuation of Mr. W. Irvine's *History of the later Moguls*, dealing with the rule of Farrukhsiyar. It was to this king, that the famous embassy from Calcutta was sent, and one of the ambassadors was Edward Stephenson, afterwards for the short period of one day only "President and Governor of Fort William in Bengal." A paper by Mr. C. R. Wilson relates his history, and contains some interesting correspondence between Orme and Stephenson on the Revenue system of the Mogul Empire.

As compared with the period of Muhammedan rule in India, the earlier Hindu kingdoms suffer under the great disadvantage that no real historical records of those days exist. It is owing to this fact that we have to resort to Inscriptions and Coins as the only reliable sources of information. The Society, in the days of Priusep, took the lead in this department and was the first to open a wide field of research, which is now being cultivated also by various other European and Indian learned Societies. Our Society, however, has never quite forgotten its illustrious traditions and last year a series of interesting epigraphical documents have been published. Dr. Theodor Bloch has edited an interesting inscription which is engraved on the pedestal of an *ancient Buddhistic statue* excavated by General Cunningham in 1863 in a place identified by him with the famous *Çrāvastī*, the capital of Uttara-Kōsala. This identification, though lately disputed by some scholars, rests on strong epigraphical evidence, the fact being, as is shewn by Dr. Bloch, that the inscription—a document of about the last century B. C. or the first A. D.—records that the statue was set up in *Çrāvastī*, a statement which we have not as yet sufficient reason to set aside. The statue itself has moreover an important bearing on the subject of Buddhist Archæology which deserves to be worked out more carefully and systematically than has yet been done. During last year, the Society published a note by Dr. Bloch on certain *Sculptures representing Buddha as worshipped by Indra*, and he has been able to trace this subject from Bharhut, Sanchi, and Gaya through Mathura and Gandhara art, thus illustrating the intimate connection that exists between the Græcian sculptures from the North-West of India and the older, purely Hindu art.

Of Hindu Kings during the period after the Gupta Empire, a certain Mahārāja Bhōja has long been a much disputed personage, till the researches of Mr. Fleet conclusively proved that no connection existed between this Bhōja and the famous King Bhōja of Kanauj but that the former belonged to a family of petty chiefs, whose property was in the modern Districts of Benares and Oudh. A new *Copper-plate Inscription of this Bhōja*, edited by Dr. Bloch in last year's Journal, shows that a portion of their territory also lay in the Marwar State in Rajputana, and it furnishes us with the date 705 A.D. for the reign of this king. Of the Gaṅga Family of Orissa, a new document, an *Inscription in the Cātēṣvara Temple* in Orissa has been discovered and edited for the Society by Babu N. N. Vasu, while Babu M. M. Chakravarti for the first time has tried to establish on epigraphical evidence a *Date* for the erection of the famous temple of Jagannātha in Puri.

*Dr. Hoernle's edition of Copper-plate Inscriptions from Assam* opens up a new page in the history of Ancient India. Nothing hitherto was known of those kings of Kāmarūpa, and they appear to have had no connection with other dynasties of Eastern India. Their date rests on palæographical conclusions; it is believed to have been the 10th and 11th century A.D.

Babu S. C. Das's papers on the *Antiquities of Chittagong* according to Tibetan sources, and an *Account of travels on the shores of Lake Yamdo-Croft*, carry us further, beyond the frontiers of India proper; and to Turkish or Mongolian tribes probably also belong the *New Inscriptions* from Swat and Boner, *discovered by Major Deane*, and published with excellent facsimiles by Dr. Stein. Their decipherment hitherto has baffled the efforts of scholars; but from independent evidences they are believed to be the records left by a Turkish dynasty who reigned over those countries, between the 6th and 8th century A.D. and who claimed descent from the famous Kuṣāṇa King Kaniṣka. Dr. Hoernle's *Note on Block-prints from Khotan* also deals with an unknown character. These prints were apparently a sort of Buddhist prayer-book, repeating the same formula over and over again. The fact that they have been printed from inked blocks, is beyond doubt, and lends great interest to them. Dr. Hoernle moreover notices some resemblances between their characters and certain letters of the Kharōṣṭhī or Bactrian Pali script, which was used exclusively during the first centuries of our era in the country beyond the present North-West Frontier of India.

In the department of coins, mention must be made of a valuable paper by Mr. V. A. Smith, describing several new and rare *Indo-Bactrian and Hindu Coins*; also a few notes on *Coins of Çivaji* by Mr. Codrington.

ton, and on *Gold coins from Angul* in Orissa, attributed to the Gajga Kings of Kalinga, by Babu M. M. Chakravartti, deserve notice. Of *Treasure Trove Coins*, 14 hoards, comprising about 2,500 coins, were examined and described during the last year by Dr. Bloch, the Society's Philological Secretary.

I cannot conclude these remarks without a reference to the irreparable loss which Oriental Learning has sustained in the last year by the untimely death of that eminent Sanskrit scholar **Prof. Georg Buhler**. Since 1895, he had been connected with the Society as one of its Honorary Members, and in former years he had sent us papers on different subjects of Hindu Law, on which he has long been one of the first authorities. His death will be felt for many years wherever the study of Indian History, Antiquities, and Literature is cultivated.

Among other Members whose death we have to deplore, I must mention the great educational reformer **Sir Sayyid Ahmad Khan**, who had been an Ordinary Member since 1860, and had long ago made his name as an archæologist. His *Āsāru-ṣ-ṣanādīd* or "Relics of Kings," published in Urdū in 1846 and 1854, still remains the standard authority on the antiquities of Dehli, and has been largely made use of by General Cunningham and other writers on the same subject. The late **Mr. Umesh Chandra Batabyal, C.S.**, an Ordinary Member since 1893, deserves to be mentioned here in connection with his edition of the Faridpur Copper-plate Inscription of Dharmapāla, the oldest document bearing on the history of the Pāla Kings of Bihar, which he had the credit of discovering and editing for the first time in the Society's Journal for 1894.

The name of the late **Mr. Ch. J. Rodgers**, an Associate Member since 1883, is intimately connected with Numismatic Research in India. Having been for many years an ardent collector of coins, especially Muhammadan coins, in the North-West of India, he applied the knowledge thus acquired to cataloguing the collections of coins of the various Museums in India. For this Society he published a long series of important papers on new or rare classes of coins, and one of his last works was the compilation of a Catalogue of the Society's Coins. This Catalogue unfortunately is still in manuscript, and we cannot at present afford to print it.

For the same reason we have been able to publish only two numbers of Part II of the Journal, dealing with Natural Science, but those contain some important contributions. I would in particular draw attention to Sir George King's *Materials for a Flora of the Malayan Peninsula*, of which the present year's issue of the Journal contains the tenth instalment. For the completion of this we look to some pecu-

niary assistance from the Government of the Straits Settlements which it is hoped will follow the liberal example of the Government of Netherlands India in respect of encouraging science. Major Alcock, I. M. S., has also published the third part of his *Carcinological Fauna of India*, dealing with the crabs of the family *Xanthidae*, of which the Indian species alone number 153, nearly all represented in the collection of the Indian Museum. As this series which revises existing systems of classification is absolutely indispensable to anyone desiring to study the Crustacea of Indian waters, and is most important for work on these animals in general, it is very desirable that it should be completed and if possible illustrated by plates of new or rare or noteworthy species.

It must be remembered—and I take this opportunity of laying stress on the fact—that it is really to the Asiatic Society of Bengal that the scientific world owes the unique series of ichthyological data which have been collected in connexion with the Hydrographic Survey of the Indian coast. So long ago as June 1871, the Council of this Society appointed a Committee to report upon the advisability of deep-sea dredging in Indian waters. The report of the Committee—which is printed in our *Proceedings* for 1871—was forwarded by the Council to the Government of India, by whom it was so far favourably received that a Government grant was made for the purchase of the necessary apparatus. Nothing further followed, probably because no properly equipped vessel was available; but in 1876, when the present Marine Survey Department was fairly established, the Council again addressed Government on the subject. The result was that Government authorized the Council of the Society to confer directly with the Dockyard authorities as to the scientific outfit of the vessel designed for the accommodation of the Survey. In consequence not only did the Government equip this new vessel with apparatus for deep-sea research, but it also appointed an officer of the Indian Medical Service as Surgeon-Naturalist to the Survey. The new vessel was launched in 1881, and has since 1885 been systematically carrying on deep-sea investigations as a subordinate part of her routine. And now, thanks to the energetic initiative of the Council of the Society, there has been acquired a knowledge of the physical geography and fauna of the deep-sea-basins of the Indian region that will compare favourably with the state of knowledge of similar parts of the seas of Europe and North America. From the first, the zoological department of the Survey was, in accordance with the recommendation of the Council of the Society, associated with the Indian Museum, to the mutual advantage of both institutions. I have the authority of Dr. Günther, President of the Linnean Society, for stating that the result

thus obtained are of unrivalled scientific value and that they are in great measure due to the efforts of our Secretary, Major Alcock, who ranks among the first living authorities on this subject

The rest of the papers in the past year's Journal have been short ones; Mr. L. de Nicéville has continued his work on the *Oriental Butterflies* by publishing two papers dealing with the geographical distribution of those insects; some new plants from the North-Western Frontier of India have been described, by Sir George King and Major D. Prain, I.M.S., and from Singapore and Borneo by Mr. A. N. Ridley, Director of the Botanic Gardens of Singapore. Another paper, by Chandra Bhushan Bhaduri, B.A., and Jyoti Bhushan Bhaduri, M.A., deals with *Double Thiosulphates of Copper and Sodium*. Finally the Secretary for this Part has himself published two brief notes on the change of plumage in certain birds and on an instance of aggressive behaviour in the Whip-Snake.

Some short papers of interest to Naturalists have been published in the *Proceedings*. Among them are (1) several Notes on *Ornithology* by Mr. F. Finn; (2) a paper on the *Geographical Distribution of certain Deep-Sea Animals* by Major Alcock, I.M.S., in which zoological evidence is adduced in support of the well-known geological theory that, in past times, the Mediterranean extended westwards to the Caribbean Sea, and eastwards far into the present limits of Asia; and (3) an Account, by Mr. F. Finn, of the rediscovery by Major C. R. M. Green, I.M.S., in the Afridi country, of the rare Scincoid Lizard *Eumeces Blythianus*.

In Ethnology and the cognate subjects dealt with in *Part III* of the Journal the record of the year's work is better than it has ever been before. Fourteen papers, dealing chiefly with Indian Folk-lore, have been published in the Journal, and we are now attempting to collect the data for a comparative study of this subject on a larger scale. In 1891-92 a scheme for promoting the systematic study of ethnography in India, which had been prepared by me in consultation with the late Professor Robertson Smith and Mr. J. G. Frazer, (the author of *The Golden Bough* and of the magnificent edition of Pausanias which has appeared recently) was circulated by the Government of India, and the suggestion was made that Societies formed for scientific inquiries might undertake to collate information sent to them. In connexion with this scheme the Asiatic Society of Bengal added to their Journal a third section dealing with Anthropology, Ethnology and Folk-lore and undertook to edit and publish suitable papers on these subjects. The number of papers received has, however, not been very large, and experience has shown that further organization is needed if any real progress is to be made towards the

end in view. It is not enough merely to invite those interested in the religious and social customs of the people of India to send in for publication any information they may obtain. Inquiry must be stimulated by indicating in some detail the manner in which it should be conducted, and simplified and directed by stating the form in which its results should be recorded.

The Council of the Society accordingly resolved last year to circulate widely a set of questions which had been drawn up at my request by Mr. William Crooke, late of the Indian Civil Service, the author of *The Popular Religion and Folk-Lore of Northern India*. If persons interested in the subject will collect replies to the questions and send them to the Anthropological Secretary of the Society, in the form of papers or notes dealing with a particular custom or belief or superstition, they will be published in the third part of the Journal. It is hoped that in course of time sufficient information may thus be collected to form the basis of a comparative study of the Folk-lore of different parts of India.

A few words of explanation may be added. Folk-lore has been defined by the English Folk-lore Society as "the comparison and identification of the survivals of archaic beliefs, customs and traditions in modern ages." The definition marks the distinction between Folk-lore and the allied studies of ethnography, ethnology and anthropology, none of which are exclusively concerned with survivals. But the term 'survival,' which is of the essence of the definition, is itself relative, and in considering how researches into Folk-lore should be conducted in India, two points must be borne in mind. First, that in relation to European institutions nearly the whole body of Indian custom, usage and tradition may be regarded as a series of survivals. Secondly, that within this series are to be found usages of different age and origin, some of which may have survived or been adopted from Non-Aryan sources. The latter have, as is well-known, a tendency to decline in popular estimation and either to disappear or to be so transformed that their origin can no longer be traced. Of recent years this tendency has been increased by the spread of education the revival of both Hinduism and Islam and the extension of railways which in the matter of usage as in that of prices tends to produce a dead level of uniformity. It should therefore be one of the chief objects of the inquiry now suggested to ascertain and record the more primitive customs and to endeavour to distinguish them from those which are believed to be of Aryan origin. Particular attention should be given to those customs and beliefs which are handed down orally and are not recorded in writing.

It has always appeared to me that there is a tendency to overlook the extent to which studies of this kind—studies of living Indian usage as opposed to the practices enjoined in books—throw light upon some of the obscure passages in the records of classical antiquity. Without entering on such intricate matters as the origin of the *gens* or γένος and its possible relation to the various types of exogamous groups which abound in India at the present day, or the Ancestor worship which M. de Coulanges has so admirably handled in *La Cité Antique*, I may venture to give one or two simple illustrations of what I mean. In a delightful essay in his book on Custom and Myth, Mr. Andrew Lang refers to the passage in the *De Corona* where Demosthenes describes the youths of his adversary aschines and taunts him with the fact that his mother was a sort of wise woman or 'white witch' who assisted at the celebration of mysteries and that he himself helped her by smearing the worshippers with a mixture of clay and bran. Mr. Lang quotes some savage parallels and comes to the conclusion that as to the meaning of this "very un-Aryan practice one has no idea." But is it so certain, in view of what may be seen every day in India, that the practice of smearing or *lip-ing* the body with mud on certain occasions is really un-Aryan? May it not have been for the Greeks, as it is I believe for the Hindus, an act of ceremonial purification, handed down from the common ancestors of both races and based upon some symbolism which may have been known only to the initiates of the mysteries or forgotten even by them?

Then there is the curious incident at the beginning of the Oedipus Coloneus where Oedipus and his daughters unwillingly violate a sacred grove on the hill of Colonus and are required to pay their footing by a sacrifice. You will not find many sacred groves in Europe now; but in Chota Nagpur there are plenty, and if you propose to violate them for the purpose of sport you must sacrifice to the goddess or not a single beater will enter that jungle. The ritual is simple and, as I know by experience, not unduly expensive. There are, I believe, parallels in Pausanias, who wrote a sort of Baedeker of Greece a good many years ago, and I fancy a comparative study of the subject would be worth undertaking.

Lastly I may mention the famous scene in the Odyssey of the slaying of the suitors by Ulysses, which has given rise to much learned discussion by reason of the supposed difficulty of understanding the construction of the hall and its relation to the women's apartments. One thinks of it as arranged like a College Hall, with the dais at one end and the door at the other, and one fails to understand why the suitors

when they found themselves being slain by arrows shot from the dais did not simply go out of the door and thus baulk Ulysses of his revenge. A glance at the structure of a large native house settles this and other minor difficulties and makes it clear that what is called the dais was at the entrance of the hall, that the suitors were hopelessly trapped, and that the poet had before him a vivid and consistent picture of the scene which he describes—not the tissue of complicated improbabilities which some of his critics have vainly imagined. I have said enough to indicate a line of thought which seems to promise interesting results. It is perhaps not too much to hope that we may look for help in this direction from the successful headmaster and accomplished scholar who has now cast in his lot with the East.

We have the rare privilege of welcoming in person here this evening Lord Curzon of Kedleston the last on a long roll of distinguished Patrons of this Society the first being Warren Hastings whose picture, side by side with that of Sir William Jones the first President, faces His Excellency this evening. Lord Curzon comes to us with an established reputation in science and literature and he has already done us a service which I trust will serve to extend the usefulness of the Society and will bring us into closer touch with scientific research throughout the world. He has personally interested himself in a superb scheme, initiated by the Royal Society and carried on by them for many years from their own resources, for drawing up and publishing an Index of scientific papers, so that any one who is working at a particular branch of science shall be able to ascertain from the Index everything that has been written on the subject with which he is concerned. It is proposed now to reconstitute the Index on an International basis and in an improved form with effect from the year 1900 and to entrust to this Society the Indian section of the work with, I may add, what seems to Mr. Pedler and myself an adequate measure of assistance from the Government of India. We trust that our action in this matter will meet with the approval of the Council and I am sure that you will join with me in the hope that under the auspices of our new Patron we shall enter upon an era of wider influence and increased activity.

At the request of the President, Prof. C. Bendall made the following remarks on the results of his recent journey to Nepal in search of Sanskrit Manuscripts and Inscriptions :—

“Your Excellency, Mr. President, Ladies and Gentlemen, I feel it a quite unusual and special honour to be allowed to say a few words this evening as to my recent visit to Nepal. Most of my hearers have some



notice of the claims of that interesting and beautiful country on the special attention of scholars. In this room, adorned by the bust of one of the most distinguished members of this Society, my late revered friend Brian Houghton Hodgson, it is specially fitting briefly to refer to them. To Hodgson, by far the most eminent of Residents in Nepal, the world owes the revelation of the existence in India of an extensive literature of Buddhism—in many respects, the most important of Eastern religions, and till then supposed to have been entirely swept away from its birthplace, the continent of India.

The fact is that during the Muhammadan invasions, Nepal, never entered by the invaders, became a refuge for the Buddhists of Mithilā and Bengal. The excellent climate also of the country seems to have been favourable for the conservation of manuscripts. This fact was first prominently brought out by the collections of Dr. Daniel Wright, Residency Surgeon at Kathmandu. Hodgson's collections were chiefly modern copies, but Wright acquired from 1873 to 1876 a large number of palm-leaf originals. Of the greater portion of these, now at Cambridge (some also at the British Museum) I have compiled printed catalogues, and amongst them is a work which is noteworthy as the oldest Indian MS. bearing a date, that date being assigned by me to an era making it equivalent to 857 A.D.

But I am able to shew you to-night photographs of books written as early as this and some probably considerably earlier. By the kindness of the Nepalese authorities, I was enabled to spend many days in the examination of the Mahārāja's splendid collection of MSS., much assisted by one of your Secretaries, Mahāmahōpādhyāya Haraprasād Čāstri, and by his assistant, Binōda Bihārī who is still at work there. An exhaustive report will be later on presented to you. At present, therefore, I need only briefly refer to some of the most important discoveries.

The existence of the Mahārāja's Library was first made known by Mr. R. Lawrence in 1863, and subsequently mentioned by Dr. Wright. By the present time it has been much increased and is still receiving accessions. The MSS. are packed in cloths according to the native fashion. In one of those bundles I found palm-leaves with writing in a peculiar form of character which though Indian, has never been found in India itself, but only in MSS. from Central Asia. Dr. Hoernle calls this character the North-Western Gupta script, or simply North Indian Gupta, and the date assigned to it by him and Prof. Bühler, is the 5th century A.D.

A second discovery of mine needs a few words of explanation in a gathering including some who are not Oriental Scholars. Buddhism is divided into two great sects, called the *Mahāyāna* or "great vehicle"

and the *Hīnayāna* or "small vehicle." The books of those two sects are written respectively in a mixed Sanskrit dialect, also called *Gāthā* dialect, and in Pāli. The latter books have been hitherto found only in Ceylon, Burma, and Siam, and Pāli is generally believed to have disappeared from India proper at an early date in the history of Buddhism. The discovery, however, of a fragment in Gupta writing of the 9th century A.D., containing part of the *Cullavagga* from the *Vinaya*-section of the Pāli *Tripitaka*, shows that the hitherto universally accepted theory as to the early disappearance of Pāli from India cannot be any longer upheld. This MS. is the first Pāli book found on the continent of India.

The discovery of early MSS also tends to settle questions of literary history. Thus the extant Purāṇas have been pronounced by most critical scholars to be quite modern compilations, the oldest of them not earlier than the 9th century A.D. In this connection it is of great value that a MS. of a considerable portion of the *Skandapurāna*, written not later than the 9th century A.D., has come to light in Nepal. The interesting MS. has been acquired by Haraprasād Ṣāstri for your collection, and you may expect to hear from my learned friend more about the importance of the book on the general history of the Purāṇas.

Another valuable find is the discovery of two old copies of *Vidyāpati's* poems. The works of this famous author have hitherto been chiefly known from bad, modernized editions which were of no value for linguistic purposes. The new manuscript probably will prove of great importance for settling the difficult question as to what the language used by Vidyāpati actually was.

In connection with history, I must mention the great importance for historical purposes of Colophons of ancient dated MSS. What is wanted for the history of India previous to the Muhammadan period, is a series of contemporary evidence of scribes as put down in those Colophons of MSS. Of such dates bearing kings' names I have been able to collect for Nepal a series of not less than sixty, ranging from 1000-1600 A D., thus giving a fairly complete outline of the history of these centuries.

For Inscriptions Nepal has already proved an excellent hunting-ground. Bhagvanlal Indraji in 1873, I myself in 1884, Prof. S. Lévi in 1897, discovered a large number of most valuable epigraphical documents. In addition to those, my recent journey has yielded about fifteen new Inscriptions, most of which are of considerable antiquity and importance for the history of Ancient Nepal.

Modern Nepal, its population with their customs and superstitions, also is a promising field to the student of ethnology or folk-lore.

Buddhism, as is well known to you, still exists there, and one may still note here, as in other Buddhistic countries, the great resemblance that exists between their form of divine worship and that of the Catholic churches. Thus, prostrations like the *chemin de la croix*, scapulars, banners, incense and rosaries are much in vogue among them, and holy amulets are revered and kissed by their votaries with the same firm belief in their efficacy, as a pious Catholic looks upon objects brought from holy places of his own creed.

Another feature of religious worship in Nepal that struck me very often, is the intimate connection one observes between nature worship and a sense for the beauty of scenery. People seem to prefer for their places of worship localities with picturesque scenery such as lofty mountains, huge trees, etc., and one cannot help thinking that nature worship always has been and still is influenced by this aesthetic feeling, which we generally are led to deny to the lower races of man.

At the side of Buddhism, Hinduism exists, without any spirit of enmity. Brahmins partake in Buddhist festivals, they worship their statues and erect Stūpas over their lingas. Women are not excluded from religious ceremonies, and the purdah system of modern India is unknown to them. At a Bāṛājātrā, a Buddhist festival which I had the pleasure of witnessing, and printed invitations to which I am showing you to-night between 7 to 10,000 *bhikṣus* were fed at the expense of a Buddhist layman who was present with his wife and whole family. The king was present in theory only, he being represented by the acting Prime Minister. The term used for this feast in the invitation which is written in Sanskrit verse and Newari prose, is *saṃyuk-saṃbhōjana*, or "complete feast." The festival consisted in the dedication of a costly image of Buddha with a display of a number of images similarly dedicated in past times.

The juxtaposition of Buddhism and Hinduism in Nepal gives us an idea of the actual relations of both religions in India during the last centuries before the Muhammadan invasion. Hinduism, it appears, gradually absorbed Buddhism; no persecutions ever existed, but what happened merely was this that Buddhism slowly and by degrees became more and more Hinduized. It is for this reason, that the study of modern religious life still deserves more notice than has been given to it previously. It is highly probable, that a good many traces of Buddhistic survivals still may be found among the popular forms of worship in India, as has been shown of late in one instance with regard to Dharma worship in Bengal, the discovery of which is due to my learned friend Haraprasād Čāstri.

Finally, it is a pleasant duty to me to record the eminent services

done to me by the Nepalese Government in affording every possible facility both to me and to your joint Philological Secretary. The people wherever I met them, specially the pandits and librarians with whom I came into contact, always showed me the greatest possible kindness. The work of your joint Philological Secretary, who was specially deputed in connection with the search for Sanskrit MSS., has been eminently successful, and not less than 29 MSS., chiefly Palm-leaf MSS., have been purchased by him with my own co-operation for your collection. I therefore beg to suggest that the thanks of the Society by its President might be sent to His Highness the Prime Minister of Nepal and to his brother and representative, His Excellency the Commander-in-Chief for the great services rendered to me, as also to the Society's officers working in connection with me."

Prof. C. Bendall also exhibited enlargements of Photographs taken from MSS. and Inscriptions referred to in the above remarks, as also various other objects of interest collected by him in Nepal.

His Excellency the Viceroy said it gave him great pleasure to be present on that occasion. He had come there not in his official garb as patron of the Society, but as a student and writer who had himself profited by its publications, and who was intensely interested in its work and welfare. He was glad to have heard the interesting inaugural address of Mr. Risley, and the account by Mr. Bendall of his recent researches and discoveries in Nepal. The latter was a country of great interest, in which he doubted not that original discoveries would await the future explorer and student. Mr. Bendall's remarks on two subjects in particular had confirmed his own observations in Asiatic travel. The parallelism which Mr. Bendall had noticed between some of the features and practices of Roman Catholicism and of the Buddhist religion in Nepal had been observed in many other countries, and was one of the commonplaces of Oriental travel. He had himself made some study of monastic life and institutions in China, and had made a careful note of the many points of resemblance between the ritual, theogony and to some extent even the dogma of the two religions. Perhaps it was this coincidence that in some degree explained the easy entry of the Roman Catholic propaganda into some Asiatic countries. The combination of a sort of nature worship with an aesthetic regard for the beauties of natural scenery had also greatly struck him in Corea, and he gave an account of the annual mission of the State embassy from Seoul to pay homage to the Long White Mountains in the north. As regarded the work of the Asiatic Society of Bengal, although as he knew that it consisted mostly of voluntary effort and that they did not spuru the help of amateurs, he yet did not personally regard its actions

as the mere academic exercise of students. He looked upon it rather as part of a duty which we owed to India. Planted as we had been by Providence upon the throne of the Indies we were trustees for the world of a literature, an archæology, a history and an art that were among the priceless treasures of mankind. For nearly 3000 years there had been a succession of kingdoms, dynasties, races, and religions in India, all of them bearing relics of some sort, many of them relics of the highest value, which it was incumbent upon us to examine, to elucidate, and to conserve. It was sometimes said that officials in India had now-a-days no time for independent study or research. "No time" was always the excuse of idleness, and the busiest man was usually he who had most time at his disposal. He did not, therefore accept that plea as an excuse for any relaxation in the efforts which so many distinguished members of the Society had made in the past, and during his term of office he meant to do whatever lay in his power to encourage research, to promote study, and to safeguard the relics of the past as a part of our imperial obligation to India.

The PRESIDENT announced that the Scrutineers reported the result of the election of officers and members of Council to be as follows:—

*President :*

The Hon. Mr. H. H. Risley, B.A., C.I.E., I.C.S.

*Vice-Presidents :*

A Pedler, Esq., F.R.S.

The Most Revd. Archbishop P. Goethals, D.D., S.J.

Col. T. H. Hendley, C.I.E., I.M.S.

*Secretaries and Treasurer.*

T. Bloch, Esq., PH.D.

F. Finn, Esq., B.A., F.Z.S.

L. de Nicéville, Esq., F.E.S., C.M.Z.S.

Major A. Alcock, M.B., C.M.Z.S., F.G.S., I.M.S.

Mahamahopodhyaya Haraprasad Shastri, M.A.

C. R. Wilson, Esq., M.A.

*Other Members of Council.*

Dr. G. Watt, C.I.E.

R. D. Oldham, Esq., A.R.S.M., F.G.S.

Captain A. R. S. Anderson, B.A., M.B., I.M.S.

The Revd. H. B. Hyde, M.A.

Major L. A. Waddell, LL.D., I.M.S.  
W. K. Dods, Esq.  
J. D. Nimmo, Esq.  
Dr. Mahendralal Sarkar, M.D., C.I.E.  
Shams-ul-Ulama Shaikh Mahomed Gilani.

The Meeting was then resolved into the Ordinary General Meeting.

THE HON. MR. H. H. RISLEY, B.A., C.I.E., I.C.S., President, in the chair.

The minutes of the last meeting were read and confirmed.

Thirty-three presentations were announced.

Mr. Abdul Aziz Khan, B.A., 130 Harrison Road; Captain A. H. McMahon, C.S.I., C.I.E.; Mr. Julian James Cotton, B.A., I.C.S., were ballotted for and elected Ordinary Members.

Dr. A. F. R. Hoernle, C.I.E., was ballotted for and elected an Honorary Member.

Dr. Fritz Noetling, Babu Ashutosh Prammanick, and Babu Bhupendra Nath Bose, expressed a wish to withdraw from the Society.

The PRESIDENT laid on the table a letter, dated 28th January, 1899, from the Private Secretary to the Viceroy and Governor-General of India, conveying Lord Curzon's acceptance of the office of Patron of the Asiatic Society of Bengal.

The PHILOLOGICAL SECRETARY announced the presentation of a Copper-plate Grant of Madanapāla Dēva from Mr. N. K. Bose, I.C.S.

No papers were read.

The proposal of the President, at the suggestion of Prof. C. Bendall, that the thanks of the Society be accorded to H. H. the Prime Minister of Nepāl and to H. E. the Commander-in-Chief of Nepāl, for the great services rendered to Prof. Bendall and to the Society's officers who accompanied him, was unanimously approved.

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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR MARCH, 1899

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st March, 1899, at 9-15 P.M.

COLONEL T. H. HENDLEY, C.I.E., Vice-President, in the chair.

Twenty-two Members and five Visitors were present.

The minutes of the last meeting were read and confirmed.

Twenty-five presentations were announced.

Mr. C. W. McMinn, B.A., I.C.S., (retired), Mr. J. C. Mitra, M.A., B.L., Lieutenant Bernard Scott, I.S.C., and Mr. A. Tocher, were balloted for and elected Ordinary Members.

The Council recommended the following gentlemen for election as Associate Members at the next Meeting:—

Rai Bahadur Ram Brahma Sanyal, Superintendent, Alipur Zoological Gardens, proposed by Mr. Finn, seconded by Mahamahopadhyaya Haraprasad Shastri.

Pandit Viṣṇu Prasād Rāj Bhāṇḍarī, Chief Librarian, Maharajah's Library, Khatmandu, proposed by Mahamahopadhyaya Haraprasad Shastri, seconded by Dr. T. Bloch.

Babu Syamadas Mukerjee and Mr. G. Lyell expressed a wish to withdraw from the Society.

Major A. Alcock, I.M.S., exhibited (a) an interesting instance of commensalism between a fish and a zoophyte; and (b) some models of some typical deep-sea fishes made by native artists and made the following remarks upon them.

The specimen here exhibited is one of the few known instances of true commensalism, in the fullest sense of the word, in which a fish and a zoophyte are the partners. I may perhaps be permitted to explain, for the benefit of those present who are not zoologists, that commensalism is the name applied to the arrangement—no doubt an entirely mechanical and unconscious result of natural selection—by which two animals of different grades in the zoological scale become definitely associated together for their mutual advantage. It must not be confused with parasitism, where one animal is supported at the expense of another.

The specimen exhibited is a little fish called *Minous inermis*, belonging to the family *Scorpaenidae*. Most of the members of this family live either at the bottom of the sea or among rocks that are overgrown

with sea-weeds and zoophytes, and many of them have their skin beset with filamentous outgrowths which look like waving fronds of sea-weed and give these fishes a most deceptive resemblance to the weed-encrusted objects among which they lie concealed. By this means not only does the fish escape the notice of its enemies, but it avoids scaring—if it does not actually attract—the little animals upon which it preys.

In the present instance there can be no doubt that the sluggish little fish covered with waving zoophytes would benefit in the way supposed.

On the other hand the zoophytes must receive as much good as they give; for instead of being fixed for life in one place and being entirely dependent on currents of water for food and air, they are continually being carried to fresh waters and pastures new by the fish upon which they are growing.

I have already—in the *Annals and Magazine of Natural History* for September, 1892—given the proofs that the relation that exists between this particular species of fish and this particular species of zoophyte is a definite and constant, and not an accidental, one, and that it is a reciprocally beneficial, not a parasitic one, and I only allude to the subject again to-night because Capt. Anderson, the present Naturalist on the *Investigator*, has been fortunate enough to catch recently, off the Malabar coast, no less than 16 specimens—of which this is one—of the fish, all of which have the commensal polyp growing on them.

The coloured models of deep-sea fishes that are here exhibited are interesting in two different aspects: first, as representing in as nearly as possible their natural form and colour—undistorted and unbleached in the manner of spirit specimens—curiously modified forms of life that are inaccessible to most observers; and secondly, as illustrating the application of native talent to the elucidation of Natural Science.

It is unnecessary to speak at length of the peculiar conditions under which life exists in the great depths of the sea, the only facts that I need here call to remembrance are (1) that no sunlight can penetrate into the abysses and that therefore (2) no plants can live there.

It follows (1) that animals that have no eyes will not, merely on that account, be worse off in the struggle for existence than animals that have them; (2) that animals that possess their own means of illumination will have a fine field for development, and (3) that there is likely to be a specially keen competition between carnivorous animals—a competition likely to lead to the development of formidable teeth and maws.

These three evolutionary possibilities are all exemplified in actual fact and are all illustrated by these models.

1. *Tauredophilidium Hextii*, the subject of the first model, is at present only known from the Bay of Bengal, where it lives at a depth



of 1,310 fathoms. We may be pretty sure that it actually lives at the bottom; for its large head, its short slender and tapering tail, and its extremely short and small gill-plates, show that it cannot be an active fish. At a depth of 1,310 fathoms we may be sure that there is no sunlight, and we are therefore not surprised to find that in *Tauredophidium* the eyes are completely atrophied and are safely embedded in connective-tissue which, again, is covered over by the skin of the head.

2. *Aulastomomorpha phosphorops* and *Thaumastomias atrox* are known in these seas from 1,000 and 1,310 fathoms respectively. They are, without doubt, actively locomotive fish, and probably swim about in the gloom of the middle depths. Whether they move in gloom or in absolute darkness is probably immaterial for both of them are richly provided with organs that—like the luminous glands of fire-flies—secrete phosphorescent light. Their eyes are well developed—in *Aulastomomorpha* enormously so, for the same reason that the eyes of many familiar nocturnal land-animals are peculiarly large.

3. *Thaumastomias atrox* and *Chiasmodon niger* illustrate the action of deep-sea conditions on ravenous animals such as the majority of fishes are. Observe the formidable teeth, the cavernous mouth, and (in *Chiasmodon*) the enormously distensible stomach.

4. I have lastly to shew a model that appears to upset our calculations. It has been implied that *Tauredophidium* has lost its functional eyes because it lives in the dark, and that *Aulastomomorpha* and *Thaumastomias* although they live in darkness, or, at any rate, in deep gloom, have retained their eyes because they have acquired their own means of illumination. But here is a fish *Benthobatis moresbyi*, which undoubtedly lives at the bottom and at a depth to which sunlight does not penetrate, and which—as we should therefore expect—is blind, but which yet has, in the skin of its back, numerous little luminous pores.

The probable explanation of this apparent anomaly is that the pores are lures to attract prey—the prey being then instantly killed or disabled by the powerful electric organs which *Benthobatis* possesses.

Mr. F. Finn exhibited six specimens (three living) of the Bronze-cap Teal (*Eunetta falcata*) and one of the clucking Teal (*Nettion formosum*) obtained recently in the Calcutta market, and made remarks upon them.

Mahamahopadhyaya Haraprasad Shastri exhibited a MS. of the *Aṣṭasāhasrikā Prajñāpāramitā* written in Nālanda and discovered by him in Nepal and made the following remarks.

The manuscript which I exhibit to-day was acquired at Bhāt-gāon from a Buddhist priest named *Maṇiharak*. We have got many copies of the *Aṣṭasāhasrikā*, but none so interesting as this. The chief interest lies in the fact that the manuscript was copied at Nālanda, the great Buddhist monastery where Hiou Tshang received his knowledge of the

mysteries of Buddhist philosophy and which he described as the largest educational and monastic establishment in the world. We have here a genuine relic of the old monastery or university.

The second point of interest is that it was copied in the 6th year of the reign of Mahipāla, the son of Bigrahapāla, who flourished in the beginning of the 11th century. The third point of interest is that the date is recorded in a most curious fashion, अभिलिख्यमाने पत्राङ्के सम्बत्सुरे, in the year indicated in the page mark about to be written. This page mark is 303. So it was written in that year of a certain era. Which era? It cannot be the Gupta era; it cannot be the Çriharṣa era. In both cases the manuscript would be earlier than Mahipāla. The Nepal era is out of the question. Because it was never prevalent at Nālanda, and that would give a date too late for Mahipāla. The fourth point of interest is that it is the gift of one who describes himself as Çākyaçāryya Sthavira Sādhu Gupta. Evidently this man was not a Vikṣu; he was a Gṛhastha, but a Buddhist priest with the surname Gupta, a title now exclusively assumed by the Vaidya caste in Bengal. The writer was Cintāmāṇi who describes himself as Kalyāṇamitra, *i.e.*, a Buddhist priest. He wrote this at Nālanda. The exact day is given कार्तिक दशम त्रयोदशी मङ्गलवारे. The work shows many various readings and it would be interesting to collate it with the printed text.

Many of the illuminations are in very good preservation. The one giving the scene of Buddha's death at the end is very good. The five Buddhas in five different colours with five different positions of the hand and fingers form the very frontispiece of the work. The curious mixture of Hinduism and Buddhism is exemplified in the picture of a female Buddhist divinity being worshipped Hanumān.

The following papers were read:—

1. *A new Copper-plate Inscription of Madanapāla, from Dinajpur.*—By N. N. VASU.

2. *On the antiquity and traditions of the Jāmi' Masjid and Rauza of Haḡrat Maulānā 'Arab, at Saikupa.*—By MAULAVĪ ABDUL WALLI.

These papers will be published in the *Journal*, Part I.

3. *Notes on the Fauna of the Gilgit district (with exhibition of specimens).*—By CAPTAIN A. H. McMAHON, C.S.I., C.I.E., F.G.S., I.S.C.

The paper will be published in the *Journal*, Part II.

4. *On North Indian Folktales of the Rhea Sylvia and the Juniper Tree Types.*—By SARAT CHANDRA MITRA, M.A., B.L. Corresponding Member of the Anthropological Society of Bombay. Communicated by the Anthropological Secretary.

5. *On the legendary origin of the river Kūmrul and Bēlkākulē. etc., in the district of Jessore.*—By MAULAVĪ ABDUL WALLI.

These papers will be published in the *Journal*, Part III.



## PROCEEDINGS

OF THE

# ASIATIC SOCIETY OF BENGAL,

FOR APRIL, 1899.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 5th April, 1899, at 9-15 P.M.

COLONEL T. H. HENDLEY, C.I.E., I.M.S., Vice-President, in the chair.

Twenty-five Members and six Visitors were present:—

The minutes of the last meeting were read and confirmed.

Twenty presentations were announced.

Lt.-Col. G. Manera, I.S.C., Mr. H. E. Kempthorne, and Major E. C. Hare, I.M.S., were balloted for and elected Ordinary Members:—

Rāi Rāmbrahma Sanyāl Bahādur, Superintendent of the Alipore Zoological Garden, and Paṇḍit Viṣṇu Prasād Rāj Bhāṇḍarī, Chief Librarian of the Darbar Library, Nepal, were balloted for and elected Associate Members.

Rāi Rāmbrahma Sanyāl Bahādur is descended from one of the most respectable Vārendra Brāhmana families in the district of Murshidābād. His ancestors were the spiritual guides of the Rājās of Lālgotā in the same district. The Rāi Bahādur early in life evinced a spirit of activity in research which attracted the attention of Rāi Kānāi Lāl De Bahādur, who availed himself of his services in the compilation of his Bengali work on Chemistry. From a subordinate position on the staff of the Alipore Zoological Garden Rāi Rāmbrahma has risen to be its Superintendent, and his chief work, entitled "Treatment of Animals in Captivity in Lower Bengal," is the first of its kind, and has been described in the pages of "Nature" as a remarkable production. Rāi Rāmbrahma's scientific attainments have procured him the honour of election as Corresponding Member of the London Zoological Society, and it is to be hoped that our own Society will readily grant him a corresponding distinction here.

Paṇḍit Viṣṇu Prasād Rāj Bhāṇḍari, Chief Librarian of the Durbar Library, Nepal, is descended from one of the Prime Ministers of the last Newar Kings of Bhāt-gāon. Since the fall of the Newar Kingdom his family has kept up its literary reputation. Viṣṇu Prasād is a good Sanskrit scholar, thoroughly well-versed in Tāntrik lore. Though not brought up in Western methods, he has a good idea of cataloguing, and has reduced the chaotic mass in which the library was thrown into order. He is always courteous and helpful to European explorers. Besides the knowledge of books Viṣṇu Prasād possesses a thorough knowledge of the manners and customs of the people of Nepal both in modern and in ancient times. He is a complete master of the changes of the social condition of the Nepalese people wrought by the Goorkha conquests.

Lieut.-Col. J. Scully, I.M.S., expressed a wish to withdraw from the Society.

The Secretary read the names of the following gentlemen who had been appointed to serve in the various Committees for the present year :—

#### FINANCE AND VISITING COMMITTEE.

Captain A. R. S. Anderson, I.M.S., Mr. W. K. Dodds, Mr. C. L. Griesbach, C.I.E., The Revd. H. B. Hyde, Mr. J. D. Nimmo, Mr. R. D. Oldham, Mr. A. Pedler, F.R.S.

#### LIBRARY COMMITTEE.

The Hon'ble Mr. Justice Gurudas Banerjee, Babu Gaurdas Bysack, Babu Pratap Chandra Ghosh, Mr. T. H. Holland, The Revd. H. B. Hyde, Dr. Ashutosh Mukerjee, Mahamahopadhyaya Nilmani Mukerjee Nyayalankara, Mr. A. Pedler, Dr. Mahendralal Sircar, C.I.E., Dr. G. Watt, C.I.E.

#### PHILOLOGICAL COMMITTEE.

Maulvi Abdus Salam, Maulvi Ahmad, Babu Gaurdas Bysack, Babu Pratap Chandra Ghosh, Dr. G. A. Grierson, C.I.E., Dr. Ashutosh Mukerjee, Mahamahopadhyaya Nilmani Mukerjee Nyayalankara, Mr. F. E. Pargiter, Captain D. C. Phillott, I.S.C., Pandit Satyavrata Samasrami, Dr. Mahendralal Sarkar, C.I.E., Dr. M. A. Stein, Mahamahopadhyaya Chandra Kanta Tarkalankara, Babu Nagendra Nath Vasu, Mr. A. Venis.

#### COINS COMMITTEE.

Mr. J. A. Bourdillon, Mr. L. W. King, Babu Panchanan Mukerjee, Mr. V. A. Smith, Mr. E. Thurston.



(3) SHĀHJAHĀN (1037-1068 A.H.=1628-1658 A.D.):

Rupees from the following Mints :

Ahmadābād (type : lettered surfaces)	1038 (1), 1041	2
Akbarnagar " "	1042 (4) ...	1
" (type : square areas)	1047 ...	1
Bhilsā " "	date obliterated	2
Lahore " "	6 (1043), 22, 24 (1060), 25 (1061)	5
Multān (type : one circular area)	1040 (3), 1042 (5) ...	2
Patna (type : lettered surfaces)	1041 (r. y. 4, Ilāhī month <i>Day</i> )	1
" (type : square areas)	12, 13, 14 (1050), 15, 18, 23, 27, 29 ...	11
Qandahār " "	1049 (12) ...	1
Sūrat " "	1055 ...	1
" (type : lettered surfaces)	1038, 1040 ...	3
Tattah " "	r. y. 21 ...	1
Mint obliterated	... ..	12 : 43

(4) AURANGZĒB (1068-1119 A. H.=1658-1707 A.D.):

Rupees from the following Mints :

Akbarnagar (with <i>mīhr-i-munīr</i> )	r. y. 23, 24, 27, 29, 30, 31, 34, 36, 40, 41 ...	11
" (with <i>badr-i-munīr</i> )	r. y. 45... ..	1
Aurangābād, 1074	... ..	1
'Azīmābād, 1118 (50)	... ..	2
Barēli 1103, (35)	... ..	1
Burhānpūr, date obliterated	... ..	2
Cīnāpatan, r. y. 39	... ..	1
Dāru-l- <u>khilāfah</u> <u>Shāhjahānābād</u> , 1100 (32), 1104 (37), 1113 (45)	... ..	4
Dāru-s-saltānah Lāhōr, 1092 (24), 1104 (37)	... ..	2
Etāwā, 1112 (44)	... ..	1
Golkondah, r. y. 5, 23	... ..	2
Jahāngīrnagar, 1112 (44 and 45), 1114 (46 and 47)	... ..	6
Jūnagarh, 1097 (29)	... ..	1
Katak, 1119 (51)	... ..	1
Machlipatan, 1111 (44)	... ..	1
Makḥṣūṣābād, 1116 (48)	... ..	1
Muḥammadābād, 1101 (33)	... ..	1
Multān, 1100 (32)	... ..	1

	Patna, 1095 (28), 1097 (29 and 30), 1105 (38),		
	1109 (41 and 42), 1113 (46), 1115 (47),		
	1116 (48 and 49) ... ..	14	
	Sūrat, 1096 (29), 1097 (29), 1101 (34), 1102 (34),		
	1103 (35), 1109 (42), 1111 (44), 1117 (49) ...	15	
	Tattah, r. y. 10, 20 ... ..	2	
	Mint uncertain ( <i>sābhar</i> ?), 1100 (34) ...	1	
	Mint obliterated ... ..	29	101
(5)	<u>SHĀH</u> 'ĀLAM I. BAHĀDUR (1119-1124 A. H. = 1707-1712 A. D.):		
	Rupees from the following Mints:		
	Akbarnagar, r. y. 2 ... ..	1	
	'Aẓīmābād, r. y. 1, 2 (1120), 4 (1122), 5 (1123) ...	5	
	„ a half-rupee (weight 79 gr.), with		
	regnal year 1 ... ..	1	
	Lakhnau, r. y. 3 ... ..	1	
	Murshidābād, r. y. 1 ... ..	3	
	Mint obliterated ... ..	2	13
(6)	JAHĀNDĀR <u>SHĀH</u> (1124 A. H. = 1712 A. D.):		
	Rupee from Mint Dārul-khilāfah <u>Shāhjahānābād</u> ,		
	1124 (1) ... ..	1	1
(7)	FARRUKHSIYAR (1124-1131 A. H. = 1713-1719 A. D.):		
	Rupees from the following Mints:		
	'Aẓīmābād, r. y. 2 ... ..	2	
	„ (with <i>mustaqarru-l-mulk</i> ) r. y.		
	4, (1127), 5, 6, 8 (1131) ... ..	7	
	Cināpatan, r. y. 3, 7 ... ..	2	
	Dārul-khilāfah <u>Shāhjahānābād</u> 1127 (4) ...	1	
	Etāwā, r. y. 2 ... ..	1	
	Sūrat, r. y. 1, 7 ... ..	2	
	Mint obliterated ... ..	3	18
(8)	RAFĪ'U-D-DARAJĀT (1131 A. H. = 1719 A. D.):		
	Rupees from Mint Patna, 1131 ( <i>sanah aḥad</i> ) ...	2	2
(9)	RAFĪ'U-D-DAULAH, <u>SHĀHJAHĀN</u> II. (1131 A. H. = 1719 A. D.):		
	Rupee from Mint Lucknow, 1131 ( <i>sanah aḥad</i> ) ...	1	1
(10)	MUHAMMAD <u>SHĀH</u> (1131-1161 A. H. = 1719-1748 A. D.):		
	Rupees from the following Mints:		
	'Aẓīmābād, r. y. 2 (1132), 3 (1134), 20 (1150) ...	7	
	Etāwā, r. y. 2 ... ..	1	
	Kōrā, r. y. 3 ... ..	1	
	Murshidābād, r. y. 1 ( <i>sanah aḥad</i> ) ... ..	1	10

(11) SHĀH 'ĀLAM II. (1173-1221 A. H. = 1759-1806 A. D.):

Rupee from Mint Patna, 1175 (3) ...	...	...	1 : 1
Grand Total ...			202

**II.** REPORT ON 13 old Silver Coins, forwarded by the Assistant Commissioner and Collector, Ajmere, with his No. 5146, dated 1st October, 1898.

The coins were found under a banyan tree on the road from the city of Ajmere to the old fortress of Taragarh, on the 21st March, 1898. One coin is broken into two pieces, another one is only a fragment, the rest is complete. They are:—

(1). Coins of <i>Sōmalādēva</i> (date unknown); type as in Cunningham, Coins of Mediæval India, p. 53, and Plate VI, No. 10 ...	...	...	3
(2). Coins of Rahtor King <i>Ajayacandra</i> of Kananj, (date 1165-1193 A. D.); type as in Cunningham, l. c. p. 87 and Plate IX, No. 17 ...	...	...	9
Total ...			12

**III.** REPORT ON 13 old Silver Coins, forwarded by Deputy Commissioner of Lahore, with his No. 4863, dated 25th October, 1898.

The coins are stated to have been found at Khankah Manu Shah in Chunian Khas. Three of them, however, are modern forgeries of square Akbar Rupees, with *Kalimah* on obv. The rest belongs to the following classes:—

(1). Rupees of **AKBAR** (1556-1605 A. D.):

From Multān Mint, round, Ilāhī year 44, month <i>Ardībihisht</i> ...	...	...	1
„ Urdū-i-Zafar-qarīn Mint, square, with <i>Kalimah</i> on obv., year 1000 ( <i>alif</i> ) ...	...	...	1
„ Tattah Mint, square, Ilāhī year 45, month <i>Ardībihisht</i> ...	...	...	1 3

(2). Rupees of **JAHĀNGĪR** (1605-1628 A. D.):

From Burhānpūr Mint, round, with <i>Kalimah</i> on obv., date illegible ...	...	...	1
„ Jālandhar Mint, same type, date illegible ...	...	...	1
„ Tattah Mint, same type, dates 1016 and 1017 ...	...	...	2
„ Mint illegible ...	...	...	3 7
Total ...			10



**IV.** REPORT ON 13 old Silver Coins forwarded by the Collector of Shahabad, with his No. 2689-G., dated 12th November, 1898.

The coins are Rupees of the Sūri Kings Shēr Shāh and Islām Shāh, generally in good preservation. Nothing is known as to locality and time of the find. Their classification stands thus:—

(1) SHĒR SHĀH (947-952 A. H. = 1540-1545 A. D.):

Rupees from the following Mints:

Gwalior, square areas, date 949	...	...	1
Jahānpānāh, circular areas, date 949	...	...	2
<u>Shērgarh</u> , square areas, date 945	...	...	1
"    "    within double-lined border,			
date 949	...	...	1
No Mint, circular areas, dates 948, 950, 951	...	...	5
"    square areas, dates 947, 951	...	...	2 12
(2) <u>ISLĀM SHĀH</u> (952-960 A. H. = 1545-1552 A. D.):			
Rupee from <u>Sharifābād</u> Mint, circular areas, within			
double-lined border, date 953	...	...	1 1
			<hr/>
	Total	...	13
			<hr/>

**V.** REPORT ON 18 gold coins forwarded by the Deputy Commissioner of Gujranwala, with his No. 2536, dated 12th December, 1898.

Nothing is known as to locality and time of the find.

The coins are debased gold coins of the Kidāra or Little Kuṣaṇa kings; date 5th century A. D.

Their *obv.* shows the figure of the king, facing left; under king's l. arm in Nāgarī characters *ki-da* or *ki-da-ra*; behind traces of *ka-ṣa* [*ṇa*]; under king's r. arm some letters read *ka-pha-na* by General Cunningham. This, however, remains extremely doubtful.

*Rev.* shows figure of a seated goddess (*Ardokhro*) with cornucopiæ in her left hand. Only slight traces of a legend are visible.

**VI.** REPORT ON 81 and 6 old Silver Coins forwarded by the Collector of Monghyr, with his Nos. 3328-R. and 3329-R., dated 27th January, 1899.

The coins belong to two separate treasure troves, the larger of which, consisting of 81 coins, is reported to have been made on the bank of the river Khel at Bhalui, Police Station Sikandra, Sub-Division Jamui, while the remaining 6 coins were found in a Pyne of Taluka Anantpur, Police Station Jamui. They belong to various Sultans of Delhi and Bengal, as also to the Sūri Kings, Shēr Shāh, Islām Shāh and Muḥammad 'Ādil Shāh, and to the Moghul Emperor Akbar.

With the exception of a square *Kalimah* Rupee of Akbar, dated in the Hijra year 1001 (written in words: *alif aḥad*), they belong to well-known types, and do not show any new varieties. Their preservation is on the whole good. The coins may be thus classified:—

(1)	NĀṢIRU-D-DĪN MAḤMŪD <u>SHĀH</u> of Delhi (1246-1265 A. D.):			
	Usual type, Mint and date gone	...	...	6 6
(2)	<u>SHĒR SHĀH SŪRĪ</u> (1540-1545 A. D.):			
	Rupees from the following Mint places:—			
	Gwalior, square areas, with dates 950 and 951	...	...	2
	Ḥiṣār, circular areas, date 949	...	...	1
	<u>SHARĪFĀBĀD</u> , circular areas, within double-lined border, date 949	...	...	1
	No Mint, square areas, with date 948	...	...	3
	„ circular areas, with date 949	...	...	5 12
(3)	ISLĀM <u>SHĀH SŪRĪ</u> (1545-1552 A. D.):			
	Rupees from the following Mint places:—			
	Agra, square areas, with date 956	...	...	2
	Gwalior „ with date 957	...	...	1
	No Mint, square areas, with dates 955, 956, 957, 959, 960	...	...	9 12
(4)	MUḤAMMAD <u>SHĀH 'ĀDIL</u> (1552-1554 A. D.):			
	Usual type, no Mint and date	...	...	2 2
(5)	<u>GHIYĀṢU-D-DĪN BAHĀDUR SHĀH</u> of Bengal (1554-1560 A. D.):			
	Usual type, no Mint and date	...	...	1 1
(6)	<u>GHIYĀṢU-D-DĪN JALĀL SHĀH</u> of Bengal (1560-1563 A. D.):			
	Usual type, no Mint and date	...	...	1 1
(7)	DĀŪD <u>SHĀH KARRARĀNĪ</u> (1572-1576 A. D.):			
	Usual type, no Mint and date	...	...	2 2
(8)	MOGHUL EMPEROR AKBAR (1556-1605 A. D.):			
	Rupees from the following Mint-places:			
	Aḥmadābād, square, with Ilāhī year (uncertain)	...	...	1
	Aḥmadnagar (styled <i>dāru-l-amān</i> ), round, with <i>kalimah</i> on obv., date 980	...	...	1
	Akbarnagar, round, with Ilāhī year 50, month <i>Tīr</i>	...	...	1
	Bairātah, round, with Ilāhī years, 44 on one, months: <i>Farwardī, Khurdād, Tīr</i>	...	...	3
	Burhānpūr, round, Ilāhī year 49, month <i>Day</i>	...	...	1
	Jaunpūr, round, with <i>Kalimah</i> on obv., years 983, 985	...	...	2
	Lahore: full Rupees, round, with Ilāhī year 42, month <i>Tīr</i>	...	...	1
	„ half Rupees, round, with Ilāhī year 45, month <i>Ābān</i> , 48, <i>Day</i>	...	...	2

Patna : full Rupees, with Ilāhī years 40 and 43, <i>Khurdād</i> (square) ; 48, <i>Isfandārmiz</i> (square) ; 49, <i>Ardibihisht</i> (one square and one round), two (square) of uncertain date ... .. 7	
„ half Rupees, round, with Ilāhī years 45 <i>Farwardīn</i> , 46 <i>Shahrēwar</i> , 48 and 49 <i>Amarādād</i> ... 4	
Urdū-i-Zafar-qarīn : square, with <i>Kalimah</i> on obv., year 1000 ( <i>alif</i> ) :	
Full Rupee ... .. 1	
Half Rupees ... .. 2	
Ilāhābād : late imitation, no date ... .. 1	
No Mint : square Rupees with <i>Kalimah</i> on obv., and years 977, 986, 987, 988, 989, 991, 992, 997, 998, 1001 (in words $\frac{\text{الف}}{\text{احد}}$ ) ... .. 13	
No Mint : square, half Rupees with years 990 and 994 ... 2	
„ round <i>Kalimah</i> Rupees, with years 979, 980, 984, 985, 989 ... .. 8	
„ half Rupee, square, with Ilāhī year 42 ... 1 51	
Grand Total ... ..	87

Major A. Alcock, I.M.S., exhibited some models of deep sea fishes.

Mr. F. Finn exhibited a pair of albino Blue-winged Teal (*Querquedula circaia*) and an albino Snipe (*Gallinago coelestis*) and made remarks on them.

The following papers were read :—

1. *On Time in India : a suggestion for its improvement.*—By R. D. OLDHAM, F.G.S., Superintendent, Geological Survey of India.

In his anniversary address our President reminded us that the magnificent collections and additions to the knowledge of the deep-sea Fauna of the Indian seas, which have been made through the agency of the Indian Marine Survey, are due to the initiative of this Society. To-night I desire to lay before you a proposition that we shall once more take the initiative, this time in introducing a far reaching but attainable reform, I mean the universal adoption of a standard time in India, and the abolition of the present barbarous arrangement, unworthy of a country pretending to civilisation, by which every place keeps its own time.

In former days, when means of communication were slow and difficult, and there was no means of maintaining a standard time, it was natural that each place should adopt its own local time, usually obtained from a

sun dial, as often as not constructed for a different latitude and inaccurately adjusted to the meridian. Now that the whole country has been opened up by railways and telegraphs, and travel is not only easy but largely indulged in, the system has become anomalous by which a traveller from one town to another, who wishes to keep an appointment in the town he has come to, must first find out how many minutes the local time is fast or slow of that which he has brought with him, and must then either work out a sum in arithmetic or alter his watch.

To a certain extent a standard time has been adopted in India, for the railways universally use Madras mean time. This is also adopted by the Telegraph Department, but the effect is nullified by the printing, in the Official Telegraph Guide, of a table, covering 44 pages, which gives the number of minutes that the local time is fast or slow of Madras time. The result is a direct encouragement to the maintenance of the present inconvenient and antiquated system, and a hindrance to the adoption of a more rational one.

Some years ago an attempt was made to introduce Madras time as the standard for ordinary use in Bombay, but it met with so much opposition that it had to be abandoned. This opposition, though logically unjustifiable, was based on motives ingrained in human nature. The Bombay office man, told to come to office at half-past nine, instead of ten, felt himself defrauded of half an hour's leisure, just as the Calcutta office man would feel it a grievance if he was told to stop till half-past five, instead of being allowed to depart at five, and this though each gained at one end what he lost at the other. So too through all the arrangements of domestic life a nominal change of time would at first produce a feeling of strangeness, which would, however, soon wear off and the change would be recognised as purely nominal, not real.

A more potent cause of resistance to the general adoption of the present standard time lies in the fact that it is Madras time. The citizen of Bombay, proud of being '*primus in Indis*' and of Calcutta, equally proud of his city being the Capital of India, and—for a part of the year—the Seat of the Supreme Government, alike look down on Madras, and refuse to change the time they are using for that of what they regard as a benighted Presidency; while Madras, having for long given the standard time to the rest of India, would resist the adoption of any other Indian standard in its place.

All these local jealousies would disappear if the standard adopted was that of Greenwich, which is not only the prime meridian for nearly the whole of the civilised world, but gives the standard time to the greater part of four continents.

The adoption of a single standard for all India, whatever it might be,

would, however, cause some inconvenience on account of the extent of the Empire from east to west. Extending over more than  $30^{\circ}$  of longitude the difference between local and standard time would, at some places, exceed an hour, and though a small difference between the nominal and real time of a place is of no importance, it becomes a source of inconvenience when the difference is great.

This difficulty can be simply and effectually met by adopting the system, in use throughout Europe and North America, of what are known as hour-zones. On this system the land is divided into belts running north and south, each  $15^{\circ}$  of longitude in width, and over each belt the same time is used, while in the belts to the east and west a change of a whole hour forwards or backwards is made. The standard adopted is Greenwich mean time, and wherever the system has been adopted all watches and clocks show the same minute, the only difference being in the hour.

But, as a strict adherence to this system would lead to practical inconvenience, since it would be constantly necessary to consult a map to find the exact longitude of a place, a compromise has been adopted, and the boundaries of the hour-zones are made to follow the principal political boundaries. In Europe, for instance, three times are recognised; East European time, exactly two hours fast of Greenwich, Mid European, one hour fast of Greenwich, and West European, or Greenwich time. Mid-European time is used by Italy, Switzerland, Austria, Germany, Holland, Denmark and Norway and Sweden. Throughout these countries the traveller has no trouble about time, his watch needs no alteration, nor has he to do any sums of addition or subtraction. If he goes east of these countries the only change he has to remember is one of exactly an hour fast, a correction which can be easily remembered and automatically made without any proficiency in mental arithmetic. If he goes westwards, to England, he has only to make a similar correction of an entire hour, but in the opposite direction, to obtain Greenwich time.

In France this has not yet been adopted as the standard, and a change of some minutes is necessary, just as when going from one place to another in India; France is, however, in advance of us, in so far that there is only one standard time in use throughout the country and its African colonies.

In India a similar system of hour-zones could be adopted, the lines of division following the boundaries of the principal administrative divisions, as is done in the United States, Canada and Russia, but as regards the standard to be used there are three courses open. First, to retain Madras time, secondly to adopt a standard of  $5\frac{1}{2}$  hours in advance of Greenwich, or thirdly to adopt the even hour time zone system.

The first of these, Madras time, is not likely to be universally adopted,

and for the second the only recommendation is that it would involve a change of only 9 minutes from the standard at present in use on the Indian railways. But if a change is to be made it is immaterial whether it is one of 9 or 21 minutes, each would be equally inconvenient at first, and the slight feeling of inconvenience would pass off as rapidly in the one case as in the other.

Against the adoption of either of these two standards, is to be placed the fact that the Indian railway system must inevitably become linked up, as has already happened to the telegraph system, with the railways of Europe and Western Asia on the one hand, and of the far East on the other. In the first of these Greenwich time is already the standard, and on the other it will probably be adopted. There would then be a change of a fraction of an hour, or of some odd number of minutes, at the junction, instead of the much simpler change of a whole hour, or perhaps no change at all.

Another objection to the adoption of either Madras time, or  $5\frac{1}{2}$  hours fast of Greenwich, as the standard is that if combined with the hour zone system it would necessitate three separate times in India. A central time would be used by Bengal, Madras, Central Provinces, North-West Provinces, Central India, Rajputana and probably, for convenience, Bombay, exclusive of Sind; western time, one hour slow of Central, would be used by the Punjab, Sind and Baluchistan; while eastern time, one hour fast of Central, would be used in Assam and Burma.

If, on the other hand, the hour-zone system be adopted in its completeness, using Greenwich as the starting-point, we would only have two times in India, an Eastern time, exactly 6 hours fast of Greenwich, used by Bengal, Assam and Burma, and a Western time, exactly 5 hours fast of Greenwich, used by the rest of India. Once this system was adopted the traveller in either group of provinces or presidencies would find the same time in use everywhere, and when he crossed the boundary he would but have to remember that the time was an even hour fast or slow of that he was carrying with him. At first it might seem strange to find that the mail train from Calcutta took only half an hour to travel from Buxar to Moghal Sarai, while it took, or appeared to take, two hours and a half to travel in the opposite direction, but the experience of America and Europe has shown that no real difficulty arises from this change of an even hour at certain defined places, and that people readily adapt themselves to it, more readily indeed than to the daily change of time at sea or to that immense improvement, the twenty-four hour system of reckoning time.

To understand what the adoption of the system would mean in practice, let us take the case of Calcutta. In the first place we should have to put our watches back 6 minutes, and there the sum and total of all that can be

considered as a drawback ends. On the other hand we should no longer have the clock outside the General Post Office pointing to one time, and that on the Howrah platform pointing to another. The traveller would no longer have to make an intricate calculation to find out at what time (local) he would have to leave his house to catch a train which departs at another time (Madras). If he set sail for Burma, or went up the river to Assam he would not need, on arrival at his destination, to make anxious enquiries as to the time in use there, for it would be exactly the same as what his watch showed; and if he travelled in the other direction to Madras, Bombay or Delhi, he would only have to remember that the time there was exactly an hour slow of his watch.

The benefit would by no means be confined to travellers. The merchant in his office, receiving a telegram from London, would know by a glance at his watch, exactly 6 hours fast of Greenwich, how long the telegram had taken in transit. If it were from Berlin or Rome the difference in time would be five; if from New York, ten hours. The shipmaster in the Hooghly, seeing the time-ball drop, would know that it was exactly 7 A. M. by Greenwich time, and determine the error of his chronometer at a glance, and without any need for calculation. And so in every branch of commercial or social intercourse, where time has to be considered, the advantages of the adoption of standard time would be encountered at every turn.

If this is true of the ordinary intercourse of man with man, it is especially true in all scientific investigations where the comparison of time observations at different places is required. I have myself recently had to deal with a mass of time records referring to the earthquake of 1897, and found that a large number had to be rejected because it was impossible to ascertain what standard of time had been used, while in many others it was only after a large mass of calculations had been gone through that the relation of observations, from different places, to each other could be determined.

This is an aspect of the question with which this Society is as much concerned as with the general advantages of the adoption of a standard time. It is for this reason that I have drawn up this note for the consideration of the Society, and propose that we should memorialise the Government of India to adopt a standard time for universal use in India. The standard actually adopted is comparatively an immaterial point but, as pointed out above, the balance of advantages lies with Greenwich, as opposed to any local Indian time.

The means for bringing the standard adopted into general use could be very simple. In India, as elsewhere, the initiative would have to come from the State, and the first step to be taken would be to discontinue the table, occupying 44 pages of print, in the official Telegraph Guide which

shows the difference between standard and local time. This would cost nothing, it would be a slight saving of expense, and of itself would soon lead to standard time being adopted everywhere except in the Presidency towns, for, when local time could no longer be obtained from the telegraph offices, standard time would soon come into general use.

In the Presidency towns there are local observatories which give a daily time signal, and indirectly control the time in general use. These time signals should be converted to Greenwich time, a change which would be to the advantage of the shipmasters for whose benefit they are primarily intended. Added to this the standard time should be used in all Government offices and shown by all clerks directly controlled by Government.

If this were done the experience of other countries has shown that the general public would soon come to adopt the standard time, and, having once appreciated its advantages, would soon wonder how they had so long endured the old system.

#### APPENDIX.

List of Countries, Colonies and Dependencies in which Greenwich time has been adopted as the standard civil time. Taken from Prof. Milne's table of civil times, printed in the *Geographical Journal*, February, 1899.

Austria, 1 h. F.	Malta, 1 h. F.
Bechuanaland, 1½ h. F.	Natal, 2 h. F.
Belgium, G. M. T.	New South Wales, 10 h. F.
Bosnia, 1 h. F.	Norway, 1 h. F.
Bulgaria, 2 h. F.	Orange Free State, 1½ h. F.
Canada,* 4 h. to 8 h. S.	Pescadores, 9 h. F.
Cape Colony, 1½ h. F.	Queensland, 10 h. F.
Congo Free State, 1 h. F.	Rhodesia, 1½ h. F.
Denmark, 1 h. F.	Romania, 2 h. F.
German Empire, 1 h. F.	South Australia, 9 h. F.
Herzegovina, 1 h. F.	Sweden, 1 h. F.
Hungary, 1 h. F.	Switzerland, 1 h. F.
Italy, 1 h. F.	Tasmania, 10 h. F.
Japan, 9 h. F.	Transvaal, 1½ h. F.
Korea, 9 h. F.	Turkey, 2 h. F.

- \* 1. *Intercolonial time*, Nova Scotia, Prince Edward's Island, 4 h. S.  
 2. *Eastern time*, New Brunswick, Montreal, Ontario, 5 h. S.  
 3. *Central time*, Manitoba, Kenatin, 6 h. S.  
 4. *Mountain time*, Gaskatchewan, Assiniboia, Alberta, Athabasca, 7 h. S.  
 5. *Pacific time*, British Columbia, 8 h. S.



United States,\* 5 h. to 8 h. S.  
Victoria, 10 h. F.

West Australia, 9 h. F.  
Zululand, 2 h. F.

Mr. T. H. Holland proposed :—

“That Mr. Oldham’s paper as read at the meeting should be laid before the Council for any further action that they consider necessary.”

The proposal was seconded by Major D. Praiu, I.M.S., and carried by eighteen votes against one.

2. *Muḥammad Shāh* (1719-1748), *Couplet on Coins.*—By W. IRVINE, I.C.S. (retired).

In his article on “Couplets on Coins of kings after the time of Jahāngir,” *Journal*, Vol. LVII (1888), Part I, p. 29, the late Mr. C. J. Rodgers gives a coin from the Sūrāt mint with the couplet :—

سکه زد در جهان بلطف اله بادشاه زمان محمد شاه

“The King of the Age, Muḥammad Shāh,

“Struck coin in the world by God’s grace.”

Having prefaced his remarks by saying “Muḥammad Shāh never used any couplets,” he adds, after mentioning the existence of the above coin, “I do not think this is a coin of Muḥammad Shāh, but of some rebel king. The style is not that of Muḥammad Shāh.”

This type of Muḥammad Shāh’s coinage must be excessively rare ; for it is not mentioned in the British Museum, the Indian Museum, or the Lahore catalogue. But Mr. Rodgers was surely somewhat rash in rejecting it as not one of Muḥammad Shāh’s coins. I am certain that, if he had seen a passage in the *Mirāt-i-Aḥmadī*, a history of Gujārāt, he would have admitted the coin to be one issued, for a short time at any rate, in that particular reign. Apparently it was produced at the one mint of Sūrāt (in *ṣūbah* Gujārāt), and even there was almost immediately suppressed.

The *Mirāt-i-Aḥmadī*, B. Museum, Add. MSS. No. 6580, fol. 167*b*. referring to the accession of Muḥammad Shāh states that a *Ḥasbu-l-ḥukm* [a formal communication issued by the *wazīr*, and so named from its opening words “According to the order”] came to Nāhar Kḥān,

\* 1. *Eastern time* ; Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, Rhode Island, New Jersey, Pennsylvania, Maryland, Virginia, N. Carolina, S. Carolina, Georgia, Florida ; 5 h. S.

2. *Central time*, Minnesota, Wisconsin, Michigan, Iowa, Illinois, Indiana, Ohio, Missouri, Kentucky, Tennessee, Arkansas, Mississippi, Alabama, Louisiana ; 6 h. S.

3. *Mountain time* ; Montana, Dakota, Wyoming, Nebraska, Utah, Colorado, Kansas, Arizona, New Mexico, Texas ; 7 h. S.

4. *Pacific time*, Washington, Oregon, Idaho, Nevada, California ; 8 h. S.

the *diwān* of the province, informing him that Muḥammad Roṣḥan Akhtar having succeeded to the throne had adopted the title of Muḥammad Shāh; that all appointments in force were confirmed, and all allowances, namely, assignments (*jāgīrs*), daily allowances (*yaumiyah*), and grants for support (*madād-i-ma'ūsh*) were continued. Thereupon, Mihr 'Alī Khān, the deputy governor, Rūḥullāh Khān, the deputy *diwān*, and all the other officials having assembled, the accession was proclaimed by beat of drum, the royal prayer (*Khuṭbah*) was recited, and coin was issued with the inscription [corresponding to the couplet already given above from Mr. Rodgers' article]. But after this the inscription on the coin was altered to *sikkah-i-mubārak-i-Muḥammad Shāh Bādshāh-i-ghāzī* [that is, to the prevalent form for the coin of his reign].

3. *Jangnāmah of Farrukhsiyar and Jahāndār Shāh, a Hindī poem by Ārīdhar (Murlīdhar), a Brahman of Prāg.—By W. IRVINE, I.C.S., (retired).*

4. *Gōpīnāthapura Inscription of the time of Kapilēndra Dēva.—By M. M. CHAKRAVARTTI.*

5. *Gayā Inscription of the time of Nayapāla Dēva.—By M. M. CHAKRAVARTTI.*

These papers will be published in the *Journal*, Part I.

6. *The Suvarṇa, or original gold coin of Ancient India (with exhibition of specimens).—By W. HOEY, D. Litt.*

Some years ago I received from two old sites in the Gorakhpur District at different times what at first sight appeared to me to be gold earrings of a type similar to the rhinoceros-horn rings worn by Kānphata Jogis, but on second consideration I saw that they could not have been worn as earrings because they could not be closed. I kept them and waited for an explanation of their use.

While reading the late General Cunningham's lucubrations on the system of weights, measures, coins and values of money, in which he seeks to establish a connection between the Indian and the Persian and other systems further west, I noticed that the *niṣka*, which would seem to be the same as the *suvarṇa*, was also an ornament, and the thought occurred to me that in an age when gold and silver are not coined and pass merely at bullion value, it is highly probable that the pledging and sale of ornaments may have suggested the convenience of making up gold in pieces easily handled and of approximately equal size: but still knowing that my specimens, whatever they might be, were not of exactly equal weight, and did not correspond to any one weight noted

by General Cunningham, I was uncertain whether I should publish a note on them or not. I have recently made some observations which induce me to exhibit them to this Society.

I noticed about eighteen months ago, that the wife of a Gurkha Subahdur was wearing gold ornaments in her ear which in general idea corresponded to the flat gold rings or discs which I possessed, and I afterwards learned that these ornaments were called *Sun*, the word for gold, and the Gurkhas have no name for earring save *Sun*. This led me to think that the *suvarṇa* is the *Sun* adapted for currency purposes: and I now submit a *Sun* with the old gold discs which I venture to call *suvarṇas*.

Some months ago a Siamese traveller showed me specimens of ancient coins of his country and I observed that some of them resembled a horse shoe in general shape, but with the ends tapering to a point, being round instead of flat throughout and thickest at the middle. These did not all close up as much as a horse shoe. This form of coin reminded me that I had found many years ago a curious crescent shaped piece of metal at Set Mahet, which might be a coin, and while looking for its connection with ornaments I observed that the Gurkhas call the crescent shaped gold ornament worn in the ears sometimes a *Manipurī Sun* to distinguish it from their own earring which they simply call *Sun*. The theory which I venture to propound is that the *suvarṇa*, *niṣka*, or *karṣa*, was nothing more at first than a piece of gold made up resembling an earring, and of an approximate uniform size or weight, fashioned so as to facilitate handling. The raised rim round the circular hole and round the outer edge of the piece is to prevent it from slipping while it becomes easily drawn by the extended figures when counted or weighed.

It may be an error to imagine that gold coins were cut or stamped to uniform weight. We have the punch-marked silver coins of ancient India which must have been passed by weight in barter for commodities: and what I think is that these beautiful yellow gold discs or rings were in circulation at the same period with the punchmarked coins.

7. *On the origin of the Chākḷai Musalmāns*.—By MAULAVĪ 'ABDUL WALĪ.

The paper will be published in the *Journal*, Part III.

8. *Materials for a Carcinological Fauna of India*. No. 4. Part II. *The Brachyura Cyclometopa, with an Account of Three of the Constituent Families, namely, the Portunidæ, Cancridæ and Corystidæ*.—By A. ALCOCK, I.M.S., Superintendent of the Indian Museum.

The paper will be published in the *Journal*, Part II.







OF THE

# ASIATIC SOCIETY OF BENGAL,

FOR MAY, 1899.

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The Monthly General Meeting of the Asiatic Society of Bengal, was held on Wednesday, the 3rd May, 1899, at 9-15 P.M.

R. D. OLDHAM, ESQ., F.G.S., in the chair.

The following members were present:—

Major A. Alcock, I.M.S., Mr. J. Bathgate, Dr. T. Bloch, Mr. F. Finn, Major C. R. M. Green, I.M.S., The Revd. H. B. Hyde, Mr. H. E. Kempthorne, Mr. T. H. D. La Touche, Mr. J. Mann, Mr. C. S. Middlemiss, Babu Panchanan Mukerjee, Mr. J. D. Nimmo, Mr. F. E. Pargiter, Major D. Prain, I.M.S., Rai Ram Brahma Sanyal Bahadur, Mr. M. J. Seth, Mahamahopadhyaya Haraprarad Shastri, Mr. H. A. Stark, Mr. A. Tocher, Mr. E. Thornton, Babu Nagendra Nath Vasu.

*Visitors*:—Mr. P. E. Cameron, Mr. H. T. Fulton, Mr. T. H. Smith, Mr. G. H. Turton, Mr. T. L. Walker.

The minutes of the last meeting were read and confirmed.

Thirty-two presentations were announced.

Mr. Chas. A. Silberrad was balloted for and elected an Ordinary Member.

The Revd. H. Whitehead expressed a wish to withdraw from the Society.

The Secretary reported the death of Sir Monier Monier-Williams, Knt., K.C.I.E., an Honorary Centenary Member of the Society.

Mr. F. Finn exhibited a boar's skull showing malformation by over-growth of a lower canine, and made the following remarks on it:—

The boar's skull exhibited to-night, showing the right lower canine curved into a semi-circle, was presented to the Indian Museum last month by Dr. Kars Zorab, who writes concerning it:—

“I procured the skull while out shooting in the North Bhagalpur District. The animal was very old and had several scars on its body, but there was no outward mark over the spot where the lower jaw is injured. I think the same blow that broke the tusk of the upper jaw is the cause of the curious bony growth. The abnormally developed tusk had grown right through the cheek; the wound thus made was quite healed. The animal was killed last February.”

Rai Ram Brahma Sanyal Bahadur exhibited a living sea-snake and living hybrids between guinea-fowl and common fowls, and made remarks on them.

Mahamahopadhyaya Haraprasad Shastri exhibited some buddhistic religious objects from Nepal, and made remarks on them.

The following papers were read:—

1. *On the genuineness of the grant of Çivasimhla to Vidyāpati-thakkura.*—By G. A. GRIERSON, C.I.E., PH.D., I.C.S.

The paper will be published in the *Journal*, Part I.

2. *On the identification of Kusināra, Vaisāli and other places mentioned by the Chinese pilgrims.*—By W. HOEY, LITT. D., I.C.S.

ABSTRACT.

I take up the route of Fa Hian after he left Kanauj and I show that the forest of A-li is probably the modern pargana of Asiwan: that the country of the Shachi and its capital lay near the Gogra and that the capital, Pi-so-kiā is probably Paska. I adhere to Set Mahet as Sravastī and then coming up to the north of the Lumbini garden I place the city of Kapilavastu at or near Çaina-Maina, and indicate the probable location of Krakuchandakula and Kanakamni's town, but I do not desire to anticipate Major Waddell.

I then show that Vaisāli is at Cherānd, and Kusināra at Sewān. Mānġhi is where Buddha left the Liehavis. Kasia is the place where Buddha performed the Renunciation and assumed the Kaṣāya garment of the mendicant. I make suggestions as to Rāmagrāma and the stupa known as that of Rāmagrāma; also as to the Charcoal stupa.

I show that Besarh is the city of the monster Fish and I explain why Asoka placed pillars at Kesaria and Ararāj.

Coming back to Kanauj I proceed with Hwen Thsang down the Ganges and offer a suggestion to help in fixing 'O-yu-t'ō and 'O-ye-mu-k'ia the latter being placed at Asui. I reaffirm Kosambī as in the neighbourhood of Kosam.

Coming along the Ganges from Benares I dispose of the identification of Ghazipur as 'Cheu-chn' and I show where the monastery of the 'Unpierced Ears' was—at Waina—in the Ballia District. In this connection I mention Sikandarpur on the southern bank of the Gogra river and, referring to the Rahila palace close to this most ancient spot, I point out that relatively to Sewan (as Kusināra) and Benares it fits in with the place where the pious Brahman entertained Buddha's son long ages after the Great Teacher had himself died.

The paper will be published in full in the *Journal*, Part I.

3. *On a curious system of tree-worship in Bengal.*—By MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, M.A.

The paper will be published in the *Journal*, Part III.



PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR JUNE, 1899.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 7th June, 1899, at 9-15 P.M.

T. H. HOLLAND, ESQ., F.G.S., in the chair.

The following members were present :—

Major A. Alcock, I.M.S., Mr. J. Bathgate, Dr. T. Bloch, Mr. F. Finn, Mr. T. H. D. La Touche, Mr. W. A. Lee, Mr. C. Little, Kumar Rameshwar Maliah, Mr. R. D. Mehta, C.I.E., Mr. J. D. Nimmo, Mr. F. E. Pargiter, Rai Ram Brahma Sanyal Bahadur, Mr. M. J. Seth, Mr. E. Thornton, Mr. A. Tocher, Mr. J. Wyness.

Visitor :—Mr. T. L. Walker.

The minutes of the last meeting were read and confirmed.

Fifty-two presentations were announced.

Mr. P. H. O'Brien, I.C.S.; Babu Sris Chandra Basu, Munsiff, Benares; Babu Chandra Kumar Sarkar, Assistant Engineer, Sewerage and Water Works, Sonarpura, Benares City; Babu Purnendu Narayan Sinha, Zemindar of Bankipur; and Maulavi M. Ibrahim, B.A., Assistant Inspector of Schools, Chinsurah, were balloted for and elected Ordinary Members.

Mr. A. Hogg, expressed a wish to withdraw from the Society.

The SECRETARY reported the death of Babu Gaurdas Bysack, a Life Member of the Society.

The proposed alterations in the Society's Rules of which intimation has already been given by circular to all resident members in accordance with Rule 64A were brought up for discussion previous to further circulation under Rule 64c.

The Secretary explained that the proposed revision involved no radical alterations of Rule but would merely legalize the current usages of the Society which had become slightly modified in certain particulars since the present rules were published in 1876.

Mr. C. Little proposed :—

“ That the question of change of rules be postponed till the cold weather when the senior officers of the Society are likely to be present in Calcutta, and be in position to advise the Society in so important a matter as a change of rules.”

The proposal was seconded by Mr. R. D. Mehta, C.I.E.

Major A. Alcock, I.M.S., proposed as an amendment :—

“ That the rules be reprinted with the proposed alterations of the Sub-Committee appointed by the Council of the Society.”

Mr. J. Bathgate seconded the amendment.

The Resolution and amendment were put to vote and lost.

Mr. T. H. D. La Touche proposed :—

“ That the rules as printed in the form submitted to the members for discussion should be provisionally approved of by this meeting on the understanding that they should be brought before a subsequent meeting of the Society for final disposal.”

The proposal was seconded by Mr. W. A. Lee, and carried.

With reference to the Resolution carried at the April meeting, relative to Mr. R. D. Oldham's proposal for the introduction of a standard time for the whole of India, the Secretary laid on the table the following letter addressed to the Private Secretary to His Excellency the Viceroy.

*Calcutta, 22nd May, 1899.*

SIR,

I am directed by the President and Council of the Asiatic Society of Bengal to request that you will be good enough to lay before His Excellency the Governor-General, as Patron of the Society, their views regarding the feasibility and desirability of the introduction of a standard time for universal use throughout the Indian Empire.



2. The subject was brought before the Society by Mr. R. D. Oldham at their monthly meeting held on 5th April, 1899, and on the motion of Mr. T. H. Holland seconded by Major D. Prain, I.M.S., the meeting decided by 19 votes to 1 to refer Mr. Oldham's proposal to the Council for any further action they might consider necessary. A copy of the Proceedings of the meeting of the Society held on 5th April, containing the text of Mr. Oldham's note and of the resolution adopted by the meeting is enclosed for His Excellency's information.

3. In accordance with the resolution adopted at the meeting of the Society the subject was considered by the Council at their next ensuing meeting, held on 28th April, 1899, when it was unanimously decided that the views of the Council should be submitted to His Excellency's favourable consideration.

4. The Council of the Society are unanimous as to the desirability of introducing a standard time into general use in India, and are also of opinion that the preliminary enquiries which must be made before the feasibility of the introduction of a standard time can be determined, or the selection of the standard for adoption be made, can most advantageously and authoritatively be carried out by the Government of India; from whom too the administrative action necessary for the introduction of any change from the present system must come.

5. Apart from the general inconvenience of the present system of local times the Council are desirous of pointing out, as a matter with which they are especially concerned, the hindrance to exact scientific observation which it entails. Local time, away from the principal sea ports, is obtained by an allowance of a certain number of whole minutes in addition to, or subtraction from, the daily time signal transmitted, at 4 p.m. Madras time, through the telegraph system. The number of minutes to be added or subtracted is printed in the official "Telegraph Guide" and is presumably intended to be the nearest whole minute to the actual difference in time. This intention is not always fulfilled; for instance Calcutta time, which is conventionally and in accordance with the official "Telegraph Guide" 33 minutes fast of Madras time is actually 32 minutes and 20 seconds fast, so that 32 minutes would be a more correct allowance to make than 33. Moreover the officially announced allowance is in some cases greater and in others less than the actual true difference in time, thereby introducing a further source of error. Added to these it is not uncommon for small towns to use neither Madras nor their own local time, but the local time of the nearest large city. The Council of the Society is not aware whether this practice prevails in other provinces, but know that not a few places in Bengal habitually use Calcutta time and not that of Madras or of their own meridian.

6. This want of uniformity of time is a cause of great difficulty and confusion in all researches where it is necessary to compare a recorded time at one place with that at another, and may nullify or vitiate even the most carefully made observations. For this reason and apart from any considerations of general convenience the Council of the Society are desirous of seeing the universal adoption of a single standard time in India, and the abandonment of the use of local times.

7. The Council of the Asiatic Society is aware that there is already in existence a nominal standard of time for all India, in that of the Madras Observatory, and that this time is actually in use on all railways and, formally, by the Telegraph Department. They are also aware that many towns habitually use Madras or railway time in preference to their own local time, but at present there is no uniformity of practice in this matter, and they are further of opinion that the present chaotic method of time-keeping has largely been perpetuated by the printing in the official "Telegraph Guide" of the differences between local and Madras time. By the omission of this information they consider that one standard time at all places would soon follow. They are not however of opinion that the practice has been altogether productive of evil, and if the postponement of the adoption of a standard time should lead to the adoption of a more convenient standard than that of Madras, the delay will even have been advantageous.

8. Before deciding on the universal introduction of a standard time it would, in the opinion of the Council of the Asiatic Society, be advisable to consider whether the use of only one time for the whole of India is practicable. The local times at the extreme east and west extremities of the telegraph system, as it stands, amounts, to 2 hours and 10 minutes; when extended to the extreme limits of the Empire it will reach nearly 3 hours. In these circumstances it seems doubtful whether the adoption of one time throughout would not be accompanied by so great an inconvenience that it would not come into universal use. In this case the adoption of standard time could only be enforced if it were accompanied by the introduction of the hour-zone system, by which there would be two or three different times in use, each differing by exactly one entire hour, the minute and second being everywhere the same and the hour also in each separate hour-zone.

9. This system of hour-zones is consistent with the use of Madras or any other time as a standard, but concurrently with the consideration of the desirability of adopting it the standard to be used should be considered, and it is the opinion of the Council of the Asiatic Society that there is much to be said in favour of the adoption of the system in its entirety, of abandoning the use of Madras or any Indian time as the

standard, and adopting Greenwich time in its place. In this way civil time in India would be brought into direct relation with civil time in Europe, in the United States of America, and in the British Colonies in America, Africa and Australia; the difference in time would be always a number of whole hours, or half hours, instead of, as at present, a number of hours and minutes which varies from place to place.

10. So far as inland towns are concerned the Council of the Asiatic Society does not anticipate that there would be any difficulty in introducing the use of whatever standard time may be decided on. The cessation of the publication of the difference between local and standard time, and the use of standard time in all Government offices and on public clocks controlled by Government, would probably be sufficient, but the principal sea port towns are differently situated and the necessity for considering their special needs will probably be the controlling factor in the decision finally arrived at.

11. At Calcutta, Bombay and Madras there are at present astronomical observatories part of whose duties is to control a daily time signal, established primarily for the use of the shipmasters in the port, to enable them to determine the error of and to rate, their chronometers. Incidentally this time signal controls and determines the civil time in use in each of these towns and it seems improbable that a standard time, different to that given by the daily time signal, will ever come into general use in those ports. Any proposal to alter the time signals at other ports to Madras time would probably meet with strenuous opposition, and would be accompanied by no advantage to masters of ships lying in the port. A proposal to alter the time signals to an integral number of hours fast of Greenwich time would probably meet with much less opposition and would, in the opinion of the Council of the Society, be to the advantage of the shipmasters for whose benefit these time signals are primarily intended.

12. While unanimously of opinion that the general adoption of a standard time is desirable both on the grounds of public convenience and for the purposes of all scientific investigations involving a comparison of observed times at different places, the Council of the Society has no desire to express a decided opinion as to the standard to be adopted. While favouring Greenwich time for the reasons given in this letter, and because it appears likely to become the standard for the whole, as it already is for the larger part, of the civilised world, they recognise that such a change should only be introduced after careful inquiry and consideration of all the interests involved in the change. It is with a full trust in the enlightenment of the Government of India, in its willingness to undertake the necessary enquiries and its ability to adopt

the course of action which will be most conducive to the general convenience of the Empire at large and to the advancement of science, and of the art of exact time-keeping, that the Council of the Asiatic Society have instructed me to lay their views before His Excellency the Governor-General, in the hope that he will be pleased to regard them favourably and to take such steps as he may consider advisable to forward the introduction of the reform which they regard as desirable, if after full enquiry it should prove practicable.

The SECRETARY read the following reply to the above letter :—

FROM

THE PRIVATE SECRETARY TO  
HIS EXCELLENCY THE VICEROY.

*Dated Simla, the 31st May, 1899.*

SIR,

I have the honour to acknowledge the receipt of your letter of the 22nd instant regarding the introduction of a standard time throughout India, and to say I have laid it before His Excellency the Viceroy.

I have the honour to be,

SIR,

Your most obedient Servant,

F. W. LATIMER,

*For Private Secretary to the Viceroy.*

The SECRETARY also read extract of the following letter from Dr. Enrico H. Giglioli, of Florence, regarding the photograph of Cleopatra in the possession of the Asiatic Society of Bengal :—

“I have been able to ascertain that in the public and private picture galleries at Rome, no Cleopatra exists equal to the one you have in Calcutta and of which you sent me a photograph. There is indeed in the *Pinacotheca* at the Capital a Cleopatra by Guido Reni, but it is an unfinished one and not only different from yours, but also from those by Guido in the galleries of Florence and Genoa. The only gallery in Rome which was not searched, because it was closed at the time I was at Rome is the Sciarra gallery ; but I was told that it contains no Cleopatra. Thus yours is in all probability *an original*, certainly by Guido Reni or his School.

No Cleopatra by Guido is in the Barberini gallery at Rome, which was carefully searched.”

The PHILOLOGICAL SECRETARY read the following Budget for the Bibliotheca Indica for the year 1899.

## RECEIPTS.

Balance on 31st December, 1898	...	...	Rs. 12,000
Allowance during 1899	...	...	„ 9,000
			„ 21,000
			„ 21,000

## DISBURSEMENTS.

- Tattva-cintāmaṇi.  
 Vṛhad-dharma-Purāṇa.  
 Mārkaṇḍeya-Purāṇa.  
 Svayambhū-Purāṇa,  
 Nyāyavārttika.  
 Taittirīya Saṁhitā.  
 Çrauta Sūtra of Çāṅkhāyana.  
 Aitarēya Brāhmaṇa.  
 Sher-Phyin.  
 Translation of Akbarnāma.  
 English Translation of Muntakhab-ut-Tawārīkh, Vol. III.  
 Kālaviveka.  
 Nāyadhamma-kahā-sutta.  
 Āpastamba-Çrauta-Sūtra.  
 Padumāvati.  
 Translation of Riyāzu-s-Salāṭīn.  
 Parāçara Smṛti.  
 Bālabhāta.  
 Translation of Suçruta.  
 Vidhiviveka.  
 English Translation of Al-Muqaddasī.  
 Gadādhara-Paddhati.  
 Trikāṇḍa-maṇḍana.  
 Çatapatha-brāhmaṇa with the commentary of Sāyaṇācārya.  
 Gaṅgāvākyāvali.  
 Vivaraṇa.  
 Abhilaṣītārtha-cintāmaṇi.  
 Advaita-cintā-Kaustubha.  
 English translation of Çrāddhatattva.  
 Bhāṭṭadīpikā.

**Proposals sanctioned—**

English Translation of Prabandha-eintāmaṇi, by C. H. Tawney, Esq., C.I.E.

Upamitibhavakathāprapañcā, by Prof. Peter Peterson.

Īṣvarakaula's Kāçmīraçabdāmṛta, by G. A. Grierson, C.I.E., Ph.D.

Translation of Çlokavārtika in English, by Gaṅgānathjāh. Çataduṣaṇī.

Prākṛita Piṅgala, by Candramohan Ghose.

The songs of Vidyāpati, by Haraprasād Çāstri.

Caturvarga-eintāmaṇi should not be continued, unless suitable MSS. are available.

The editions of Tulsī Satsaī Aṇubhāşya, and Muntakhab-ut-Tawarikh, Vol. I, have been completed.

The following list of works sanctioned and approved by the Council, but not taken in hand, has been drawn up in order of urgency :—

- |                                  |  |
|----------------------------------|--|
| 1. Hirāṇyakēçi-sūtra (Çrauta).   | 9. Yājñavalkya-gītā (English Translation).       |
| 2. Baudhāyana-sūtra (Çrauta).    |  |
| 3. Vipāka-sūtra (Jaina).         | 10. English Translation of Caraka.               |
| 4. Tawārikh-i-Yamīni.            | 11. Translation of Sāmkhyapra-<br>vacana-bhāşya. |
| 5. Tawārikh-i-Wassāf.            | 12. Kalpalatā.                                   |
| 6. Tāju-l-Ma'āşir.               | 13. English Translation of Lalita-<br>vistara.   |
| 7. Naqā'idu-l-farazdaq wa Jarīr. |  |
| 8. Karaṇa-grantha.               |  |

Mr. F. Finn exhibited a living soft-shelled tortoise (*Euryda* sp.?), and read the following remarks by W. K. Dods, Esq.

I got the turtle, exhibited, on the evening of the 1st April when out after Eld's deer, on one of the grassy plains near the mouth of the Sittang River. Though dry and burnt up at the time of my visit, this ground is a swamp during at least seven months of the year, after which, when the water, even in the buffalo-wallows, begins to disappear, the turtles and water-snakes bury themselves in the mud, and lie off, till the first Monsoon rains soften the soil and release them for another season. This particular individual was under about two inches of soil, so dry and heated by the sun as to be most disagreeable to walk on even with the protection to one's feet afforded by a heavy pair of shooting boots. Originally the ground had been covered by a thick growth of grass, but that had all been burnt off about a month before by a jungle fire, exposing the cracked soil to the full rays of the sun, and the small round breathing hole to the sharp eyes of my Burman

guide. It was quite lively when dug out, and has never to my knowledge eaten anything since. It seems equally indifferent whether its residence is in a bag, a basket, an empty cartridge box or a pail of water. I saw the shells of several others lying about, but whether they had met their end by jungle fires or other causes I could not find out.

Mr. Finn also exhibited a head of the clucking Teal (*Nettion formosum*), from a specimen shot in India recently, and made remarks upon it.

The PHILOLOGICAL SECRETARY read the following Note on the date of an ancient Palm-leaf MS. from Nepal :—

At the March Meeting of this Society, Mahamahopadhyaya Haraprasād Shastri exhibited an old Palm-leaf MS. of the *Aṣṭāsāhasrika-prajñāpāramitā* which he had just acquired for the Society during his recent stay in Nepal. The MS., as pointed out by him, was written in Nālandā, the famous seat of Buddhistic learning, in the sixth year of Mahipāla, the son of Vighrahapāla. The date, according to him, is expressed moreover in the year 303 of an unknown era. As this statement, if correct, might be of considerable interest, I feel compelled to publish my reading of the Colophon of the MS., which is as follows :—

देयधर्मयं प्रवरमहायानयायिनः ताडिवाडिमहाविहारीय आवस्थितेन \*  
 शाक्याचार्यस्यविरसाधुगुप्तस्य यदत्र पुण्यन्तद्भवत्वाचार्योपाध्यायमातापितृपुरङ्ग-  
 मङ्गत्वा सकलसत्वरेश्वरनुत्तरज्ञानफलावाप्तय इति ॥ परमभट्टारक-महाराजा-  
 धिराज-परमेश्वर-परमसौगत-श्रीमद्विग्रहपालदेव-पादानुध्यात । परमभट्टारक-  
 महाराजाधिराज-परमेश्वर-परमसौगत-श्रीमन्महीपालदेव-प्रवर्द्धमाण-कल्याण-  
 विजय-रान्ये षष्ठसम्बत्सरे अभिलिख्यमाने यत्राङ्के सम्वत् ६ कार्तिककृष्णत्रयो-  
 दश्यान्तिथौ मङ्गलवारेण भट्टारिकानिष्पादितमिति ॥ श्रीनालन्दाविस्थितकल्याण  
 मित्रचिन्तामणिकस्य लिखित इति ॥

It is evident that the words read by Haraprasad Shastri as *abhilikhyamāne patrāṅke* and referred to the number of the page about to be written, actually are *abhilikhyamāne yatrāṅke*, and that they must be taken as synonymous with such phrases as : *yatrāṅpēpi*, *aṅkato'pi*, etc. There is one instance only known to me, where the same phrase occurs in a date, *viz.*, in No. 365 of Prof. Kielhorn's List of Inscriptions,

\* This should be either *Tāḍivāḍi-mahāvihāriya-ṣākya-cāriya*, or *Tāḍivāḍi-mahāvihār-āvasthita-ṣākya-cāriya*.

70 Dr. Waddell—*Identity of Upagupta with Moggaliputta Tisso.* [JUNE, published as 'Appendix to *Epigraphia Indica*, Vol. V. It is a Tipperah Plate of Harikāladeva Raṇavaṅkamalla, and the date is :—

रखवङ्कमल्ल-श्रीमत् (?) हरिकालदेवपादानां सप्तदशसम्बत्सरेऽभिलिख्यमाने  
यत्राङ्केनापि सम्बत् १७

The MS. accordingly contains one date only, *viz.*, the sixth year Mahipāla. It is impossible to give the exact European equivalent to this date, without allowing for a limit of about 100 years. There are two Mahipālas known to us from the genealogical lists of Pāla Kings, who both were sons and successors of a king by the name of Vighraha-pāla. Further, we have in an Inscription from Sarnath\* the date [*Vikrama*]-*Samvat* 1083 for a king of Gauḍa, Mahipāla, but it is impossible to say whether this was the first or second of the two synonymous kings in the Pāla Lists. However, there is no doubt that the MS. has been written in the eleventh century A.D.

The following papers were read :—

1. *Identity of Upagupta, the High-priest of Aṣoka with Moggaliputta Tisso.*—By L. A. WADDELL, LL.D.

In a former article on Upagupta as the High-priest of Aṣoka,† I suggested that this celebrated monk, who is frequently mentioned in the Sanskrit, Chinese and Tibetan accounts of Buddhism in India, was probably identical with Moggaliputta Tisso, the priest of Aṣoka according to the Ceylonese Pali tradition, which latter however knows not the name of Upagupta, just as Moggaliputta Tisso is unknown to the others.

Further examination confirms this view of their identity. Indeed, the fragmentary accounts of these two individuals, as preserved in the leading Sanskrit and Ceylon texts on Aṣoka, namely, the Sanskrit *Aṣokāvadāna* and the Pāli *Mahāvamsa* display such a close agreement in their descriptions and especially in respect to the detailed circumstances of the visit of these monks to Aṣoka, as to leave little doubt that they refer to one and the same person. This agreement is all the more remarkable as these two books are considered to be derived from entirely independent sources. The *Aṣokāvadāna* appears to have existed in India before 317–420 A.D. when a translation from it seems to have been made into Chinese.‡ The portion of the *Mahāvamsa*

\* Edited by Hultzsch in *Indian Antiquary*, Vol. XIV, for 1885, p. 139.

† *J. A. S. B.* Vol. LXVI, pt. I, 1897, pp. 76 *et seq.*

‡ Bunyin Nanjio's *Catalogue of Buddhist Tripitaka*, p. 300, No. 1344. But the version quoted in this article is from the *Divyāvadāna* as translated by Buruouf in his *Introduction a l'histoire du Bouddhisme Indien*.



in question is believed to date from about the middle of the 5th century A.D.\*

To exhibit this agreement I here arrange extracts from these two respective books in parallel columns:—

ΔÇOKĀVADĀNA.†

MAHĀVĀMSA.‡

*He is likened to Buddha.*

“The glorious Upagupta...the chief amongst the interpreters of the Law, and a veritable Buddha, without the external signs...he will fill the rôle of a Buddha,” p. 337.

“The illuminator of the Religion of the Jina (Buddha), the Thero, son of Moggali...who has heard his eloquence without considering it the eloquence of the supreme Buddha himself,” pp. 33 and 71.

*His origin.*

Upagupta was the son of a seller of perfume in Benares, p. 336.§

Moggaliputta Tisso was in his former existence seller of honey in Benares, p. 25.||

*His ordination.*

Upagupta was converted by Yaças or Yashka (a resident of Çouaka)¶ who was for a time the great Sthavira at the Kukkuṭārāma monastery at Pāṭaliputra, pp. 336, 337.

Moggaliputta Tisso was taught by a pupil of Sonaka (a pupil of ‘Dāsako’) who was the great Thero at the Kukkuṭārāma monastery of Pāṭaliputra, pp. 28 and 30.

*His precocity.*

“He attained *Arhatship* of an exceptionally high order within three years of entering the Buddhist order,\*\* becoming

“This superlatively-gifted person having attained that qualification, in a short time arrived at the sanctification of *Sotāpatti*...and

\* Turnour’s *Mahāvamsa*, p. xxx. Max Müller’s *Sacred Books of the East*, X, p. 13.

† The extracts are taken from the second edition of Burnouf’s *Indian Buddhism* already quoted.

‡ The extracts are from Turnour’s translation.

§ *Vide* my article, *J.A.S.B.*, p. 78.

¶ Mr. Turnour identifies this Tisso as Açoka’s young brother Devānāmpiyō Tisso apparently for the reason that the name is mentioned in juxtaposition with Açoka and his wife, but it follows the name of the other great monk of Pāṭaliputra ‘Nigrodho,’ and the text of the *Mahāvamsa* is here very involved and corrupt.

¶¶ Rockhill’s *Life of Buddha* from the Tibetan, p. 173.

\*\* *Vide* my art. above cited, p. 78.

“like the sun shining the light of knowledge over the ruined universe,” p. 339.

ultimately he was elevated to a Thero ..and became as celebrated as the sun and moon,” p. 32.

*His hermitage.*

He sojourned “in compassion for the world” (p. 338) “on the mountain Urumuṇḍa” near Mathurā, ‘the first of all spots favourable for mental calm,’” p. 337.

“He sojourned for seven years in solitude in pious meditation at the ‘Ahoganga’ mountain (beyond the Ganges) towards the source of the river,” p. 39.

*Epoch of his visit to Aṣoka.*

This event is placed after Aṣoka’s conversion, p. 339.

This event is placed after Aṣoka’s conversion, pp. 26, 34, 35.

*Circumstances under which invited.*

“The King Aṣoka proceeded to the Kukkuṭa monastery at (Pāṭaliputra) and there taking the place of honour, said with hands joined in respect: ‘Is there any other person &c., &c.?’ Then Yaças the Sthavira of the assembly replied thus: ‘Yes, O great King! there exists one...the son of Gupta...Upagupta,’” p. 336.

“The great king Dhammāsoko ...repairing to the chief (Buddhist) temple (of Pāṭaliputra)\*..enquired of the priesthood—‘Is there or is there not any priest of sufficient authority who alleviating my doubts can restore me the comforts of Religion?’ The priesthood replied to the sovereign: ‘O warrior king! the Thero Tisso, the son of Moggali, is such a person,” p. 40.

*Mode of invitation—Aṣoka alters this on advice of his ministers.*

“The king having been informed convoked a crowd of his ministers and said...‘I will myself go to see the Sthavira’... But the ministers replied, ‘Sir! it is (only) necessary to send a messenger...the sage...will certainly come himself,” p. 338.

“On that very day in order that the Thero might be brought on his invitation, he (Aṣoka) despatched four Theras each attended by one thousand priests, &c. ...” But the saint refuses to come and so again when double the number are sent, then “The king enquired ‘what can the cause be that the Thero does not come.’” The priests informed him, thus:—‘Illustrious monarch! on sending him this

\* The Mahāvamsa, p. 39, says this temple was the Asokārāma.

*Açoka arranges a Boat-service to bring the Monk.*

“Açoka thinking that the Sthavira Upagupta will come by water, established boats all the way between Mathurā and Pāṭaliputra,” p. 338.

*Acceptance of Invitation.*

“Then Upagupta to show his benevolence to king Açoka embarking...arrived at the town of Pāṭaliputra,” p. 338.

*Açoka advances to meet him.*

“The king advanced to meet the Sthavira Upagupta,” p. 339.

*Açoka himself carries the Sage ashore.*

“(Açoka) descending from his elephant, he walked across the river-bank and fixing one foot on the bank, he placed the other on board the boat and taking in his arms the Sthavira Upagupta he transported him to the ground,” p. 339.

*Conducts him to the Palace.*

“The king having then introduced in great pomp the Sthavira Upagupta into his royal abode,” p. 340.

*Massages (?) his limbs and seats him.*

“He (Açoka) took him between his arms and seated him on the seat which he had fixed. The

message: ‘Lord! vouchsafe to extend thy aid to restore me to the faith—the Thero will come,’” p. 40.

“He (Açoka) thus instructed: ‘The Thero on account of his great age will not be disposed to mount a conveyance, do ye therefore transport the Thero in a vessel by the river,’” p. 40.

“He (Moggaliputto Tisso) in the very act of hearing the message rose. They conveyed the Thero in a vessel,” p. 40.

“The king went out to meet him,” p. 40.

“The monarch (proceeding) till the water reached his knees, with the profoundest respect offered the support of his right shoulder to the disembarking Thero. The benevolent Thero.....accepting the proffered right arm of the sovereign, disembarked from the vessel,” p. 41.

“The king conducting the Thero to the pleasure-garden Rativaddhana,” p. 41.

“Bathing his feet and anointing them (Açoka) caused him to be seated,” p. 41.

body of the Sthavira Upagupta was refined and soft, soft as cotton wool. The king perceiving this said.—‘ Noble creature, thy limbs are soft as cotton, soft as the silk of Benares, but I unfortunate being, my limbs are rude and my body rough to the touch!’” p. 340.

*Açoka asks for a miracle.*

At this meeting none are asked, as in the Mahāvamsa, but afterwards, pp. 341-345.

“The sovereign with the view of trying the supernatural power of the Thero said to him ‘ Lord, I am desirous of witnessing a miracle.’... The Thero, manifested this miracle to him who was there seated,” p. 41.

*They visit the Bodhi-tree at Gayā together.*

“Then the King (Açoka) equipped with an army of the four bodies of troops took perfumes, flowers and garlands and set out in company with the Sthavira Upagupta ..... the Sthavira Upagupta having led the king close to the Bodhi-tree, extending his hand said to him, ‘ Here, O great king, the Bodhi-sattva...attained the state of the completely perfect Buddha,’” p. 345.

“The king (Açoka) inquired (of)...the chief priest, the son of Moggali.... The lord of the land hearing this reply ordered the road to the Bodhi-tree to be swept and perfectly decorated and attended by the four constituent hosts of his military array, and by the great body of the priesthood..... repaired to the great Bodhi-tree which was decorated with every variety of ornament, laden with flowers of every hue. A body of a thousand priests with the chief Thero (son of Moggali) at their head and a body of thousand monarchs with this emperor (Açoka) at their head having enclosed the sovereign himself as well as the great Bo-tree, with uplifted clasped hands gazed on the great Bo-tree,” p. 112.

This extensive agreement in so many details, in these two accounts which are drawn from widely different sources, can scarcely be accidental. On the contrary, they seem to establish the identity of the two persons in question almost beyond doubt.

2. *A new Copper-plate Inscription of Lakṣmaṇa-sena.*—By AKSHAY KUMAR MAITRA, B.L.

3. *A collection of Proverbs from Ladakh.*—By the REVD. H. FRANKE, Meravian Missionary, Leh. Communicated by the Philological Secretary.

The papers will be published in the Journal, Part I.

4. *Note on Hume's Bush-Quail* (*Microperdix manipurensis*).—By CAPTAIN H. S. WOOD, I.M.S. Communicated by the Natural History Secretary.

The paper will be published in the Journal, Part II.

5. *Notes on tribes in Manipur.*—By T. C. HODSON. Communicated by the Anthropological Secretary.

6. *Notes on the Rangari Caste in Berar.*—By CAPTAIN W. HAIG, I.S.C.

7. *On Shāh Abdur Rahman Ghazi.*—By CAPTAIN W. HAIG, I.S.C.

The papers will be published in the Journal, Part III.





## PROCEEDINGS

OF THE

# ASIATIC SOCIETY OF BENGAL,

FOR JULY, 1899.

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The Monthly General Meeting of the Society was held on Wednesday, the 5th July, 1899, at 9-15 P.M.

R. D. OLDHAM, ESQ., F.G.S., in the Chair.

The following members were present:—

Major A. Alcock, I.M.S., Mr. J. J. Cotton, Mr. W. K. Dods, Mr. F. Finn, The Revd. W. K. Firminger, Major C. R. M. Green, I.M.S., Mr. T. H. Holland, The Revd. H. B. Hyde, Kumar Rameshwar Maliah, Mr. L. de Nicéville, Mr. J. D. Nimmo, Mahamahopadhaya Haraprasad Shastri, Mr. H. A. Stark, Dr. M. A. Stein, Major L. A. Waddell, I.M.S.

Visitor:—Mr. G. W. L. Caine.

The minutes of the last meeting were read and confirmed.

Twenty-one presentations were announced.

Mr. A. Goodeve Chukerbatty has expressed a wish to withdraw from the Society.

Mr. F. Finn exhibited two living specimens of a new Indian species of Weaver-bird, and made the following remarks upon them:—

The birds I am exhibiting to-night were obtained about the end of June from Mr. W. Rutledge, of Entally, who states that he received them, together with a specimen of the Blue Rock Thrush (*Petrophila cyanus*) recently, from Naini Tal. The man from whom he procured the birds stated that he could get others, so that the species is probably not uncommon. I have no hesitation in describing it as new, as it differs markedly from any of our Indian Weavers, and does not agree either with the description of any of the allied African forms to which I have access. I have much pleasure in naming this handsome novelty after Mr. Rutledge, whose services to Indian Natural History, and to

the Museum and Zoological Gardens in particular, are so well known; and I characterize it as follows:—

*Plocus rattedgii*, sp. nov.

Very similar to the male of *Plocus baya* in breeding-plumage, but easily distinguishable by its larger size, and entirely yellow under surface.

Both specimens have the same coloration and are of about the same size, but as one has a stouter head and is brighter than the other, and constantly sings, it is possible that they are male and female and that the sexes will prove to be similar in this species. A full description, with a coloured plate, will hereafter appear in the Journal.

Major A. Alcock, I.M.S., exhibited a new species of Fish from the Deep Sea, and made the following remarks upon it:—

The fish exhibited to-night belongs to the subfamily *Triacanthinæ* of the Plectognathous family *Sclerodermi*.

It has a short, moderately elevated, compressed body, covered with very small rough scales. The anterior bones of the head are produced to form a long, rather slender, perfectly tubular snout, some little distance from the end of which is the small transverse mouth-cleft. In each jaw is a distant series of very small conical teeth. There are two large spines in the first dorsal fin, and the ventral fins have the form of two long sharp spines that can be abducted to a right angle with the body and there fixed like a bayonet.

In form this fish has a considerable superficial resemblance to *Centriscus*, but the snout is even longer and more perfectly tubular than that of *Centriscus*.

Though an undoubted Plectognath, it is quite unlike any other member of that family, and therefore stands as the type of a new genus, *Halimochirurgus*.

In allusion to its *Centriscus*-like shape, I have called it *Halimochirurgus centriscoïdes*.

Only this one specimen is known: it was lately dredged by the "Investigator" in the Gulf of Manár, at a depth of 143 fathoms. Its large eye and the delicacy of its tissues are almost sufficient evidence that it lived at the depth at which it was dredged.

The stomach is empty, and therefore gives us no clue to the habits of the animal; but the curious tubular snout with the little valve-like mouth near the end of it look as if meant for suction; and if I might hazard a guess I should say that this fish probably lived by probing for worms hidden in the mud at the bottom of the sea.



The following papers were read :—

1. *The first marriage of Warren Hastings.*—By THE REV. H. B. HYDE, M.A.

In the old Residency Burying-ground at Cossimbazar is an epitaph, to the memory of Mrs. Mary Hastings and her infant daughter Elizabeth. The date of the former's decease is given as July 11th, 1759, but her age was either not accurately known to her husband Mr. Warren Hastings who, according to the epitaph, erected the monument, or else was half obliterated from the stone when the Bengal Government restored the whole some years ago: for it now reads merely "2 ."

Anyhow she was under thirty. Mr. Hastings was at the time Company's agent at the court of the Nawab of Bengal at Moorshedabad and in the 9th year of his Indian Service.

All Hastings' biographers, from Gleig to Sir Alfred Lyall and the writer in the Dictionary of National Biography, state with more or less confidence that this Mary was the widow of a Captain Dugald Campbell, an officer who had been accidentally shot a few days before the recovery, on the 2nd of January, 1757, of Calcutta from the Nawab of Bengal. Thus Sir Alfred Lyall having related how that Hastings on the outbreak of hostilities in 1756 escaped from Moorshedabad to Chunar and thence made his way down the Ganges and joined the refugees from Fort William at Fulta, says:—"Here he met the widow" (wife) "of a Captain Campbell whom he afterwards married, and in 1758 he wrote to a friend that he was very happy and found every good quality in his wife. But the poor lady died in 1759 after bearing him two children, neither of whom survived childhood; and of this brief episode in his eventful life only the bare facts remain."

Accident has lately revealed that this identification of the first Mrs. Hastings is a mistaken one. On turning over, in April last, a miscellaneous bundle of old Calcutta Mayor's Court records (since properly distributed), I found in my hands a paper (endorsed "No. 217, Ecclesiastical Suits") bearing the fine, bold signature of Warren Hastings. It was a petition which had been filed by him in the Court on the 9th of June, 1758, respecting the administration of the estate of his wife's late husband. The document is entitled "Petition of Warren Hastings of Cossimbazaar, Gentleman, in behalf of his wife Mary Hastings, relict to John Buchanan late of Calcutta," and declares that "Captain John Buchanan, late of Calcutta, Gentleman," had died intestate and that the petitioner requested letters of administration to the deceased's estate, because he had married his widow Mary. This petition was accompanied by two other documents, the

earlier of which is an inventory with an account of the proceeds of the property down to 30th March, 1759. This is signed by Mr. J. Z. Holwell, as attorney of Mr. Hastings; the latter is a similar and final account, brought down to January 31st, 1763, and is signed by Mr. Hastings himself.

From these papers, as illustrated by the few volumes of the Calcutta Consultations which survived the siege, the parish Registers and Holwell's tracts, the following notes have been compiled.

In 1754, on the 12th of May, Colonel Caroline Frederick Scott, Engineer-General of the Company's Indian Establishments and Commandant of Fort William died and on the 3rd of June, Captain Minchin was appointed to succeed him. The Company the latter had commanded was given to Lieutenant John Buchanan, to whom the Court had promised a Captain's commission on the next vacancy. At the time of the siege Buchanan is spoken of as being the only senior officer at Calcutta who had seen active service, and we may therefore presume that this commission was the reward of valour in some recent Indian campaign. He was then a married man and the previous month his daughter, Catherine Caroline, by his wife Mary, had been baptized in Calcutta. It is not unlikely that Mary Buchanan was a daughter of Colonel Scott.

At the northernmost point of Calcutta was Perrin's Garden, reserved of old as a promenade for the Company's covenanted servants. By 1752 it had fallen wholly out of fashion, and the buildings about it were becoming ruinous, and it was therefore sold by out-criy. Mr. J. Z. Holwell bought it for 2,500 rupees. From Holwell it passed to Colonel Scott, the Commandant, who had secured the contract for supplying the Garrison and Train with gunpowder. On Perrin's the Colonel erected a Powder Mill. At his decease the premises were purchased by his Administrator, Captain Buchanan, who hoped the Council would transfer to him the gunpowder contract. However there were other tenderers, principally Minchin, Scott's successor, and a Captain Jones, and there was much delay in deciding the point; thus the Perrin's Factory lay idle for many months. Then Buchanan began to experiment in gunpowder-making with the result that he blew up his mill, killing happily only a bullock. Nothing discouraged by this, he, early in 1756, again urged the Council to bestow upon him the lapsed contract. But whether he obtained it or not, and thus whether the powder burnt in the battery which was set up at Perrin's Point on the approach of the Nawab's army was of his compounding or not, does not appear.

Holwell's Tracts contain many allusions to Buchanan, whose energy and courage during the siege were admirable. He held by the Fort

when the Commandant and the President deserted it, and he perished in the Black Hole. His wife must have been among the ladies who were sent on board the ships when the assault upon the Fort became imminent, thus she would have escaped to Futla.

Here it was most likely that Mr. Hastings met her, and it is not impossible that he actually married her in that dismal refuge and that Admiral Watson's Chaplain, Richard Cobbe, was the officiating minister. This would not be the only marriage assignable to Futla during the latter months of 1756. No records, however, of English marriages in Bengal can be found between the 20th of February, 1756, and the beginning of 1758.

Buchanan's Estate was computed to have lost 16,000 rupees, or rather more, in the capture of Calcutta. This sum was afterwards recovered from the Nawab's restitution money by Hastings on account of his wife, Buchanan's widow. In April, 1759, Hastings re-sold Perrin's Garden with the buildings upon it, to the Company, for 2,160 rupees.

NOTE.—The Captain Buchanan who was Mrs. Mary Hastings' first husband is not to be confused with a Captain Andrew Buchanan, of the detachment sent from Bombay for the recovery of Fort William, who died on the 5th of June, 1757.

2. *List of the Black Hole Victims, June 20th–21st, 1756.*—By THE REV. H. B. HYDE, M.A.

## LIST OF THE BLACK HOLE VICTIMS.

JUNE 20TH–21ST, 1756.

Being the lists given by Holwell in the EPITAPH shown in his plate of the Black-Hole Monument and in an Appendix to his "GENUINE NARRATIVE" revised and with the Christian Names added.

Note.—Ep.—Epitaph.

Apx.—Appendix.

E.S.—Calcutta Mayor's Court, Ecclesiastical Suits. The numbers following these initials are those endorsed on the petitions, &c., relative to the administration of the deceaseds' estates in 1757 & 58 [in cases where the documents could not be found, April, 1899, the references have been supplied from the official Index].

### Of Council.

1. EDWARD EYRE, ESQ. Member of Council, 21st December, 1752;  
Military Store-keeper, 28th Aug., 1755.
2. WILLIAM BAILLIE, ESQ. Member of Council, 24th November, 1755,  
E. S. 20.

**Chaplain.**

3. GERVAS BELLAMY ... Senior Chaplain. Arrived 22nd August, 1726. "Jervas" in Ep. & Apx. E. S. 17.

**Civil Servants.**

4. JOHN JENKS ... E. S. 95. "Of Cossimbazar" in will.
5. ROGER REVELEY ... "Reevelly" in Ep. "Revely" in Apx. E. S. 148. (& *vide* 95).
6. JOHN LAW ... E. S. 114.
7. THOMAS COALES ... Junior Merchant; Militia Ensign, November 20th, 1752; Accountant-general of the Mayor's Court, January 4th, 1754. Sheriff, 1755, "Coates" in Ep.
8. JAMES VALICOURT ... Junior Merchant; Sheriff, 1752; Alderman 6th December, 1753 and in 1755. "Nalicourt" in Ep. E. S. 182.
9. JOHN JEBB ... Writer. "Jeb" in Apx. E. S. 98 "Merchant" in petition.
10. RICHARD TORIANO ... Writer. Arrived 4th August, 1755. "Toriano" in Ep. E. S. 176.
11. EDWARD PAGE ... Writer. Arrived 10th June, 1754. E. S. 139.
12. STEPHEN PAGE ... Writer. Arrived 5th September, 1754. E. S. 142.
13. WILLIAM GRUBB ... Writer. Arrived 7th October, 1754. "Grub" in Ep. & Apx. E. S. 81.
14. JOHN STREET ... Writer. E. S. 168.
15. AYLNER HAROD ... Writer. E. S. 267.
16. PATRICK JOHNSTONE ... Writer. Arrived 17th October, 1754.
17. GEORGE BALLARD ... Writer. Arrived 4th August, 1755. E. S. 214.
18. NATHAN DRAKE ... Writer. E. S. 58.
19. JOHN CARSE ... Writer. E. S. 40.
20. WILLIAM KNAPTON ... Writer. Arrived 4th August, 1755. E. S. 108.
21. FRANCIS GOSLING ... Writer. Arrived 5th September, 1754. "Gostlin" in E. S. 83.
22. ROBERT BYNG ... Writer. Arrived 20th August, 1754. "Bing" in Apx. Name omitted in Ep.
23. JOHN DODD ... Writer. Arrived 4th August, 1755. "Dod" in Ep. & Apx. E. S. 57 "Merchant" in petition.
24. STAIR DALRYMPLE ... Writer. E. S. 52.

**Military Captains.**

25. DAVID CLAYTON. ... E. S. 36.  
 26. JOHN BUCHANAN ... Capt. 3rd June, 1754. Mr. Warren Hastings married his widow Mary, E. S. 217.  
 27. LAWRENCE WITHERINGTON ... Capt., 2nd November, 1755, of Artillery, ... 27th November, E. S. 191.

**Lieutenants.**

28. RICHARD BISHOP ... E. S. 15.  
 29. FRANCIS HAYS ... Lieut. of Artillery, 6th January, 1755. "Hayes" in minute of appointment. E. S. 270.  
 30. THOMAS BLAGG ... Lieut., 5th December, 1753.  
 31. COLLIN SIMPSON ... Lieut., 29th September, 1755, E. S. 169.  
 32. JOHN BELLAMY ... Lieut., 1753 (?) Son of the Senior Chaplain, E. S. 16.

**Ensigns.**

33. JOHN FRANCIS PACHARD ... Ensign 10th January, 1733. "Paccard" in Ep. and Apx. E. S. 146.  
 34. WILLIAM SCOTT ... Appointed Quartermaster 3rd June, 1754, E. S. 412 (?)  
 35. HENRY HASTINGS ... Ensign 29th Sept. 1755, E. S. 92 (?)  
 36. CHARLES WEDDERBURN ... E. S. 339.  
 37. WILLIAM DUMBLETON ... Ensign of Militia; Notary-Public and Registrar of the Mayor's Court, E. S. 53.

**Sergeants of Militia.**

38. BERNARD ABRAHAM ... Sergeant-major. Name omitted in Ep. E. S. 5.  
 39. WILLIAM CARTWRIGHT ... Quartermaster Sergeant. Name omitted in Ep. E. S. 37.  
 40. JACOB BLEAU ... Name omitted in Ep. "Blew" in E. S. 21.

**Sea-Captains.**

41. HENRY (?) HUNT ... Cf. Court Minutes, Vol. 65, p. 548.  
 42. MICHAEL OSBORNE ... "Osburn" in Ep. "Osburne" in Apx. E. S. 299. "Sailmaker" in petition.  
 43. THOMAS PURNELL ... "Purnel" in Ep. Survived the night, but died next day.

**Messieurs.**

44. PETER CAREY ... "Cary" in E. S. 38.

45. THOMAS LEECH ... Company's Smith and Parish Clerk, E. S. 115.
46. FRANCIS STEVENSON ... "Stephenson" in Apx., E. S. 165.
47. JAMES GUY ... E. S. 82.
48. JAMES PORTER ... E. S. 138.
49. WILLIAM PARKER ... E. S. 144.
50. .... CAULKER ...
51. .... BENDALL ... "Bendol" in Ep.
52. .... ATKINSON ...

..... "Who, with sundry other Inhabitants, Military and Militia to the Number of 123 Persons, were by the Tyrannic Violence of Surajud Dowla, Suba of Bengal, suffocated in the Black Hole Prison of Fort William in the Night of the 20th Day of June, 1756, and promiscuously thrown the succeeding Morning into the Ditch of the Ravelin of this Place.

"This Monument is Erected By their Surviving Fellow Sufferer "J. Z. HOLWELL."—*Epitaph.*

3. *Memoir on Maps illustrating the Ancient Geography of Kaśmīr.*  
—By DR. M. A. STEIN.

(Abstract.)

Dr. M. A. Stein presented his maps illustrating the Ancient Geography of Kaśmīr, together with printed copies of his Memoir on these maps. The Memoir will be published as an extra-number of Part I of the Society's *Journal* for 1899. Owing to its extent (223 pages) Dr. Stein restricted himself to reading extracts from the several chapters of this Memoir.

In these extracts he described the methods according to which the maps had been prepared at the Survey of India Offices. He then indicated the character and critical value of the materials for the study of the ancient topography of Kaśmīr which are available in foreign records (Chinese itineraries; Albērūnī) and still more abundantly in Kalhaṇa's *Rājatarangīnī*; the later Sanskrit Chronicles of Kaśmīr; the Māhātmyas of Kaśmīrian Tirthas, and other indigenous texts. The accuracy and richness of the *data* furnished by Kalhaṇa's Chronicle was specially characterized. Dr. Stein in conclusion illustrated the results he had derived from the study of these historical materials and his topographical researches in Kaśmīr, by an account of the ancient localities identified along the Pir Pantāl route and of the local traditions regarding them.

Dr. Stein specially recorded his gratitude to the Asiatic Society whose liberal help had enabled him to bring out maps which besides

erving the purpose of the present Memoir, will be particularly useful as illustrating his commentated translation of Kalhaṇa's Kaśmīr Chronicle, now in course of publication by Messrs. Constable & Co., London.

4. *On Svalpāksarā Prajñāpāramitā.*—By MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, M.A.

The papers will be published in the *Journal*, Part I.

5. *Note on the Mica-bearing Pegmatites of Peninsular India.*—By THOMAS H. HOLLAND, *Geological Survey of India.*

The term *pegmatite*, first suggested in 1822 by the famous French mineralogist Haüy for the regular intergrowths of quartz and felspar now known as graphic granite, was subsequently extended by Delesse to include all very coarse-grained granites—the “giant” granites (*Riesengranit*) of the Germans. Through the teaching of Naumann this use of the word pegmatite has come into general use. Recently, however, it has been employed by Brögger and the late G. H. Williams in a more general sense for the coarse-grained equivalents of the other plutonic groups, syenite, diorite and gabbro, and a distinction is made between granite-pegmatite, diorite-pegmatite and gabbro-pegmatite.

The particular form of pegmatite which is so remarkably developed in peninsular India is the acid variety, or *granite-pegmatite*—the form which differs from ordinary granite merely in the gigantic size of its constituent crystals. In general, therefore, these pegmatites are composed of quartz, felspar and mica, like common granite, but on account of the large size of their crystals, pegmatites have yielded fine specimens of the rarer minerals which are not known to occur in ordinary granites, for the reason, probably, that in the latter the crystals are too small for individual recognition and isolation. The following is a list of the minerals which have been detected so far in Indian pegmatites:—

Albite.	Ilmenite.
Allanite.	Kyanite.
Amazon stone.	Lepidolite.
Apatite.	Leucopyrite.
Automolite.	Magnetite.
Beryl.	Moonstone.
Biotite.	Muscovite.
Cassiterite.	Orthoclase.
Chrysoberyl.	Quartz, pink and white.
Columbite.	Tourmaline, red, blue, green and black.
Corundum.	Torbernite.
Epidote.	Triplite.
Fluor spar.	Uranium ochre.
Garnet.	

The large size of the crystals facilitating their extraction makes some of these minerals, like the phosphates and felspar, worth attention from an economic point of view, whilst the most valuable constituent of all, mica, is of value purely because of the large size of the sheets it forms. Crystals or "books" of muscovite-mica have been obtained in Nellore District, measuring 10 feet across the basal planes, but usually, of course, they are much smaller, all gradations of size being obtained from those of marketable value down to scales of microscopic dimensions such as occur in the common massive granites. Being the most delicate mineral in the rock the mica is the first to show the effects of crushing earth-movements, and large quantities of valuable mineral have by these means been destroyed, but it is on account of the remarkable stability of the Indian peninsula, the geologically long and perfect quiescence it has enjoyed, that India is able to boast of the finest mica deposits of the world.

In India, as in the mica-mining areas of America, the pegmatites are found associated with mica-schists, quartzites and other schistose rocks of the so-called upper division of the Archæan group. Into these schists the pegmatites have been intruded, generally along, but sometimes across, the folia, in the form of thin sheets, lenticular bodies or large thick bosses. The common disposition of the mica-bearing pegmatites in sheets seems to have been entirely overlooked by the miners in India, and ignorance of this fact is the principal cause of the exceedingly wasteful and primitive system of mining now being practised under European as well as Native management.

In the districts of Gya, Hazaribagh and Monghyr the so-called mines are narrow, irregular holes, following the pegmatite sometimes to depths well over 200 feet. The whole of the materials—mica, rubbish and water—are brought by a string of coolies up to the mouth of the hole, which is often near the summit of a hill, being the point where, on account of better exposure, the pegmatite outcrop was originally discovered. On account of the accumulation of water, all mining operations are suspended during the monsoon season, and at the close of the rains the process of "forking" a mine occupies several days and sometimes weeks. In the same way, an hour every morning is spent in baling out the water accumulated overnight. With the one exception now being inaugurated at Bendi, there is not a single vertical shaft in the whole mica-mining area of Bengal, not a single drive or cross-cut to show that the miners have appreciated the actual disposition of the pegmatite as normal intrusive sheets, and, notwithstanding the favourably-shaped natural contours of the ground, not a single adit for the removal of water. That mica-mining has yielded



large profits under such remarkable circumstances affords strong presumptive evidence of the value of the deposits and of the success which should be expected to follow a more scientific working of the many fine pegmatite sheets hitherto untouched.

There is probably no other group of rocks whose origin has been the subject of more varied discussion than the pegmatites. De Saussure received the support of Credner, Klockmann, Dana, Huntington, Kerr and Sterry Hunt, in likening them to metalliferous veins as the result of the successive deposition of mineral matter from solution in fissures, but recent researches support the earlier view of Charpentier (1823) who regarded the pegmatites as injections of granitic material which, originating in the still fluid granite, deep down, was pressed into the cracks of the already solidified granite and rocks above — “afterbirths,” as it were, of the same granitic formation in the district in which they occur.

Even before Charpentier's time, however, similar views were published by the old Cornish Geologists, Carne, Davy and others, who distinguished between what they called “contemporaneous veins” which are related genetically to the granite which they accompany and often traverse, and the “true veins” filled with valuable ores and formed at a distinctly subsequent period by the chemical infilling of fissures.

It is now generally conceded that pegmatites have resulted from the consolidation of injected fluid magmas, often directly traceable to some large granitic mass. This view that they are merely contemporaneous injections of the residual granite magma has been advocated by De la Beche, Bronn, Fournet, Durocher, Angelot, Naumann, Lehmann, Brögger, Reyer, Williams, Crosby and Fuller.

Recently evidence has accumulated to show that these residual portions of the granitic magmas, instead of being in a state of simple igneous fusion, contain much larger proportions of water than the average magma, and are consequently fluid at a very much lower temperature. Most, perhaps all, igneous magmas contain water, and, as in the process of crystallization anhydrous minerals are separated, the water becomes concentrated in the residuary mother-liquor which can thus remain fluid at a much lower temperature. The injection of this aquo-igneous melt into the neighbouring rocks, or into fissures in the granite just solidified from the same magma, gives rise to the pegmatite veins. With this view it is easy to explain the coarse grain which is so characteristic of even the thinnest veins of pegmatite. The size of a crystal is directly dependent on the freedom of molecular translation within the molten magma (or solution) multiplied by the time during which molecular segregation is permitted. In a magma which becomes viscous

on cooling, and in which the consolidation is rapidly accomplished, the crystals formed are necessarily small, as they always are for instance at the selvages of basic dykes, the converse being the case when the magma retains its fluidity for a long period. With what Reyer calls a *hydatorygenetic* (aquo-igneous) magma the latter condition is possible, for there is then a small difference between the temperature of the magma and of the rock into which it is injected, and consequently a very slow dissipation of heat. The reduction of temperature is still more retarded on account of the great specific heat of the water contained in an aquo-igneous melt; for to reduce water by one degree in temperature involves the equivalent rise of some three times the amount of average rock. The water, therefore, which becomes concentrated in the magmas that form our pegmatites explains the high degree of fluidity and consequent injection to great distances of very thin films, as well as the remarkably well crystallized condition in which such thin veins of pegmatite are invariably found.

6. *Riddles current in Behar*.—By SARAT CHANDRA MITRA, M.A., B.L. *Communicated by the Anthropological Secretary.*

7. *Heroic Godlings of Malabar*.—By S. APPADORAI IYER. *Communicated by the Anthropological Secretary.*

The papers will be published in the *Journal*, Part III.

PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR AUGUST, 1899.

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The Monthly General Meeting of the Society was held on Wednesday, the 2nd August, 1899, at 9-15 P.M.

ALEX. PEDLER, ESQ., F.R.S., Vice-President, in the chair.

The following members were present :—

Major A. Alcock, I.M.S., Mr. J. Bathgate, Mr. W. K. Dods, Mr. F. Finn, Mr. S. C. Hill, Mr. T. H. Holland, Mr. L. de Nicéville, Mr. J. D. Nimmo, Rai Ram Brahma Sanyal Bahadur, Dr. M. A. Stein, Mr. E. Thornton, Pundit Mahendra Nath Vidyanidhi.

Visitors :—Dr. W. Forsyth, Dr. Frederick Pearse, Mr. Arden Wood.

The minutes of the last meeting were read and confirmed.

Fifty-eight presentations were announced.

Mr. C. W. Peake and Mr. Roomall Gaenka were balloted for and elected Ordinary Members.

The Council recommended the Revd. Father E. Francotte, S.J., proposed by Mr. T. H. Holland, and seconded by Mr. C. L. Griesbach, for election as an Associate Member at the next meeting.

The Revd. J. Watt expressed a wish to withdraw from the Society.

The proposed alterations in the Society's Rules, of which intimation has already been given by circular to all members were brought up for final disposal.

The votes of the Mofussil members were laid on the table and the Chairman requested any Resident members who had not expressed

their opinion to take the present opportunity of filling in voting papers. Nine such papers were filled in and, with the 42 votes returned by Mofussil members, were scrutinized, the Chairman appointing Messrs. W. K. Dods and J. D. Nimmo to be scrutineers.

The scrutineers reported as follows :—

In favor of all the proposed alterations.

Mofussil Members 42.

Resident „ 9.

Partly in favor and partly against.

Mofussil Members 2.

The following are the alterations proposed :—

Rule 4. “The administration, direction and management of the affairs of the Society shall be entrusted to a Council composed of the Officers of the Society—namely a President, three Vice-Presidents *and one or more Secretaries including the Treasurer*—with as many other Ordinary Members as shall with these officers make up a minimum total of fifteen or a maximum of twenty.

Not more than one of the offices of President, Vice-President, or Secretary, shall be held by the same individual ; *but the Secretary if there be one, or one of the Secretaries, if there be more than one, shall ex-officio act as Treasurer.*”

PROPOSED ALTERATION IN RULE 4. For *and one or more Secretaries*, etc., read “a General Secretary, a Treasurer, and such additional Secretaries as the Council may from time to time nominate in accordance with Rule 51.”

The reason for this change is that according to Rule 50*h* the Secretaries are *ex-officio* members of all Committees appointed by the Council. When there are six Secretaries, as at present, this is manifestly inconvenient. The office of treasurer is sufficiently important to justify his being specially elected as such by the Society.

As a corollary of this change the words *but the Secretary*, etc., should be omitted.

Consequent on this change the following verbal changes will be necessary. For ‘Secretary’ in Rules 8, 12, 33, 34; and for ‘one of the Secretaries’ in Rules 55(*c*), 55(*j*), 57(*a*), 60(*h*), 64, substitute ‘General Secretary,’ and in Rule 46 after the word ‘Secretary’ add “Treasurer.”

Rule 14. Ordinary Members shall be entitled to the following rights and privileges :—

(*c*) to introduce visitors at the Ordinary General Meetings.

PROPOSED ADDITION TO RULE 14(c) "and to the grounds and public rooms of the Society during the hours when they are open to members."

Rule 37. When any Ordinary Member shall have omitted to pay the subscriptions of *six* successive quarters, the Council shall cause a registered letter to be sent to him, directed to his last known address, informing him of the amount of the sums due by him and that unless they are paid within six months from the receipt of such letters, his name will be struck off the list of Members as provided in the next rule.

PROPOSED ALTERATION IN RULE 37. For *six* successive quarters read "eight successive quarters."

*Reason*: Members are not uncommonly out of India for two years on furlough.

Rule 43. The election of Officers and other Members of Council shall take place at the Annual General Meeting of the Society, *in the following manner.*

PROPOSED ALTERATION, omit the words in italics as they are redundant.

Rule 44. The Council shall prepare a list of the names of those persons whom it recommends to be elected as President, Vice-Presidents, *Secretaries*, and other Members of the Council for the ensuing year; and before the first of January, such lists shall be printed, and a copy sent to each of the Resident Members of the Society; and at the Annual Meeting, *similar lists, with blank forms for balloting, shall be supplied to the Members present. The election shall be by ballot. The President shall be first elected, then the Vice-Presidents, then the Secretaries, then the other Members of the Council.*

PROPOSED ALTERATION IN RULE 44: For *Secretaries* read "General Secretary, Treasurer, Additional Secretaries." And for the words *similar lists, etc.* Substitute "voting lists bearing the same list of names but with a blank column for such alterations as any member may wish to make, shall be supplied to the members present.

"The manner of election shall be as follows:—

"(a) Two scrutineers shall be appointed by the Chairman with the approbation of the majority of the members present.

"(b) Each member present shall deliver his list unsigned, but folded and with such alterations as he may wish to make, into one box, and a form bearing a certificate that he has recorded his vote into another.

"(c) The scrutineers, after counting the voting lists and certificates,

shall, if they correspond in number, proceed to examine the voting lists and report to the President the names of those having a majority of votes for composing the Officers and Council of the Society, and these names shall then be announced from the chair.

“(d) In the case of the number of certificates being different from that of the voting papers, the election shall be null and void and a fresh election shall immediately be held.

“(e) If any list contain more than the proper number of names, or include the name of a candidate who is not eligible, it shall be void for uncertainty, and shall not be regarded by the scrutineers.

“(f) If there be an equal number of votes for any two or more candidates, the scrutineers shall announce the fact, and shall proceed to decide by lot which candidate shall have the preference.

“(g) No person who has held office during the preceding year shall be thereby disqualified for re-election: provided always that no person shall hold the office of President for more than two consecutive years, and that of the members of the Council, not being the President, a Vice-President, Treasurer or Secretary, the two who have served longest on the Council without interruptions, provided they have so served at least four consecutive years, shall not be eligible, until after the lapse of one year, as members of the Council otherwise than as President, Vice-President, Treasurer or Secretary.”

*Reason for Change.* The proposed change is in accordance with the actual practice of the Society, except in the omission of signature on the voting lists themselves and its replacement by a separate certificate of voting. This preserves the anonymity of the vote implied by the use of the word ballot in the present rule. Clauses (e), (f), (g) are clauses (e), (f), (g), of the present Rule 58. They are more appropriately placed here than in Rule 58 which prescribes the procedure at the Annual Meeting.

Rule 45. *At such elections it shall be competent for any Ordinary Member of the Society to vote for members other than those recommended by the Council.*

This rule being embodied in the new Rule 44, may be cancelled. Rules 46 and 47 will then become 45 and 46.

Rule 47. (*New Rule 46*). If for any reason a *President, Vice-Presidents* and Members of Council should not be appointed for the ensuing year on the first Wednesday in February, the *President, Vice-Presidents* and Members of the Council elected during the previous year shall continue to hold office until their successors shall be duly elected.

PROPOSED ALTERATION IN RULE 47 (*new Rule 46*). For "a President, Vice-Presidents" read "the Officers."

*Reason.* The present rule omits all reference to Secretaries and Treasurer.

PROPOSED NEW RULE 47:—

In the case of the absence of the President from Calcutta, from whatever cause, his powers and duties shall immediately pass to the Senior Vice-President present in Calcutta. In the case of the sudden vacation of office in the interval between two meetings of the Council by the Treasurer or one of the additional Secretaries his duties shall be immediately assumed by the General Secretary and carried on by him until next meeting of the Council. In the case of the absence of the General Secretary from a meeting of the Council or of the Society, the Chairman, and in the case of a sudden vacation of office in the interval between two meetings of the Council, the President shall designate one of the additional Secretaries to take his place and exercise his functions, during the meeting or till the next meeting of the Council.

*Reason:* This rule is intended to provide for a contingency which is always liable to arise and is not provided for in the present rules.

Rule 50. The duties of the *Secretaries* shall be as follows:—

For *Secretaries* read "General Secretary, subject to such delegation of duties as may be made in accordance with Rule 51."

Rule 50(*h*). To be ex-officio *Members* of all Committees appointed by the Council.

PROPOSED ALTERATION IN RULE 50(*h*). For *members* read "member."

*Reason:* In accordance with proposed alteration in Rule 4.

Rule 51. The *Secretaries*, when more than one, may, by mutual *agreement*, and subject to the general control of the Council, make such partition of their duties as they may find convenient. The arrangements made by them, and any alterations in the same, shall be communicated to the Meeting of the Council which shall take place next after such arrangement or alteration.

PROPOSED ALTERATION IN RULE 51. For *Secretaries* read "Additional Secretaries," and after *agreement* add "among themselves and with the General Secretary."

*Reason:* In accordance with proposed change in Rule 4.

Rule 52. The Treasurer shall receive and hold for the use of the Society, subject to Rule 66, all monies paid to the Society, he shall

disburse all sums due from the Society, and shall keep exact accounts of all such receipts and payments. Disbursements exceeding 100 rupees shall be made only by order of the Council, or of a Committee of the Council, under signature of the Chairman of the Meeting at which the order was passed.

PROPOSED ADDITION TO RULE 52: "The Treasurer shall be *ex-officio* a Member of all Committees appointed by the Council."

Rule 53. At the expiration of every quarter, the Treasurer shall prepare a list of the names of those members who may be in arrears of their subscriptions for *that or previous* quarters. And shall submit it for the orders of the Council Meetings next before the General Meetings in February, May, August and November.

PROPOSED ALTERATION OF RULE 53: for *that or previous* read "four or more."

*Reason*: The present rule, if observed, would entail making a list of nearly all the members of the Society every quarter. Rule 22 provides for the loss of privileges of membership by members whose subscriptions are more than four quarters in arrear.

Rule 57. The order of business at such [ordinary monthly] Meetings shall be as follows:—

PROPOSED ADDITION TO RULE 57:—

(i) The Chairman shall announce the names of new members elected at the meeting.

(j) The Chairman shall have the power, when he considers that the meeting has been unduly prolonged, to order any uncompleted business, except that provided for in (i), to stand over to the next meeting.

Rule 58(c). The business to be transacted at the [Annual] Meeting shall be, 1st, to elect the *President, Vice-Presidents, Secretaries and other Members of the Council* for the ensuing year.

PROPOSED ALTERATION. For the words "President, &c., substitute "Officers and"; and after the word "year" add "as provided for in Rule 44."

Sections (d), (e), (f), (g) having been embodied in the proposed new rule 44 to be omitted.

Rule 58 (h). *Two Ordinary Members are to be appointed Auditors of the accounts of the Society for the past year.*

It is proposed to omit Rule 58 (h), as the accounts are now audited professionally, which is also provided for in the proposed change in Rule 66.



Rule 66. The accounts and vouchers of the receipts and expenditure of the Society shall be submitted, Monthly and Annually, to a Finance Committee of the Council for examination and audit; they shall also be presented at each Monthly Meeting, and the annual account shall be laid on the Library table for one month for inspection by Members. Separate accounts shall be kept of all grants of money made by Government.

PROPOSED ALTERATION IN RULE 66: Omit the words *shall be presented*, etc. For *all grants of money*, etc. read "all funds administered by the Society on behalf of Government." Add "The Annual Statement of Account shall after professional audit be printed in the *Proceedings* of the Society."

*Reason*:—The alteration brings the rule into accordance with the practice of the Society.

Rule 67. Of the Funds of the Society now invested in Government Securities Rs. 1,20,000 shall be considered as a Permanent Reserve Fund for the benefit of the Society, &c.

PROPOSED ALTERATION, omit the word "now"; after the word "Securities" add "on the 15th Nov. 1876" and after "Rs. 1,20,000" add, "together with all additions which have been, or may be, made in accordance with Rules 69 and 70."

Rule 69. Whenever the Temporary Vested Fund shall exceed the sum of Rs. 10,000, it shall be lawful to the Council, if they consider it desirable to transfer such excess to the Permanent Reserve Fund and the provisions of Rule 67 shall apply to these additions exactly as if they had formed part of the original sum.

PROPOSED ALTERATION. For the words 'Whenever' &c. substitute "The Council shall have the power to make, from time to time, such additions as they consider desirable."

*Reason*. Rule 70 provided that all admission and compounding fees should be immediately transferred to the Permanent Reserve Fund. In 1890 this rule was altered so that the Council can now, when necessary, apply entrance fees to meeting the current expenditure of the Society. The practice has been to follow the spirit of Rule 70 in its original form and to transfer the admission fees to the Permanent Reserve Fund whenever this was possible. It seems desirable to legalise this practice apart from the arbitrary limit of Rs. 10,000 to the Temporary Vested Fund.

Rule 78. When the introduction of any new *Bye-law*, or the

alteration or repeal of any existing *Bye-law*, is recommended by the Council, or proposed by ten or more Ordinary Members, the Council shall cause to be sent to every Member of the Society entitled to vote, a statement of the proposed changes and the reasons for them, with a view to the votes of the general body of Members being taken as directed in Rule 65. Provided always that no change in the *Bye-laws* shall be valid unless a majority of three-fourths of the Members who have voted shall be in favor of the proposed changes.

PROPOSED CHANGE IN RULE 78: For *Bye-law* read "Rule."

*Reason*: The word "Bye-law" is nowhere else mentioned in these rules.

Rule 79. These Rules shall take effect from the 15th November, 1876. All previous Rules, Regulations, and *Bye-laws* are hereby rescinded from that date.

PROPOSED ALTERATION IN RULE 79: For 15th November, 1876, read 15th August, 1899; and omit the words "and Bye-laws."

Dr. M. A. Stein exhibited an old manuscript of certain Parvans of the *Mahābhārata*, written in Śāradā characters and recently purchased by him in Kaśmīr. In his accompanying remarks Dr. Stein drew attention to the special interest attaching to the codex owing to the additional entries made in it by an old glossator, already known from the codex archetypus of Kalhaṇa's *Rājataranṅiṇī* and designated as A<sub>2</sub> in Dr. Stein's edition of the latter text. A curious Sanskrit deed of sale referring to this Mahābhārata MS. and recorded on one of its fly-leaves by the hand of A<sub>2</sub>, makes it now possible to ascertain exactly the time and person of this learned glossator whose notes and readings are of great value for the critical study of the Kaśmīr Chronicle.

The deed of sale itself is a document of antiquarian interest. It is the first Sanskrit record of this kind which has hitherto come to light in Kaśmīr and shows in its form and phraseology close agreement with the formularies found in the curious Kaśmīrian Kośa known as *Kṣemendra's Lokapraśāsa*. The record of the sale price in the deed is of interest as an illustration of the traditional system of monetary reckoning in Kaśmīr. A curious side-light is thrown by it on the economic conditions of old Kaśmīr.

Dr. Stein intends to publish his notes regarding the codex as soon as arrangements can be made for the early reproduction of the folio containing the deed of sale in one of the Journals serving Oriental research.

The following papers were read :—

1. *On a new species of Bhinraj (Dissemurus) with some general notes on the so-called family Dicruridae.*—By F. FINN, B.A., F.Z.S., Deputy Superintendent of the Indian Museum.

2. *Notes on some New and Rare species of Crustacea.*—By MAJOR A. ALCOCK, I.M.S., Superintendent of the Indian Museum, with *Exhibition of Specimens.*

The papers will be published in the *Journal*, Part II.

3. *The Royal Society's scheme for an International Catalogue of Scientific Literature.* By the Honorary Secretary of the Committee of Control, Regional Bureau for India and Ceylon.

#### I. ORIGIN AND OUTLINE OF THE SCHEME.

At an International Conference organized by the Royal Society, and held in London during July 1896, it was considered "desirable to compile and publish, by means of some international organisation, a complete catalogue of scientific literature, arranged according both to subject matter and to authors' names," in order that scientific investigators, by means of the catalogue, may be able readily to find out what has been published concerning any particular subject of enquiry.

In the following November a Committee was appointed by the Royal Society of London to study all the questions involved, and to frame a scheme for the work. The report of this Committee was issued on the 30th March, 1898, and during the following October a second International Conference was held in London to discuss the proposals of the Committee. This Conference, which included delegates from Austria, Belgium, France, Germany, Hungary, Japan, Mexico, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States, Cape Colony, India, Natal, New Zealand and Queensland, confirmed the general principle of the previous Committee, that a catalogue be published in the form of separate cards for each paper as well as periodically classified in book form. It was decided to provide schedules for the internal classification of each of the following seventeen sciences :—

Mathematics.

Astronomy.

Meteorology.

Physics.

Crystallography.

Chemistry.

Mineralogy.

Geology (including Petrology).

Geography—Mathematical and Physical.

Palæontology.

Anatomy.

Zoology.

Botany.

Physiology (including Pharmacology and Experimental Pathology.)

Bacteriology.

Psychology.

Anthropology.

Each of these subjects will be distinguished by a separate *registration letter* and the subdivisions indicated in the schedules by *registration numbers* designed purely for the guidance of the Central Bureau in arranging the cards in order for the compilation of a book subject catalogue.

*Card catalogue* :—The basis of the catalogue is the card or slip. For every communication containing scientific statements worthy of being indexed, whether appearing in a periodical or any other form of independent publication, at least one separate slip is to be prepared. These will be issued regularly to subscribers and will enable them not only to keep themselves informed as to the progress of a science, but also easily to keep an “account current” of such progress.

*Book catalogue* :—At determined regular intervals, not necessarily the same for all sciences, the Central Bureau in London will compile from the slips and issue in a book form an index to authors as well as an index to the subjects treated in the literature published within the determined period. The book-catalogue will be obtainable in parts corresponding to the several sciences for which slips are provided, and in some cases, in Zoology for example, it may be found desirable to issue separate volumes for special sections of the subject. It is proposed also to supplement this frequent periodical publication of book-catalogues by issuing collective indices covering periods of at least five or ten years. The titles of the publications and the subject entries will appear either in English, French, German, Italian or Latin, and the titles of publications appearing in other languages will be translated into one of these five for the purpose of indexing, but the original title will be preserved and issued with the translation.

The final schedule of classification for each subject is now being worked out by an International Committee, which was appointed by the 1898 Conference for the purpose, but the schedules proposed by the Royal

Society's Committee, whose work closed on March 30th of last year, may be taken as example of the way in which the subjects will be sub-divided and catalogued.

As an example, the schedule proposed for subject F, Chemistry, is given at the end of this note and shows the elaborate system of classification which will enable the worker in any special branch to readily obtain the current literature bearing on his researches.

Where the different subjects overlap one another arrangements will be made as much as possible for similarity of numbering. Thus, in the case of Palæontology a publication will be numbered according to the system used in Geology for the stratigraphical horizon of the fossils referred to, according to the Zoological and Botanical systems to indicate their position in the animal or vegetable kingdom, and according to the scheme for Geography to show the country in which the specimens were found. A paper, for instance, on Cretaceous Fishes from Asiatic Turkey would bear the symbol, K75, 14*ei*; K standing for Palæontology; 75, the number for Cretaceous in the Geological schedule; 14 that for fishes in the Zoological; *e* for Asia and *ei* for Asiatic Turkey and Arabia.

The systems of classification indicated above for Chemistry and for Palæontology are sufficient to show the immense value the catalogues will be to special workers, who, under present circumstances, have no certain means of readily discovering the whole of the current literature bearing on their particular lines of research.

## II. THE FORMATION OF REGIONAL BUREAUX.

The Royal Society's Committee, by enquiry of experts in the various subjects, estimated that the number of communications to be analysed and indexed would not fall far short of 40,000 in each year. To deal with such a body of literature, according to the detailed scheme indicated above, would, naturally, be beyond the powers of any one unaided Society, and the formation of Regional Bureaux was consequently undertaken.

The term *Regional Bureau* is introduced to indicate an organisation, wherever established, for the purpose of collecting and indexing the scientific literature of a particular region. The region may be either a country or part of a country, or several countries or parts of countries which can for this particular purpose be conveniently grouped together.

It is proposed that such Regional Bureaux shall be entrusted with the task of preparing the slips required to completely index the scientific literature of the regions committed to their charge. The slips so prepared in the different regions will be regularly forwarded

to the Central Bureau in London, to be checked according to the sanctioned schedules, and then printed, first in slip form and finally in book form for issue to the subscribers.

*Primary slips*:—The slips forwarded to the Central Bureau from each region will be known as *primary slips*, and when these bear more than one registration letter, or more than one subject-entry (indicating that more than subject is treated in the publication it refers to), copies will be printed, with or without alteration in the arrangement of the subject-entries, to permit the production of a full card catalogue for each subject. Such copies of the primary slip will be known as *secondary slips* and will be prepared entirely in the Central Bureau.

The Regional Bureaux will be responsible merely for the preparation of the primary slips, each of which is to contain:—

- (i) *A Title-entry*—giving the author's name and the full title of the communication, in the original language alone if the language be either English, French, German, Italian or Latin. In the case of other languages, the title will be, as far as the Regional Bureau for India and Ceylon is concerned, translated into English; but the original title will also be added, either in the original script, or transliterated into Roman script. The title will be followed by every necessary reference, including the year of publication, and such other symbols as may be determined. In the case of a separately published book, the place and year of publication, and the number of pages, &c., will be given.
- (ii) *Subject-entries*—indicating as briefly as possible the principal subjects to which the communication refers. Such subject-entries will be given only in the original language of the communication if this be one of the five previously referred to, but in other cases in India and Ceylon, English will be used.

The following specimens of primary slips prepared by the Royal Society's Committee will serve as a guide to Authors, who, it is hoped, will assist the local committee in their preparation:—

### Specimen Primary Slips.

#### Mineralogy.

- G.
- FOOTE, H. W. On the occurrence of Pollucite, Columbite, and Microlite at Rumford, Maine. *Am. Journ. Sci.*, 1896 (iv), 1, 457.  
*Pollucite*. From Rumford, Maine. *Anal.*  
*Mangano-columbite*. From Rumford, Maine. *Cryst.*

*Columbite.* Mangano-columbite, from Rumford, Maine. Cryst.  
*Microlite.* From Rumford, Maine.  
*Rumford* (Maine). Pollucite, &c.

## Zoology.

## L.

WINTON, W. E. de. Remarks on the existing forms of Giraffe.  
 P. Zool. Soc. London, 1897, pp. 273-283.

[*Mammalia, Artiodactyla, Giraffide.*]

*Giraffa*, specific characters, figg.; synonymy ...  
 Means of defence, use and origin of horns ...  
 Africa, distribution in ... ..

## III. THE REGIONAL BUREAU FOR INDIA AND CEYLON.

The Asiatic Society of Bengal, recognising the immense value of the scheme to workers in this country, readily acceded to the request of the Royal Society and undertook the formation and conduct of a Regional Bureau for India and Ceylon. The Governments of India and Ceylon have been addressed in the subject, and, in addition to an annual grant sanctioned by the former Government to cover office expenses, they have directed all heads of Government Departments issuing publications on subjects included in the Royal Society's list, to supply the Asiatic Society with primary slips of the kind described above; they have also instructed Local Governments and Administrations to supply periodical lists of books and journals published within their jurisdiction, with, as far as possible, copies of the publications.

A Committee has been appointed by the Asiatic Society to control the work of this Regional Bureau, and each subject defined by the Royal Society is represented on the Committee by a specialist, who will be responsible for checking or supplementing the primary slips relating to publications in his particular subject.

*To Authors*:—But as there are some fifty periodicals to be examined, besides independently published works, the Committee feels that its self-imposed task will not be adequately carried out without the loyal assistance of authors themselves, who, naturally, can most rapidly and most accurately indicate the scope of their essays.

The working of this scheme will, moreover, be attended with certain advantages to the authors themselves; for the catalogues will be regularly printed and issued by the Royal Society to the subscribers, who will include, besides many of the chief workers in each science, the principal scientific institutions and libraries in the world. In this way all scientific papers and books published in India will be brought

to the notice of the scientific world and the present partial and unavoidable neglect of Indian publications will consequently no longer be possible. In fact, as far as the scientific world is concerned, work published in India will now receive, as it should do, exactly the same notice as it would if published by a leading society in Europe.

The assistance which the Committee ask of authors of papers coming within the scope of the catalogue is the preparation of a "primary slip" for each paper, prepared as already indicated and in a form similar to the two samples given above.

It is important to observe that what is required is not an index to the paper or book, but an index to the subjects treated, and the entries for these should be as brief and as few as is consistent with the scope of the paper. The author is not asked to enter the registration letters and numbers; that will be done by the Bureau, but he is requested to make the subject-entries, and these should only be prepared for subjects which are so treated as to contain an addition or alteration to existing knowledge; subjects referred to merely as illustrations of the matters dealt with in the paper should not be indexed.

In the case of papers dealing with Palaeontology, Zoology or Botany the Primary Slip should contain a classified list of all new species described. If no new species are described the subject-entries should indicate the natural orders, families, or genera dealt with and the subject dealt with in relation to them.

Books or papers whose scope is completely or sufficiently indicated by the title will require no further subject-entries. Text-books and educational works whose scope is sufficiently indicated by their title require no subject-entries, except where they may contain additions to the existing knowledge of science, when subject-entries should be prepared for these parts only.

The Committee of the Regional Bureau have drawn up a list of periodicals which are known by them to publish scientific papers, and which are received in the library of the Asiatic Society of Bengal; but they have to trust to the quarterly reports from Local Governments for intimation of the publication of independent books and pamphlets. As these quarterly reports may appear some considerable time after the publication of a book, it is desirable for Authors, to ensure immediate record being made of their work, to send a copy to the Asiatic Society accompanied by a primary slip containing title and subject-entries. Societies and Editors are similarly recommended to adopt the very useful practice now being followed by many scientific societies in Europe of issuing primary slips with each "part" of a journal. Such slips can best be prepared by the authors themselves, and sent to the



editor of the journal in which his paper appears for transmission with the journal to the Asiatic Society of Bengal.

#### IV. CENTRAL ORGANISATION.

For the continuation and proper development of the work the Royal Society recommended, and the Conference held last October approved of, the organisation of *International Conventions* to be held in London in 1905, 1910 and every tenth year afterwards. Such International Conventions will consist of delegates appointed to represent the various Regional Bureaux, for the purpose of revising as may be necessary the regulations for carrying out the work of the catalogue authorised by the International Conference of 1898.

It is also proposed to form an *International Council* composed of one member from each of the Regional Bureaux to act as a governing body of the catalogue. The reports of this Council, giving an account of the expenses of the scheme, will be distributed to the several Regional Bureaux and will be published in recognised local periodicals.

The International Council will appoint for each science an *International Committee of Referees* to decide on questions of classification not provided for by the catalogue regulations, or in cases of doubt to pronounce an opinion as to the meaning of the regulations.

The actual routine work connected with the classification of primary slips received from the different regions, and the printing and issue of the catalogues will be carried on in London by the *Central Bureau*, which will consist of a Director and staff of expert Assistants.

It is impossible yet to fix the rates of subscription to the catalogues, but the scheme drawn up by the Royal Society's Committee provides for subscription to the Slip Catalogue and the Book Catalogue separately, both of which will be issued in parts devoted to the whole of a registered science when its literature is limited in amount, or to a special section of a science when its literature is extensive and capable of convenient subdivision. The Regional Bureaux will, later on, be provided with the scale of subscription, when steps will be taken to inform individuals or institutions likely to subscribe.

The preparation of the catalogue will date from the 1st of January, 1900.

**Abridged Schedule of Classification for Chemistry.\****Chemical Bibliography.*

- 0000 Philosophy.
- 0010 History.
- 0020 Biography.
- 0030 Dictionaries, collected works, text-books.
- 0040 Pedagogy.
- 0050 Addresses, lectures, essays and theses.
- 0100 Chemistry (Specific) of the Elements, to include all entries relating to the elements generally, or which cannot be referred to any one of the known elements.
- 0110 Aluminium.
- 0120 Antimony.
- 0130 Argon, followed by the other known elements at similar numerical intervals and arranged in alphabetical order up to—
- 0840 Zirconium.

Entries made under any element may be further sub-divided according to the nature of the compounds in which they occur, and are arranged into five further sections in such order that the entries relating,  $\alpha$ , to the history or origin of the substance shall come first, followed by,  $\beta$ , its preparation or manufacture;  $\gamma$ , its structure, or theoretical nature;  $\delta$ , its interactions or use; and  $\epsilon$  its compounds.

- 0900 Laboratory Procedure.
- 1000 Organic (Carbon) Chemistry (Specific).
- 1010 Hydrocarbons generally with the following recognised groups—
- 1020 Paraffins.
- 1030 Unsaturated open chain hydrocarbons.
- 1040 Benzenoid hydrocarbons.
- 1050 Reduced benzenoid hydrocarbons (terpenes, &c.).
- 1060 Unclassified hydrocarbons.

When necessary these groups of hydrocarbons are further sub-divided into isologous groups, in each of which the compounds are entered in homologous order.

- 1100 Alcohols and Ethers with sub-divisions as in the case of hydrocarbons ranging from 1110 to 1150.
- 1200 Acids.

\*From the Report of the Royal Society Committee, March 30th, 1898. The numbers employed to distinguish the sub-divisions are sufficiently separated to admit the interpolation of new sub-divisions as the subject expands.

- 1300 Aldehydes and Ketones.
- 1400 Carbohydrates; Glucosides; Resins.
- 1500 Amino- and Azo-compounds.
- 1600 Mixed Cycloids.
- 1700 Organo-metallic and allied compounds.
- 1800 Alkaloids.
- 1900 Proteids.
- 2000 Coloured compounds.
- 2500 Operations in Organic Chemistry.
- 3000 Analytical Chemistry.
- 3500 Theoretical and Physical Chemistry.
- 4000 Physiological Chemistry.

The above are only the main sections proposed by the Committee; the sub-divisions between Nos. 1500 and 1600 (*Amino- and Azo- compounds*) will serve to exemplify the next stage of sub-division in the schedule—

- 1510 Amino-paraffins.
- 1520 Amino-derivatives of unsaturated open chain hydrocarbons.
- 1530 Amino-derivatives of benzenoid hydrocarbons.
- 1535 Amino-derivatives of reduced benzenoid hydrocarbons.
- 1540 Acid amides and allied compounds.
- 1545 Imides, imido-ethers, &c.
- 1550 Azo-compounds (open chain).
- 1560 Azo-compounds (closed chain).
- 1570 Diazo-compounds (open chain).
- 1580 Diazo-compounds (closed chain).
- 1590 Unclassified amino- and azo-compounds.

Each of the divisions 1570–1540 are sub-divided again into mono-amino-, diamino-, &c., derivatives, which are arranged as in other series.

The following is given as a specimen page of the subject-catalogue in Chemistry:—

### Specimen Page of Subject Catalogue.

#### *F. Chemistry.*

- 0020 Chemical Bibliography.**  
**Biography.**  
 Baumann, Eugen, mit Bildniß und Verzeichniß seiner Schriften. *Kossel*, A., B., 1897, 3197-3209.  
 Blomstrand, Christian. Wilhelm, *Klason Peter*, B., 1897, 3227-3241. Kekulé memorial lecture, with portrait. *Japp, F. R. Soc.*, 1898, 97-131.  
 Stohman, Friedrich, mit Verzeichniß seiner Schriften. *Ostwald*, W., B., 1897, 3214-3222.
- 0040 Pedagogy.**  
 Chapters on the aims and practice of teaching, edited by *Frederic Spencer*. Cambridge (England). At the University Press, 1897. Chap. X., Chemistry, by *Armstrong, H. E.*, 222-259.
- 0100 Elements.**  
 a Sur un nouvel extrait de la bauxite française. *Bayer, R. S.*, Bl., 1894, 11, 1155.  
 Argon, a new constituent of the atmosphere.  $\beta$   $\phi$ . *Rayleigh Lord*, and *Ramsay, W.*, *Phil. Trans.*, 1895, 187-241.
- 0100 Aluminium.**  
 $\delta$  Amalgamirtes mit Wasser als neutrale Reductionsmittel. *Wislicenus, H.*, and *Kaufmann, L. B.*, 1895, 1323, 1983. — *Cohen, J. B.*, and *Ormandy, R.*, *Ibid.*, 1505.  
 Use of amalgamated, in preparing benzenoid hydrocarbons. *Hirst, H. R.*, and *Cohen, J. B.*, *Soc. Pr.*, 1895, 148.  
 Action sur le carbone et ses composés. *Franck L.*, Bl. 1894, 439.
- C.** Carburé. *Franck L.*, Bl., 1894, 445.
- Cl.** Krystallisirtes.  $\kappa$ . *Dennis, L. M.*,  $\beta$  *Z. a. Ch.*, 1894, 339.
- $\epsilon$  Avec du bornesol, du camphre, et du camphre monochloré. *Perrier, G.*, C. r., 1894, 119, 276.  
 Avec les composés nitrés aromatique. *Perrier G.*, C. r., 1895, 120, 930.
- O.** Sur les carbonates, les hydrates et  $\beta$  les phosphates. *Schlumberger, E.*, Bl., 1895, 41.
- $\delta$  Réduction par le charbon. *Moissan, H.*, C. r., 1894, 119, 260.
- Si.** Zur Chemie einiger Alumosilicate.
- $\gamma$  Einwirkung der Alkalien. *Thugutt, S. J.*, *Jahrb. f. Min. Beil.*, 9, 554.
- 0390 Iodine.**  
 $\beta$  Pure from Cuprous iodide. *Lean, Bevan*, and *Whatmough, W. H.*, *Soc.*, 1898, 148-157.
- Cu.** Cuprous iodide from iodoform. *Lean, Bevan*, and *Whatmough, W. H.*, *Soc.*, 1898, 153.
- 0510 Nitrogen.**  
 Density of, from various sources. *Rayleigh, Lord*, and *Ramsay, W.*, *Phil. Trans.*, 1895, 187.
- O** Nitrosoverbindungen, Aliphatische.  $\phi$ .  $\beta$  *Piloty, O.*, B., 1898, 452.
- P** Polymeric chloronitrides or phosphorus.  $\beta$  *Stokes, N. H.*, *Am. Chem. Journ.*, 1897, 782-795.
- 1010 Hydrocarbons.**  
 Petroleum, Composition of Californian. *Maybery, C. F.*, *Am. Chem. Journ.*, 1897, 796.
- 1020. Paraffins.**  
 $\beta$  propan, Brom-2-nitroso-2-, aus Acetoxim und Brom. Identisch mit Brompropylpseudonitrol. *Piloty, O.*, B., 1898, 454.  
 Octan-Ueber ein Nitroso-. Dimethyl-2·5-nitroso-2-hexan. *Piloty, O.*, und *Ruff, O.*, B., 1898, 457.
- 1130 Benzenoid-oils.**  
 $\delta$  phenol, p-Amido-, und dessen Äther. Einwirkung des Oxalesters auf *Piutti, A.*, und *Piccoli, R.*, B., 1898, 330.
- 1230 Benzenoid Acids.**  
 Cinnamic and allied acids as a criterion of structure, Etherification of. *Sudborough, J. J.*, and *Lloyd, L. L. Soc.*, 1898, 81-96.
- 1340 Closed chain ons.**  
 $\beta$  Sulfonale cyclischer Ketone. Pentanon-Methylpentanon-, Methylhexanon-, und Heptanon-sulfonal. *Wallach, O.* und *Borsche, W.*, B., 1898, 338.
- 3500 Theoretical Chemistry.**  
 Stereoisomerism as affecting formation of ethereal salts from unsaturated acids. *Sudborough J. J.*, and *Lloyd, L. L. Soc.*, 1898, 81-96.
- 3550 Conditions of Chemical Change.** Moisture, Influence on production and stability of ozone, and on interaction of mercury and halogens of. *Shenstone, W. A. Soc.*, 1897, 71, 477-488.

PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR NOVEMBER, 1899.

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The Monthly General Meeting of the Society was held on Wednesday, the 1st November, 1899, at 9 P.M.

L. DE NICÉVILLE, ESQ., C.M.Z.S., F.E.S., in the chair.

The following members were present:—

Mr. F. Finn, Mr. D. Hooper, Mr. W. A. Lee, Mr. J. D. Nimmo,  
Mr. F. E. Pargiter, Mr. J. Wyness.

Visitors:—Mr. E. Kinnison, Mr. W. F. Reynolds.

The minutes of the last meeting were read and confirmed.

One hundred and fourteen presentations were announced.

Dr. Mannu Lal, Raj Kumar Satchidanand Dev Bahadur, Mr. St. John Stephen, B.A., LL.B., Dr. H. C. Garth, Mr. W. Dods, Mr. E. Seymour Wood, The Most Reverend James Edward Cowell Welldon, D.D., and Babu Jotindra Nath Mukharji, were elected Ordinary Members of the Society during the recess in accordance with Rule 7.

The Revd. Father E. Francotte, S.J., was ballotted for and elected an Associate Member.

Father Francotte has for some years been Professor of Chemistry in the St. Xavier's College. He has conducted the Meteorological Observatory founded in 1867 by Father Lafont, and has published half-yearly summaries of his observations. Recently he has undertaken, as

a member of the Committee for the Regional Bureau, to catalogue the literature on Indian and Ceylonese Meteorology for the International Catalogue of Scientific Literature, and has in other ways shown his knowledge and interest in the progress of Science in India.

Mr. R. C. Hamilton, I.C.S., and Lala Shyam Sunderlal Srivastava, were ballotted for and elected Ordinary Members.

The Council reported that in consequence of the deaths of:—Sir Monier Monier-Williams, Kt., K.C.I.E., Sir William Henry Flower, K.C.B., and Sir Edward Frankland, K.C.B., there were now four vacancies in the list of the Honorary Members. The Council therefore recommended the four following gentlemen for election as Honorary Members at the next meeting.

Professor Edwin Ray Lankester was educated at St. Paul's School, London, and Christ Church College, Oxford. He was appointed Fellow and Lecturer of Exeter College, Oxford, in 1872, and Professor of Zoology and Comparative Anatomy in University College, London, in 1874. He is an honorary LL.D. of the University of St. Andrews (1885), and one of the Honorary Fellows of Exeter College, Oxford. He was elected a Fellow of the Royal Society in 1875. He is one of the most distinguished zoologists of the present day, and has published more than a hundred scientific memoirs (dating from 1865) mostly on Comparative Anatomy and Palæontology, among the most important of which are—A Monograph of the Fossil Fishes of the Old Red Sandstone of Britain (1870): Contributions to the Developmental History of the Mollusca (1875): *Limulus* an Arachnid (1881); *Rhabdopleura* and *Amphioxus*, (1887), and the masterly articles Hydrozoa, Mollusca, Polyzoa, Protozoa, Vertebrata, and Zoology in the ninth edition of the Encyclopædia "Britannica." Since 1869, when he joined his father, the late Dr. Edwin Lankester, in that work, he has been chief editor of the Quarterly Journal of Microscopical Science. During the years 1870-74, he was one of the sectional secretaries of the British Association for the Advancement of Science, and in 1883 was President of the Biological Section of the Association when it met at Southport. In April, 1882, Professor Lankester accepted the Regius chair of Natural History in the University of Edinburgh, on the death of Sir Wyville Thomson, but shortly afterwards resigned it, and was immediately re-elected to his Professorship at University College, which had been endowed, shortly after his original appointment to the post, by Professor Jodrell. In November of the year of this re-election he was elected by the Royal Society to be a member of the Council of that body, and for a second term of service in November, 1888. In 1884, Professor Lankester

founded the Marine Biological Association, of which he is President. In 1885, the Council of the Royal Society awarded to Professor Lankester one of the Royal Medals in recognition of his discoveries in the field of Zoology and Palæontology, and in 1890, he was appointed to the Linacre Professorship of Human and Comparative Anatomy at Oxford, which he has held till last year, when he was appointed Director of the British Museum of Natural History at South Kensington.

Sir George King, K.C.I.E., M.B., LL.D., F.R.S., F.L.S., who has been an ordinary member of the Society since December, 1867, held the post of Superintendent of the Royal Botanic Garden, Calcutta, from 1871 till his retirement from the service of Government in 1898. He is the author of many contributions to systematic botany. Of his numerous papers on regional botany the most extensive and important have been the *Materials for a Flora of the Malayan Peninsula*, of which ten parts have so far been prepared and on which Sir George is still engaged. These, with numerous other less extensive papers have been published in the Society's *Journal* to which Sir George has been, for many years, one of the largest and most important contributors. He has also published in the *Annals of the Royal Botanic Garden* several monographs of the highest importance, notably a *Monograph of the Indo-Malayan and Chinese species of Ficus*, monographs of the genera *Quercus*, *Castanopsis*, *Artocarpus*, *Myristica* and monographs of the natural families *Magnoliaceæ* and *Anonaceæ*. These works are characterised by a rare combination of accuracy of statement, lucidity of description and happiness of arrangement that stamps their author as one of the foremost of living taxonomic botanists.

Sir George's services to Indian horticulture and to applied science have been equally great. To his wide knowledge and his administrative skill in the management of the official industries of Cinchona cultivation and Quinine manufacture is due the fact that Government is now able to place within reach of the poorest the invaluable remedies against malaria that are obtained from Cinchona bark. These services have been officially recognised by the Government of India, by the Governments of France and of Russia and by various scientific Societies, among others by the Botanical Societies of Edinburgh, of Belgium, and of Germany, by the Royal Horticultural Societies of England and of Holland, and by the Pharmaceutical Society of Great Britain and Ireland. Sir George was President of the Botanical Section of the British Association for the Advancement of Science at the annual meeting of the Association held at Dover in September, 1899.

Dr. Edward Burnett Tylor, D.C.L., LL.D., F.R.S., was educated at the School of Friends, Grove House, Tottenham. He is a very

distinguished anthropologist, and was elected a Fellow of the Royal Society in 1871. Two years later he received the honorary degree of LL.D. from the University of St. Andrews, and in 1875 that of D.C.L. from the University of Oxford, which appointed him Keeper of its Museum in 1883, and, later in the same year, Reader in Anthropology. In 1888 he became the first Gifford Lecturer in the University of Aberdeen. He has been the President of the Anthropological Institute during 1880-81, and the author of numerous works on Anthropology; the chief of these being *Anahuac, or Mexico and the Mexicans*, 1861; *Researches into the History of Mankind*, 1865; *Primitive Culture, Researches into the Development of Mythology, Philosophy, Religion, Art and Custom*, 1871; and *Anthropology, an introduction to the Study of Men and Civilisation*, 1881.

Eduard Suess, Ph.D., Professor of Geology at the University of Vienna and President of the Kais. Akademie der Wissenschaften.

He was born 20th August, 1831, at London. He is the author of a great number of scientific works and papers on geological and palæontological subjects. His work "das Antlitz der Erde" of which the 3rd and last volume is about to appear, forms one of the most important contributions to geological science.

He has always warmly befriended Indian Geologists and for years past has been actively aiding in getting the collections of Himalayan fossils described for the Government of India.

The Revd. Graham Sandberg expressed a wish to withdraw from the Society.

The Secretary reported the deaths of Deputy Surgeon-General S. B. Partridge, M.D., a Life Member, and Sir William Henry Flower, K.C.B., and Sir Edward Frankland, K.C.B., Honorary Members of the Society.

The question of resumption by the Society of its original name of "The Asiatic Society" instead of "Asiatic Society of Bengal" of which intimation has already been given by Circular to all Resident Members in accordance with Rule 64 A, were brought up for discussion previous to further circulation under Rule 64 C.

Mr. F. E. Pargiter raised certain objections, which will be circulated.

The Secretary read the following letter from the Secretary to the Government of India in the Revenue and Agricultural Department, regarding the establishment of a standard time for all India.

With reference to your letter No.  $\frac{0}{477}$ , dated 22nd May, 1899, regarding the establishment of a standard time for all India, I am directed



to say that after a very careful consideration of the recommendation made by the Society the Government of India have come to the conclusion that the time has not yet arrived for action such as that suggested by the Society. They consider that there would be a considerable practical difficulty in enforcing a single standard time in places like Bombay, Calcutta, Karachi or Rangoon, and they think that if it is not enforced in such places it is not worth while enforcing it in such other places of minor importance as use the local time for other than railway time.

I am at the same time to thank the Society for having brought the subject so fully and carefully to the notice of the Governor-General in Council.

The Chairman announced that the Council had elected Mr. W. K. Dods, Treasurer, in the place of Mr. R. D. Oldham, resigned, and Major L. A. Waddell, I.M.S., Anthropological Secretary in the place of Mr. L. de Nicéville.

The Chairman also announced that Messrs. M. H. Oung and W. A. Lee had been elected Members of Council of the Society.

The Chairman also announced that Major A. Alcock had been allowed leave of absence for 6 weeks and that Mr. F. Finn has agreed to carry on the duties of the General Secretary.

The Secretary reported that Mr. R. D. Oldham and the Revd. H. B. Hyde had resigned their seats on the Council of the Society.

The following papers were read:—

1. *Materials for a Carcinological Fauna of India, No. 5. The Brachyura Primigenia or Dromiacea.*—By MAJOR A. ALCOCK, I.M.S., Superintendent of the Indian Museum.

2. *A List of the Butterflies of Ceylon with notes on the various species.*—By L. DE NICÉVILLE, F.E.S.

The papers will be published in the Journal, Part II.

3. *Mammalia not hitherto recorded from the Darjeeling District and Sikkim.*—By G. C. DUDGEON, F.E.S.

*Ursus malayanus*, Raffles. For many years I was under the impression, in common with other observers, that only one species of bear was found in the hills round Darjeeling in spite of having constantly been assured by resident Nepalese that there were two. The larger of these they called the *Bhiun Bhálu*, viz. 'ground bear' and the smaller the *Rúkh Bhálu*, viz., 'tree bear.' Their description of the difference between these

two was that the ground bear was considerably larger and was in the habit of attacking people and killing goats and sheep besides being most destructive to crops; the tree bear, on the other hand lived almost entirely in trees and was seldom seen except in dense forest, its food being fruits and honey. I mentioned this to several people but could not procure a skin of the tree bear anywhere. One morning when fishing in the river Rungnoo, a tributary of the Great Rungeet, I saw a small bear coming down from a tree on the opposite bank, it disappeared into the jungle but crossed the stream some 50 yards below me as I afterwards found its fresh tracks on the sand. My rod carrier told me that this was a tree bear, but at the time I put it down as an immature *U. torquatus*, this species being not uncommon. I noticed that the prints showed that the claws were longer than usual in the larger species, the body appeared to be rounder and not so long as that of *U. torquatus*. The view I had of it was not a clear one and I was unable to distinguish any other peculiarity. Some years after, while on a visit to Calcutta I was shown two live bears belonging to Mr. Eigil Möller of that city; they had both been sent to him by his brother in Darjeeling and were, I believe, caught in Sikhim. One was a typical half-grown specimen *U. torquatus* but the other was a very different looking animal. It was much smaller, rounder and with shorter fur; the face showed a distinct difference in that the eyes were smaller and apparently wider apart, the forehead very rounded and the ears short; the claws also were long. I, at once realised that this must be the *Rúkh Bhálu* which I had so often heard of and which I now made out to be *Ursus malayanus*. Mr. E. Möller sent both the bears to a Zoological Society in Denmark where I believe they were recognised as *U. torquatus* and *U. malayanus*. The latter species has been recorded from Upper Burma and probably its range extends along the Bhutan Hills, to Eastern Nepal, as I am informed that the *Rúkh Bhálu* is found at Chaintpur and Elam in Nepal.

*Atherura macrura*, Linn. The Asiatic Brush-Tailed Porcupine. I procured a specimen of this animal at Badamtam, 3,000 feet, 8 miles north of Darjeeling in 1891. It had taken shelter in a long wooden trap made of upright stakes, which was set baited with a goat in order to catch leopards that were constantly destroying my dogs. When discovered it had dug a hole in the mud bottom of the trap to a depth of nearly 3 feet and I was probably only just in time to prevent it escaping. Its colour was dirty whitish and it was clothed with flattened short spines. The tail was long and scaly, for part of its length with a tuft of curiously formed bristles at the extremity. A second specimen was brought to me by a Lepcha in the Daling Division of Darjeeling;

he said that he had caught it at high elevation below Richi-lá, 10,000 feet. I doubt whether it occurs at this elevation. I did not take the animal from the man as I was going away for a few days but I sent him to Mr. W. Helps of Nedeem, Dooars, who bought it and I believe presented it to the Zoological Garden in Calcutta. Blanford in the Fauna of British India records it from Burma and the Malayan countries extending north to Chittagong, Tipperah and the Khasi hills.

*Nemorhœdus bubalinus*, Hodgson, var: vel. *N. sumatrensis*, Shaw. *N. sumatrensis* is described as differing from *N. bubalinus* in the legs being rufous not white or grey near the feet. I have never seen a specimen of *N. sumatrensis* from its recorded locality but I have seen several skins and live serow in the Darjeeling district. The live ones I have come across at low elevation from 1,200 feet up to 4,000 feet and all that I have noticed had the legs rufous. In March or April, 1898, Mr. J. R. Hallifax and I were out shooting together on Punkabaree at about 1,200 to 2,000 feet elevation and he then shot a fine male which had the upper parts black turning to rufous on the sides and with the legs rufous only mixed with a few white hairs near the feet. The skull of this animal measured as under:—

Extreme length from occipital condyles to end of premaxillary bone (over curves) ... ..	inches.
Length from base of horns to end of premaxillary bone ... ..	14 $\frac{3}{8}$
Breadth of zygomatic arches ... ..	4 $\frac{3}{4}$
Length of horns ... ..	9 $\frac{1}{4}$
Spread between tips ... ..	4
Girth round base ... ..	5 $\frac{3}{8}$

Mr. H. L. Crossman and Mr. W. Ager to whom I wrote asking about the colour of the legs of the animals shot by them, tell me that they have shot both forms, the red- and the white-legged, but Mr Crossman who has kept his skins cannot say whether he shot the white ones at the higher elevations or not. This latter gentleman says that he has shot serow as low as 1,000 feet on the Mechi river. They occur in the valley of the Balasun, Rakti, Rhoni, and Pugo-Chu to my own knowledge. In the latter river I have not seen their tracks lower than 2,500 feet; but on the Rakti I have seen the live animal at 1,200 feet. Mr. Crossman has shot sorow at 6,000 feet also and I believe that they are found much higher.

Mr. Hallifax and I have shot gooral, (*Cemas goral*) in the same localities down to 1,000 feet in the precipitous cliffs of the Rakti, they occur on the Mechi river right down to the cliffs bordering the Terai. In the low valleys in the interior wherever sufficiently steep ground is

found goral and serow are found although generally looked for only in the higher hills. I think it will probably be found that *N. sumatrensis* and *N. bubalinus* are one slightly variable species as Blanford is inclined to suggest. An intermediate specimen is recorded by him as having been shot in Darjeeling by General Kinloch.

4. *On a collection of Birds from Manipur.*—By LIEUT. H. H. TURNER. Communicated by the Natural History Secretary.

The paper will be published in the Journal, Part II.

5. *The Physical Types and Affinities of the Wild Tribes of the Brahmaputra Valley.*—By MAJOR L. A. WADDELL, LL.D., I.M.S.

(ABSTRACT.)

Few of the wilder parts of the world, still left, preserve such a vast variety of savage tribes of such great ethnological interest as the mountainous valley of the mighty Brahmaputra in its course from Lower Tibet to the Bay of Bengal.

This hilly region standing up between China, India, Tibet and Burma has come to be the last refuge of scattered families of the more primitive hordes from each of these countries. Driven into these wild glens by the advance of civilization up the plains and lower valleys, these families have been hemmed in among the mountains, where pressing on each other in their struggle for existence they have developed into innumerable isolated tribes, differing widely in appearance, customs and language; and many of them are of that extremely barbarous type which is popularly associated with savage South Africa.

The little that is known about them is just sufficient to show that many of them are in a much more primitive condition than the wildest tribes of India; and that here, almost at our very doors, is a unique mine of unexplored material for yielding that very kind of unrecorded information which European scientists have shown the urgent necessity for fixing without delay, in order to solve many important problems on the origins of human customs and civilization; and in search of such material they have been ransacking the few remaining wilder parts of the world, before the surviving traces of prehistoric usage are irretrievably lost to the world.

Unfortunately for science, however, this unique mass of material in the Brahmaputra Valley, is also being allowed to disappear unrecorded. Of late years, and especially since our annexation of Upper Burma, the greater portion of this region is being opened out. Roads and railways are being rapidly pushed through amongst these hills, and the tribes which have hitherto been isolated from the outside world

are fast losing their primitive customs and adopting those of their Hinduised Assamese neighbours. And practically no steps are being taken to fix their rare vestiges of prehistoric society still surviving amongst them.

Nor has anything even been done to record the physical type of these tribes by precise measurement, so as to trace their racial elements, their affinities, and the routes and streams of their emigrations to their sources.

It is chiefly with reference to this latter, hitherto unexplored, aspect of these tribes that I here present the results of my own private labours, as a contribution towards fixing the physical type and racial affinities upon the only trustworthy basis, namely actual measurement. The vast number of these tribes, however, and the great difficulties in the way of a private individual reaching them makes the completion of this research on a sufficiently large scale to secure finality in results, quite beyond the reach of private effort.

Some explanation seems needed as to why I have attempted this huge task single-handed, and with my scant leisure, without ever having had the advantage of having been stationed officially in Assam. I undertook this self-imposed task because, although it is of such importance, no one else had attempted it; and also because I had already done so much in a similar direction in regard to the allied Himalayan tribes of Sikkim, Eastern Nepal, Bhotan and the Koch tribe of Northern Bengal. In those researches I had found that, contrary to the usually accepted opinion, the affinities of many of those tribes lay rather with the Indo-Chinese tribes of Assam than with the trans-Himalayan Tibetans. As nothing was on record practically in respect to the physical type of the former, I had therefore to devote several periods of private leave to visiting Assam specially for the purpose of supplying this deficiency. All the more so did I feel compelled to do this because of the recognised necessity that for comparative purposes it is essential that one and the same individual should if possible take all the measurements so as to avoid that prolific source of error—the different ‘personal equations’ of different observers.

Moreover, I had already personally visited and measured not only the surrounding tribes of the Eastern Himalayas above-mentioned, but also Tibetans from all parts of Tibet including the valley of the Tsang-po (that is the Upper Brahmaputra) and also most of the tribes of Burma as far up as the Kachins or ‘Singphos’ above Bhamo, on the southern confines of China and Assam. So that, on including the Brahmaputra Valley I had the unique advantage for comparative purposes of having personally measured most of the tribes from Mongolia

to Siam, and thus obtained trustworthy data for unravelling the tangled affinities and contrasts of most of the many tribes throughout this vast area.

The observations now published relate to about six hundred individuals, belonging to over thirty different tribes; and of each individual I made twenty to thirty or more measurements. The enormous labour and drudgery, not to speak of the expense, entailed in taking these physical measurements, even after reaching the tribes and securing the consent of typical members to submit to the measurement, and this usually at the end of long fatiguing marches, all this can only be appreciated by those who have ever attempted such a task.

It is claimed for my observations, that they afford for the first time exact details of the physical type of almost all the tribes of the Brahmaputra Valley; and for the first time in India, apparently, a record of the colour of the skin and eyes—all of which data are strictly comparable, in that they have all been made with scrupulous care by the same observer. And the physical type is also freely illustrated by photographs, mostly taken by myself.

The paper will be published in full in the *Journal*, Part III.

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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR DECEMBER, 1899.

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The Monthly General Meeting of the Society was held on Wednesday, the 6th December, 1899, at 9 P.M.

COLONEL T. H. HENDLEY, C.I.E., I.M.S., Vice-President, in the chair.

The following members were present :—

Major A. Alcock, I.M.S., Mr. E. C. S. Baker, Mr. J. Bathgate, Dr. T. Bloch, Mr. W. K. Dods, Mr. F. Finn, The Revd. Father E. Francotte, S.J., Mr. E. B. Havell, Mr. T. H. Holland, Mr. D. Hooper, Mr. G. W. Kuchler, Kumar Rameswar Maliah, Mr. L. de Nicéville, Mr. H. Stark, Dr. M. A. Stein.

Visitors :—Mr. W. H. Gelling, Mr. E. Kinnison, Mr. C. Michie, Mr. G. H. Turton, Mr. D. R. Wallace.

The minutes of the last meeting were read and confirmed.

Sixty presentations were announced.

Captain W. F. O'Connor, R.A., and Mr. J. G. Lorimer, I.C.S., were balloted for and elected Ordinary Members.

Professor E. Ray Lankester, M.A., LL.D., F.R.S., Sir George King, K.C.I.E., LL.D., F.R.S., Professor E. B. Tylor, D.C.L., LL.D., F.R.S., and Professor E. Suess, Ph.D., were balloted for and elected Honorary Members.

The Secretary reported the death of Mr. J. H. Gilliland.

The Chairman announced that Major A. Alcock, I.M.S., having returned from leave, had taken over charge of the duties of General Secretary from Mr. F. Finn.

The following papers were read :—

1. *Akakia : an ancient Eastern Medicine.*—By DAVID HOOPER, F.C.S.

2. *Notes on the Ploceidæ.*—By F. FINN, B.A., F.Z.S., Deputy Superintendent of the Indian Museum.

3. *On a new Genus of Butterflies from Western China allied to Vanessa.*—By L. DE NICÉVILLE, F.E.S., C.M.Z.S.

The papers will be published in the Journal, Part II.

4. *A Primer of the Asur dukmā, a dialect of the Kolarian language.*—By THE REV. DR. FERDINAND HOHN, German Evangelical Mission, Chota Nagpur. Communicated by DR. G. A. GRIERSON, C.I.E.

5. *A Revision of the Symbols on the Karṣapaṇa Coinage, and descriptions of many additional symbols.*—By W. THEOBALD, M.N.S.L. Communicated by MR. C. L. GRIESBACH, C.I.E.

6. *Five new Copper-plate inscriptions from Sumbalpur.*—By BIJOY CHANDRA MAZUMDAR. Communicated by the Philological Secretary.

7. *The story of gSerribuzhung 'the golden son.' A Ladakhi Tale.*—By THE REV. DR. E. SHAWE AND A. H. FRANKE, Moravian Missionaries, Leh. Communicated by the Philological Secretary.

The papers will be published hereafter in the Journal, Part I.

The Secretary reported, as a caution to Members using the Library, that for protection against insects he had caused all the books to be poisoned with a spirit solution of corrosive sublimate.

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## LIBRARY.

The following additions have been made to the Library since the meeting held in December 1898:—

### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Adelaide. Cent. Austr. Explor. Exped., 1889., Journ; Roy. Geogr. Soc., Proc., Vol. III.

Algiers. Soc. Geogr., Bull., T. III, Nos. 3-4.

Amsterdam. K. Akad. Wetensch., Jaarb., 1897; Verhand., Afd. Letterk., N.R., Dl. II, Nos. 1-2; Afd. Natuurk., 1<sup>e</sup> Sectie, Dl. VI, Nos. 1-5., 2<sup>e</sup> Sectie, VI, 1-2; Versl. en Meded., Afd. Letterk., 4<sup>de</sup> Reeks, Dl. I-II; Afd. Natuurk., Dl. VI.

Angers. Soc. d' Etudes Scient., Bull., T. XXVII.

Batavia. Genootsch. Kunst en Wetensch., Notulen, Bd. XXXVI, Nos. 3-4., XXXVIII, 1-2; Register, 1889-98; Tijdschr. Ind. T. L. en Vk., Dl. XL, Nos. 5-6., XLI, 1-4.



- Baltimore. Johns Hopkins Univ., Amer. Chem. Journ., Vols. XX, Nos. 2-10., XXI, 1-5; Amer. Journ. Math., Vols. XX, Nos. 2-4, XXI, 1-2; Amer. Journ. Phil., Vols. XVIII, Nos. 2-4., XIX, 1-4; Circulars, Vol. XVIII, Nos. 137-141; Mem. Biol. Lab., Vol IV, Nos. 1-2; Studies Hist. Pol. Sci., XVI Ser., Nos. 1-12., XVII, 1-5.
- Berlin. Entom. Zeitschr., Bd. XLIII, Nos. 1-4., XLIV, 1-2; Gesellsch. Naturf. Freunde, Sitzungsber., 1898; K. Preuss. Akad. Wissensch., Abhandl., 1898; Sitzungsber., Nos. 40-54, 1898., 1-33, 1899; Preuss. Meteorol. Institut., Magnetische Beobachtungen, 1892-93.
- Bellary. Astrol. Mag., Vol. III, Nos. 8-10.
- Bombay. Anthropol. Soc., Journ., Vol. IV, Nos. 7-8; B'bay Br. Roy. Asiat. Soc., Journ., Vol. XX, No. 54; Ind. Antiquary, July to December, 1898., January to June, 1899; Nat. Hist. Soc., Journ., Vols. XI, Nos. 5., XII, 1-2.
- Boston. Amer. Phil. Assoc., Trans. and Proc., Vol. XXIX; Soc. Nat. Hist., Mem., Vol. V, Nos. 4-5; Proc., Vol. XXVIII, Nos. 8-16.
- Brisbane. Agri. Journ., Vols. III, Pts. 5-6., IV, 1-6., V, 1-4; Roy. Geogr. Soc., Proc. and Trans., Vol. XIII; Roy. Soc., Proc., Vol. XIV.
- Brussels. Soc. Entom., Ann., T. XLII; Soc. Roy. Malac., Ann., T. XXXII; Bull., 1899; Soc. Roy. Sci., Mem., 3 Sér., T. I.
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OF THE  
ASIATIC SOCIETY OF BENGAL.  
ON THE 31ST DECEMBER, 1898.

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1888 Feb. 1.	F.M.	Adamson, Lieut.-Col. Charles Henry Ellison, M. S. C. <i>Europe</i> .
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1888 Feb. 1.	R.	Alcock, Major Alfred William, M. B., C. M. Z. S., F. G. S., I. M. S., Superintendent, Indian Museum. <i>Calcutta</i> .
1885 Mar. 4.	N.R.	Ali Bilgrami, Sayid, B. A., A. R. S. M., F. G. S. <i>Hyderabad</i> .
1874 June 3.	R.	Amir Ali, The Hon., M. A., C. I. E., Barrister-at-Law, Judge, High Court. <i>Calcutta</i> .
1865 Jan. 11.	F.M.	Anderson, John, M. D., F. R. S., F. L. S. <i>Europe</i> .
1884 Sept. 3.	R.	Anderson, J. A. <i>Calcutta</i> .
1893 Aug. 31.	N.R.	Anderson, Captain A. R. S., B. A., M. B., I. M. S. <i>Bombay</i> .
1892 Jan. 6.	A.	Arnold, Henry Kerchever Walter. <i>Europe</i> .
1890 July 2.	N.R.	Arnold, Thomas Walker, B. A., M. R. A. S. <i>Lahore</i> .
1872 April 3.	N.R.	Ashan-ullah, Nawab, Khan Bahadur. <i>Dacca</i> .
1889 Aug. 29.	N.R.	Aziz-ud-din Ahmad, Deputy Magistrate. <i>Jaunpur</i> .
1870 Feb. 2.	L.M.	Baden-Powell, Baden Henry, M. A., C. I. E. <i>Europe</i> .
1898 Nov. 2.	N.R.	Bailey, The Revd. Thomas, M. A., B. D. <i>Sialkct</i> .

Date of Election.		
1891 Mar. 4.	N.R.	Baillie, D. C., I. C. S. <i>Naini Tal.</i>
1898 Aug. 3.	N.R.	Bain, Major D. W. S., I. M. S. <i>Mercara.</i>
1892 Aug. 3.	A.	Baker, Lieutenant Donald. <i>Europe.</i>
1891 April 1.	N.R.	Baker, Edward Charles Stuart. <i>North Cachar.</i>
1889 May 1.	R.	Banerji, The Hon. Gurudas, M. A., D. L., Judge, High Court. <i>Calcutta.</i>
1896 Mar. 4.	N.R.	Banerji, Satish Chandra, M. A. <i>Allahabad.</i>
1869 Dec. 1.	L.M.	Barker, R. A., M. D. <i>Europe.</i>
1885 Nov. 4.	R.	Barman, Dāmudar Das. <i>Calcutta.</i>
1877 Jan. 17.	N.R.	Barman, H. H. The Maharaja Radha Kishor Dev. <i>Tipperah.</i>
1898 Mar. 2.	N.R.	Barnes, Herbert Charles, I. C. S. <i>Shillong.</i>
1894 Sept. 27.	R.	Basu, Nagendra Natha. <i>Calcutta.</i>
1898 May 4.	R.	Bathgate, J. <i>Calcutta.</i>
1895 July 3.	L.M.	Beatson-Bell, Nicholas Dodd, B. A., I. C. S. <i>Buckergunge.</i>
1878 Sept. 25.	A.	Beighton, T. D., I. C. S., (retired). <i>Europe.</i>
1876 Nov. 15.	F.M.	Beveridge, Henry., I. C. S., (retired). <i>Europe.</i>
1896 May 6.	R.	Bhaduri, Aghore Chandra. <i>Calcutta.</i>
1878 Oct. 4.	R.	Bhakta, Krishna Gopal. <i>Calcutta.</i>
1879 Mar. 5.	A.	Biddulph, Col. J., I. S. C. <i>Europe.</i>
1898 Nov. 2.	N.R.	Black, Robert Greenhill. <i>Cachar.</i>
1859 Aug. 3.	L.M.	Blanford, W. T., D. C. L., F. R. S., A. R. S. M., F. G. S., F. R. G. S., F. Z. S. <i>Europe.</i>
1897 Feb. 3.	R.	Bloch, Theodor, PH. D. <i>Calcutta.</i>
1893 Feb. 1.	N.R.	Bodding, The Revd. P. O. <i>Rampore Haut.</i>
1885 Mar. 4.	R.	Bolton, The Hon. Charles Walter, C. S. I., I. C. S. <i>Calcutta.</i>
1895 July 3.	A.	Bonham-Carter, Norman, I. C. S. <i>Europe.</i>
1890 July 2.	R.	Bonnerjee, Womes Chunder, Barrister-at-Law, Middle Temple. <i>Calcutta.</i>
1897 June 2.	R.	Bose, Annadaprasad. <i>Calcutta.</i>
1893 Mar. 1.	R.	Bose, Bhupendra Nath, Solicitor. <i>Calcutta.</i>
1895 Mar. 6.	R.	Bose, Jagadis Chandra, M. A., D. SC., Bengal Education Service. <i>Calcutta.</i>
1880 Nov. 3.	N.R.	Bose, Pramatha Nath, B. SC., F. G. S., Geological Survey of India. <i>Camp Raipur, C. I.</i>
1890 Dec. 3.	N.R.	Bose, Rai Nali Naksha, Bahadur, Chairman, Burdwan Municipality. <i>Burdwan.</i>
1895 April 3.	A.	Bourdillon, James Austin, C. S. I., I. C. S. <i>Europe.</i>
1876 May 4.	A.	Bradshaw, Major-General A. F., C.B., M.D. <i>Europe.</i>
1860 Mar. 7.	L.M.	Brandis, Sir Dietrich, K. C. I. E., PH. D., F. L. S. F. R. S. <i>Europe.</i>
1887 May 4.	R.	Bural, Nobinchand, Solicitor. <i>Calcutta.</i>
1896 Jan. 8.	N.R.	Burn, Richard, I. C. S. <i>Kasia, Gorakhpur.</i>
1862 Feb. 5.	L.M.	Bysack, Gaurdas. <i>Calcutta.</i>
1898 Sept. 30.	A.	Cable, Ernst. <i>Europe.</i>

Date of Election.		
1896 Jan. 8.	R.	Caddy, Dr. Arnold. <i>Calcutta.</i>
1895 July 3.	A.	Carey, Hirzel Denis de Mussenden, I. C. S. <i>Europe.</i>
1895 July 3.	N.R.	Carlyle, Robert Warrand, C. I. E., I. C. S. <i>Comillah.</i>
1896 Nov. 4.	A.	Cave-Browne, J. A., I. C. S. <i>Europe.</i>
1890 June 4.	N.R.	Chakravarti, Man Mohan, M. A., B. L., Deputy Magistrate. <i>Gya.</i>
1898 Nov. 2.	R.	Chatterjea, Kishori Mohan, Judge, Court of Small Causes. <i>Calcutta.</i>
1894 Aug. 1.	R.	Chatterjee, M. N., <i>Calcutta.</i>
1893 July 5.	N.R.	Chatterjee, Radhikaraman. <i>Rungpur.</i>
1892 Aug. 3.	N.R.	Chaube, Behary Lall. <i>Bankipur.</i>
1893 Sept. 28.	N.R.	Chaudhuri, Banawarilala, B. Sc. Edin. <i>Sherpur, Mymensingh.</i>
1880 Nov. 3.	R.	Chaudhuri, Rai Khirod Chandra. <i>Chinsurah.</i>
1890 Feb. 5.	N.R.	Chuckerbutty, Arthur Goodeve, I. C. S. <i>Lahore.</i>
1880 Aug. 26.	F.M.	Clerk, Colonel Malcolm G. <i>Europe.</i>
1881 May 4.	N.R.	Cockburn, John, Asst. Sub-Deputy Opium Agent. <i>Etawah.</i>
1889 Nov. 6.	R.	Colville, William Brown. <i>Calcutta.</i>
1890 Dec. 3.	R.	Connan, William, C. E. <i>Calcutta.</i>
1893 June 1.	R.	Cordier, Dr. Palmyr. <i>Chandernagore.</i>
1876 Mar. 1.	F.M.	Crawford, James, B. A., I. C. S. <i>Europe.</i>
1887 Aug. 25.	R.	Criper, William Risdon, F. C. S., F. I. C., A. R. S. M. <i>Calcutta.</i>
1877 June 6.	A.	Croft, Sir Alfred W., M. A., K. C. I. E. <i>Europe.</i>
1895 July 3.	N.R.	Cumming, John Ghest, I. C. S. <i>Comillah.</i>
1898 Aug. 26.	N.R.	Cuppage, Captain W. A., I. S. C. <i>Bareilly.</i>
1873 Dec. 3.	N.R.	Dames, Mansel Longworth, I. C. S. Das, Gopal Ballabh, M. A. <i>Cuttack.</i>
1892 Mar. 2.	N.R.	Das-Gupta, Jogendra Nath, B. A., Barrister-at-Law.
1896 Mar. 4.	R.	<i>Calcutta.</i>
1865 June 7.	N.R.	Das, Raja Jaykrishna, Bahadur, C. S. I. <i>Moradabad.</i> Das, Ram Saran, M. A., Secy., Oudh Commercial Bank, Limited. <i>Fyzabad, Oudh.</i>
1879 April 7.	N.R.	Davis, Arthur William, I. C. S. <i>Europe.</i>
1896 Dec. 2.	A.	De, Brajendra Nath, M. A., I. C. S. <i>Balasore.</i>
1893 Nov. 1.	N.R.	De, Raja Baikuntanath, Bahadur. <i>Balasore.</i>
1885 May 6.	N.R.	De, Kiran Chandra, B. A., I. C. S. <i>Dinagepur.</i>
1895 Sept. 19.	N.R.	Delmerick, Charles Swift. <i>Budaon.</i>
1895 Dec. 4.	N.R.	Deussen, Dr. Paul. <i>Europe.</i>
1893 Mar. 1.	F.M.	Dewhurst, R. Paget., I. C. S. <i>Benares.</i>
1896 Jan. 8.	N.R.	Dods, W. K. <i>Calcutta.</i>
1898 Jan. 5.	R.	Doyle, Patrick, C. E., F. R. A. S., F. R. S. E., F. G. S.
1886 June 2.	R.	<i>Calcutta.</i>
1892 Sept. 22.	A.	Drury, Major Francis James, M. B., I. M. S. <i>Europe.</i>
1889 Jan. 2.	N.R.	Dudgeon, Gerald Cecil, Holta Tea Co., Ltd., <i>Palampur.</i>

Date of Election.		
1879 Feb. 5.	N.R.	Duthie, J. F., B. A., F. L. S. <i>Saharanpur.</i>
1892 Jan. 6.	N.R.	Dutt, Gerindranath. <i>Hatwa.</i>
1877 Aug. 30.	R.	Dutt, Kedarnath. <i>Calcutta.</i>
1892 Aug. 25.	R.	Dutt, Rai Narsingh Chunder, Bahadur. <i>Howrah.</i>
1890 Sept. 25.	A.	Dutt, Romesh Chunder, C. I. E., I. C. S., (retired) Barrister-at-Law, Middle Temple. <i>Europe.</i>
1898 June 1.	R.	Dyson, Major Herbert Jekyl, F. R. C. S., I. M. S. <i>Calcutta.</i>
1870 Mar. 9.	L.M.	Edinburgh, H. R. H. The Duke of. <i>Europe.</i>
1871 Dec. 2.	N.R.	Eliot, John, M. A., C. I. E., F. R. S. Meteorological Reporter to the Government of India. <i>Simla.</i>
1894 Dec. 5.	R.	Finn, Frank, B. A., F. Z. S., Deputy Superintendent, Indian Museum. <i>Calcutta.</i>
1898 Sept. 30.	R.	Firminger, The Revd. Walter K., M. A. <i>Calcutta.</i>
1886 April 7.	A.	Fleet, John Faithfull, C. I. E., I. C. S. <i>Europe.</i>
1892 May 4.	R.	Forrest, G. W., B. A., <i>Calcutta.</i>
1876 July 5.	N.R.	Foulkes, The Revd. Thomas., F. L. S., M. R. A. S., F. R. G. S. <i>Salem, Madras Presidency.</i>
1893 Jan. 11.	N.R.	Gait, Edward Albert, I. C. S. <i>Krishnagar.</i>
1859 Aug. 3.	L.M.	Gastrell, General James Eardley. <i>Europe.</i>
1889 Jan. 2.	R.	Ghose, Jogendrachandra, M. A., B. L. <i>Calcutta.</i>
1889 Mar. 6.	R.	Ghosh, Bhupendra Sri, B. A., B. L. <i>Calcutta.</i>
1869 Feb. 3.	R.	Ghosh, Pratapachandra, B. A. <i>Calcutta.</i>
1895 April 3.	A.	Gilliland, John Howard, M. A. <i>Europe.</i>
1897 Dec. 6.	N.R.	Godfrey, Captain Stuart, I. S. C. <i>Kashmir.</i>
1861 Feb. 5.	N.S.	Godwin-Austen, Lieut.-Colonel H. H., F. R. S., F. Z. S., F. R. G. S. <i>Europe.</i>
1890 Aug. 6.	R.	Goethals, The Most Revd. Paul, D. D., S. J., Arch- bishop. <i>Calcutta.</i>
1896 Nov. 4.	N.R.	Grant, A. J., I. C. S. <i>Wana, Wazirestan.</i>
1897 July 7.	N.R.	Grant, Lieut. J. W., I. M. S. <i>Sirohee.</i>
1898 Aug. 3.	R.	Green, Major Charles Robert Mortimer, F. R. C. S., I. M. S. <i>Calcutta.</i>
1892 Aug. 25.	N.R.	Greeven, R., I. C. S. <i>Naini Tal.</i>
1876 Nov. 15.	N.R.	Grierson, George Abraham, PH. D., C. I. E., I. C. S. <i>Simla.</i>
1885 Dec. 2.	R.	Griesbach, C. L., C. I. E., F. G. S. <i>Calcutta.</i>
1898 June 1.	R.	Gupta, Bepin Behari. <i>Calcutta.</i>
1898 April 6.	R.	Gupta, Krishna Govinda, Barrister-at-Law, I. C. S. <i>Calcutta.</i>
1888 July 4.	R.	Gupta, Rajanikanta. <i>Calcutta.</i>
1898 Jan. 5.	N.R.	Gurdon, Captain P. R. T., I. S. C. <i>Gauhati.</i>
1892 Jan. 6.	R.	Haig, Captain Wolseley., I. S. C. <i>Calcutta.</i>
1883 Jan. 3.	N.R.	Harding, Francis Henry, B. A., I. C. S. <i>Shahabad.</i>



Date of Election.		
1884 Mar. 5.	L.M.	Hassan Āli Qadr, Sir Syud, Nawāb Bahadur, K. C. I. E. <i>Murshedabad.</i>
1898 Feb. 2.	R.	Havell, Ernest Binfield. <i>Calcutta.</i>
1897 Feb. 3.	R.	Hayden, H. H. <i>Calcutta.</i>
1890 June 4.	A.	Heilgers, Robert Phillip, F. R. G. S., F. R. S. S. <i>Europe.</i>
1875 Mar. 3.	R.	Hendley, Col. Thomas Holbein, C. I. E., I. M. S. Inspector General of Civil Hospitals. <i>Bengal.</i>
1890 April 2.	A.	Hickson, F. G. <i>Europe.</i>
1892 Aug. 3.	R.	Hill, Samuel Charles, B. A., B. SC. <i>Calcutta.</i>
1872 Dec. 5.	N.R.	Hoernle, Augustus Frederick Rudolf, PH. D., C. I. E., <i>Simla.</i>
1878 Mar. 6.	N.R.	Hoey, W., PH. D., I. C. S. <i>Gorakhpur.</i>
1886 June 2.	R.	Hogg, Alexander. <i>Calcutta.</i>
1891 July 1.	N.R.	Holland, Thomas H., F. G. S. Geological Survey of India. <i>Madras.</i>
1898 Feb. 2.	R.	Hooper, David, F. C. S. <i>Calcutta.</i>
1884 Mar. 5.	N.R.	Hooper, John, I. C. S. <i>Allahabad. N.-W. P.</i>
1873 Jan. 2.	L.M.	Houstoun, G. L., F. G. S. <i>Europe.</i>
1863 Jan. 15.	A.	Howell, Mortimer Sloper, C. I. E., I. C. S. <i>Europe.</i>
1890 Dec. 3.	R.	Hyde, The Revd. Henry-Barry, M. A. <i>Calcutta.</i>
1866 Mar. 7.	F.M.	Irvine, William, I. C. S., (retired.) <i>Europe.</i>
1895 Dec. 4.	N.R.	Kennedy, Joseph, I. C. S. <i>Bankipur.</i>
1882 Mar. 1.	N.R.	Kennedy, Pringle, M. A. <i>Mozufferpur.</i>
1874 Dec. 2.	N.R.	Khuda Baksh, Maulvie, Khan Bahadur. <i>Bankipur.</i>
1867 Dec. 4.	A.	King, Sir George, M. B., C. I. E., K. C. S. I., F. L. S., I. M. S., (retired.) <i>Europe.</i>
1881 Mar. 2.	N.R.	King, Lucas White, B.A., LL.B., C.S.I., I.C.S. <i>Kohat.</i>
1896 Aug. 27.	R.	Konstam, Edwin Max, I. C. S. <i>Calcutta.</i>
1896 July 1.	R.	Küchler, George William, M. A. <i>Calcutta.</i>
1891 Feb. 4.	N.R.	Kupper, Raja Lala Bunbehari. <i>Burdwan.</i>
1893 July 1.	R.	Laharry, Sarat Chandra. <i>Chinsurah.</i>
1887 May 4.	L.M.	Lanman, Charles R., <i>Cambridge, Mass., U. S. A.</i>
1889 Mar. 6.	A.	LaTouche, Thomas Henry Digges, M. A. <i>Europe.</i>
1889 Nov. 6.	R.	Lee, W. A. <i>Calcutta.</i>
1889 Feb. 6.	R.	Little, Charles, M. A., Bengal Education Service. <i>Calcutta.</i>
1886 Sept. 30.	R.	Luson, Hewling, B. A., I. C. S. <i>Calcutta.</i>
1869 July 7.	A.	Lyall, Sir Charles James, M. A., K. C. S. I., C. I. E., LL. D., I. C. S., (retired.) <i>Europe.</i>
1892 Sept. 22.	R.	Lyell, George. <i>Calcutta.</i>
1870 April 7.	L.M.	Lyman, B. Smith. <i>Philadelphia, Pa., U. S. A.</i>
1868 Dec. 2.	A.	Macauliffe, Michael, B. A., I. C. S., (retired.) <i>Europe.</i>
1896 Mar. 4.	N.R.	MacBlaine, Frederick, I. C. S. <i>Dhubri.</i>
1893 Jan. 11.	L.M.	Maclagau, F. D., M. A., I. C. S. <i>Multan.</i>

Date of Election.		
1891 Feb. 4.	A.	Macpherson, Duncan James, M. A., C. I. E., I. C. S. <i>Europe.</i>
1896 Feb. 5.	A.	Macpherson, William Charles, I. C. S. <i>Europe.</i>
1893 Aug. 31.	N.R.	Mahatha, Purmeshwar Narain. <i>Mozufferpur.</i>
1895 Aug. 29.	R.	Mahomed Gilani, Shams-ul-ulama Shaikh. <i>Calcutta.</i>
1886 Jan. 6.	N.R.	Mahomed Latif Khan, Sayid, Khan Bahadur. <i>Jullunder.</i>
1882 Aug. 2.	R.	Mahomed Yusoof, Maulvie, Khan Bahadur. <i>Calcutta.</i>
1898 Nov. 2.	N.R.	Maitra, Akshaya Kumar, B. A., B. L. <i>Rajshahi</i>
1889 Jan. 2.	R.	Maliah, Kumar Rameswar. <i>Howrah.</i>
1893 July 5.	R.	Mangos, C. D. <i>Calcutta.</i>
1889 Mar. 6.	R.	Mann, John, M. A. <i>Calcutta.</i>
1893 Mar. 1.	N.R.	Marriott, Charles Richardson, I. C. S. <i>Monghyr.</i>
1892 April 6.	N.R.	Maynard, Captain F. P., I. M. S. <i>Hazaribagh.</i>
1886 Mar. 3.	L.M.	Mehta, Rustomjee Dhunjeebhoy, C. I. E. <i>Calcutta.</i>
1895 July 3.	N.R.	Melitus, Paul Gregory, C. I. E., I. C. S. <i>Shillong.</i>
1884 Nov. 5.	R.	Middlemiss, C. S., B. A., Geological Survey of India. <i>Calcutta.</i>
1884 Sept. 3.	R.	Miles, William Harry. <i>Calcutta.</i>
1870 July 6.	R.	Miller, Albert Bermingham, B. A., Barrister-at-Law, Official Trustee. <i>Calcutta.</i>
1898 April 6.	N.R.	Milne, Captain C. J., I. M. S. <i>Bombay.</i>
1874 May 6.	N.R.	Minchin, F. J. V. <i>Aska, Ganjam.</i>
1896 July 1.	N.R.	Misra, Rai Lakshmi Sanker, Bahadur. <i>Benares.</i>
1897 Jan. 6.	N.R.	Misra, Tulsi Ram. <i>Aligarh.</i>
1895 Mar. 6.	N.R.	Mitra, Rajeswar. <i>Nagpur.</i>
1897 Nov. 3.	R.	Mitra, Saroda Churan, M. A., B. L. <i>Calcutta.</i>
1890 Dec. 3.	N.R.	Mitra, Varada Charana, I. C. S., Joint-Magistrate. <i>Farridpur.</i>
1895 July 3.	N.R.	Monahan, Francis John, I. C. S. <i>Shillong.</i>
1898 May 4.	R.	Mookerjee, R. N. <i>Calcutta.</i>
1898 Sept. 30.	R.	Moore, The Revd. Herbert Octavius, M. A. <i>Calcutta.</i>
1879 May 7.	F.M.	Muir, J. W., M. A., I. C. S., (retired). <i>Europe.</i>
1885 July 1.	R.	Mukerjee, Mahamahopadhyaya Nilmani, Principal, Sanskrit College. <i>Calcutta.</i>
1867 Mar. 6.	B.	Mukerjee, Raja Pearimohan, M. A., C. S. I. <i>Uttarpara.</i>
1894 Aug. 30.	R.	Mukerjee, Sibnarayan. <i>Uttarpara.</i>
1896 Aug. 27.	R.	Mukerjee, Syamdas. <i>Calcutta.</i>
1886 May 5.	R.	Mukhopadhyaya, Asutosh, M. A., D. L., F. R. A. S., F. R. S. E. <i>Calcutta.</i>
1892 Dec. 7.	R.	Mukhopadhyaya, Panchanana. <i>Calcutta.</i>
1896 April 1.	R.	Mullick, Sham Lall. <i>Calcutta.</i>
1885 June 3.	N.R.	Naemwoollah, Maulvie, Deputy Magistrate. <i>Saharanpur.</i>
1881 Nov. 2.	R.	Nicéville, Lionel de, F. E. S., C. M. Z. S. <i>Calcutta.</i>

Date of Election.		
1889 Aug. 29.	L.M.	Nimmo, John Duncan. <i>Calcutta.</i>
1887 April 6.	R.	Noetling, Fritz, PH. D. <i>Calcutta.</i>
1894 June 6.	N.R.	Nomani, Shams-ul-ulama Maulvie Muhammad, Professor of Arabic in the Muhammadan Oriental College. <i>Aligarh.</i>
1892 Oct. 27.	N.R.	Norvill, Dr. Frederic H. <i>Dibrugarh.</i>
1885 Feb. 4.	R.	Nyayaratna, Mahamahopadhyaya Mahesachandra C. I. E. <i>Calcutta.</i>
1879 Aug. 28.	A.	Oldham, Dr. C. F., F. R. G. S. <i>Europe.</i>
1883 Dec. 1.	N.R.	Oldham, R. D., A. R. S. M., F. G. S., Superintendent, Geological Survey of India. <i>Camp via Sutna, E.I.R.</i>
1883 Aug. 30.	F.M.	Oliver, Fdw. Emmerson, M. I. C. E. <i>Europe.</i>
1887 July 6.	R.	Oung, Mounq Hla. <i>Calcutta.</i>
1880 Aug. 4.	L.M.	Pandia, Pandit Mohanlall Vishnulall, F.T.S., <i>Muttra.</i>
1880 Jan. 7.	N.R.	Pargiter, Frederick Eden, B. A., I. C. S. <i>Purneah.</i>
1862 May 7.	L.M.	Partridge, Major Samuel Bowen, M. D., I. M. S., (retired). <i>Europe.</i>
1873 Aug. 6.	R.	Pedler, Alexander, F. R. S., Director of Public Instruction, Bengal. <i>Calcutta.</i>
1888 June 6.	L.M.	Pennell, Aubray Percival, B. A., I. C. S. <i>Europe.</i>
1881 Aug. 25.	R.	Percival, Hugh Melville, M. A., Bengal Education Service. <i>Calcutta.</i>
1877 Aug. 1.	N.R.	Peters, Lieut.-Colonel C. T., M. B., I. M. S. <i>Bombay.</i>
1889 Nov. 6.	N.R.	Phillott, Capt. D. C., I. S. C. <i>Kohat.</i>
1896 Jan. 8.	N.R.	Place, George William, B. A., LL. B., I. C. S. <i>Motihari.</i>
1889 Mar. 6.	R.	Prain, Major David, M. A., M. B., I. M. S., Royal Botanic Garden, <i>Sibpur.</i>
1892 Aug. 3.	R.	Pramanick, Asutosh. <i>Calcutta.</i>
1889 Mar. 6.	N.R.	Prasad, Hanuman, Raes and Zemindar. <i>Chunar.</i>
1896 Sept. 25.	F.M.	Pringle, A. T. <i>Europe.</i>
1880 April 7.	R.	Rai, Bipina Chandra, B. L. <i>Serampore.</i>
1895 Aug. 29.	R.	Rai, Jatindranath Chaudhery, M.A., B.L. <i>Barnagor.</i>
1898 Aug. 3.	N.R.	Ram, Sita, M. A. <i>Cawnpore.</i>
1895 Aug. 7.	R.	Ray, Mahendranath, M. A., B. L. <i>Howrah.</i>
1890 Mar. 5.	R.	Ray, Prafulla Chandra, D. sc., Bengal Education Service. <i>Calcutta.</i>
1887 May 4.	R.	Ray, Prasannakumar, D. sc. (Lond. and Edin.), Professor, Presidency College. <i>Calcutta.</i>
1884 Mar. 5.	N.R.	Risley, The Hon. Herbert Hope, B. A., C. I. E., I. C. S. <i>Simla.</i>
1896 Dec. 2.	N.R.	Row, B. Suryanaran, B. A. <i>Bellary.</i>
1895 Mar. 6.	A.	Rowe, Frederick James, M. A. <i>Europe.</i>
1889 June 5.	N.R.	Roy, Maharaja Girjanath. <i>Dinagepur.</i>
1885 Mar. 4.	R.	Rustomjee, Harjeebhoy Manickjee. <i>Calcutta.</i>

Date of Election.		
1893 Aug. 2.	R.	Samajpati, Suresh Chundra. <i>Calcutta.</i>
1896 Aug. 27.	R.	Samman, Herbert Frederick, I. C. S. <i>Serampore.</i>
1887 June 1.	N.R.	Sandberg, The Revd. Graham, B. A., Barrister-at-Law, Inner Temple. Chaplain. <i>Nowgong.</i>
1867 April 3.	R.	Sarkar, Dr. Mahendralal, C. I. E. <i>Calcutta.</i>
1897 Jan. 6.	R.	Sarkar, Amritalal, F. C. S. <i>Calcutta.</i>
1898 Mar. 2.	R.	Sarkar, Jadu Nath. <i>Calcutta.</i>
1885 Mar. 4.	R.	Sarvadhikari, Rajkumar, Rai Bahadur. <i>Calcutta.</i>
1897 Nov. 3.	R.	Saunders, C. <i>Calcutta.</i>
1893 Jan. 11.	L.M.	Scindia, His Highness the Maharaja.
1874 July 1.	R.	Scully, Dr. John, F. C. S. <i>Calcutta.</i>
1896 April 1.	R.	Sen, The Hon'ble Guruprasad. <i>Calcutta.</i>
1886 Mar. 3.	R.	Sen, Hiralal. <i>Calcutta.</i>
1885 April 1.	R.	Sen, The Hon. Narendranath. <i>Calcutta.</i>
1885 April 1.	R.	Sen, Yadunath. <i>Calcutta.</i>
1897 Dec. 1.	R.	Seth, M. J. <i>Calcutta.</i>
1885 Feb. 4.	R.	Shastri, Mahamahopadhaya Haraprasad, M. A. <i>Calcutta.</i>
1891 June 3.	A.	Shillingford, Frederick Alexander. <i>Europe.</i>
1887 April 6.	A.	Simpson, Dr. W. J. <i>Europe.</i>
1893 Mar. 1.	N.R.	Singh, Maharaja Kumara Sirdar Bharat, I. C. S. <i>Rai Bareilly.</i>
1880 June 2.	N.R.	Singh, Thakur Garuradhawaya Prasad, Raja of Beswan. <i>Beswan Fort, Aligarh.</i>
1895 Aug. 29.	R.	Singh, Lachmi Narayan, M. A., B. L. <i>Calcutta.</i>
1892 Mar. 2.	L.M.	Singh, The Hon. Raja Oodaypratab. <i>Binga.</i>
1889 Aug. 29.	N.R.	Singh, H. H. The Maharaja Prabhunarain, Bahadur, Benares.
1859 Aug. 3.	N.R.	Singh, H. H. The Hon. Maharaja Pratap Narain. <i>Ajodhya, Oudh.</i>
1895 Aug. 29.	N.R.	Singh, Ram Din. <i>Bankipur.</i>
1889 Nov. 6.	N.R.	Singh, H. H. The Hon. Maharaja Rameshwara, Bahadur. <i>Darbhangha.</i>
1894 Feb. 7.	N.R.	Singh, H. H. Raja Vishwanath, Bahadur, Chief of Chhatarpur.
1893 April 5.	N.R.	Sinha, Raja Bhupendra, Bahadur, Raja of Bijoypur. <i>Mirzapur.</i>
1894 July 4.	N.R.	Sinha, Kunwar Kushal Pal, M. A. <i>Narki P. O. Agra District.</i>
1872 Aug. 5.	A.	Skrefsrud, The Revd. Laurentius Olavi. <i>Europe.</i>
1874 June 3.	N.R.	Smith, Vincent Arthur, I. C. S. <i>Lucknow.</i>
1898 April 6.	R.	Stark, Herbert, B. A. <i>Calcutta.</i>
1891 Aug. 27.	N.R.	Stein, M. A., Ph. D. <i>Lahore.</i>
1895 July 5.	A.	Steinberg, Alfred Frederick, I. C. S. <i>Europe.</i>
1898 June 1.	R.	Sunder, Donald. <i>Calcutta.</i>
1868 June 3.	R.	Tagore, The Hon. Maharaja Sir Jotendra Mohun, Bahadur, K. C. S. I. <i>Calcutta.</i>

Date of Election.		
1898 April 6.	R.	Tagore, Maharaja Prodyat Coomar. <i>Calcutta.</i>
1897 Dec. 1.	N.R.	Talbot, W. A. <i>Belgaum.</i>
1893 Aug. 31.	N.R.	Tate, G. P., Survey of India. <i>Karachi.</i>
1878 June 5.	N.R.	Temple, Lieut.-Col. Richard Caruac, C. I. E., I. S. C. <i>Port Blair.</i>
1875 June 2.	N.R.	Thibaut, Dr. G., Professor, Muir Central College. <i>Allahabad.</i>
1886 Aug. 4.	R.	Thomas, Robert Edmond Skyring. <i>Calcutta.</i>
1898 Nov. 2.	R.	Thornton, Edward, A. R. I. B. A. <i>Calcutta.</i>
1847 June 2.	L.M.	Thuillier, Lieut.-Genl. Sir Henry Edward Landor, KNT., C. S. I., F. R. S., R. A. <i>Europe.</i>
1891 Aug. 27.	N.R.	Thurston, Edgar. <i>Madras.</i>
1871 April 5.	F.M.	Trefftz, Oscar. <i>Europe.</i>
1861 June 5.	L.M.	Tremlett, James Dyer, M. A., I. C. S., (retired). <i>Europe.</i>
1893 May 3.	N.R.	Vandja, Raja Ram Chandra. <i>Mayurbhanja,</i> <i>District Balasore.</i>
1898 Feb. 2.	R.	Vasu, Amritalal. <i>Calcutta.</i>
1890 Feb. 5.	N.R.	Venis, Arthur, M. A., Principal, Sanskrit College. <i>Benares.</i>
1896 May 6.	R.	Vidyanidhi, Mahendranath. <i>Calcutta.</i>
1894 Sept. 27.	L.M.	Vost, Captain William, I. M. S. <i>Gouda.</i>
1895 July 5.	R.	Waddell, Major Lawrence Austine, M. B., LL. D., I. M. S. <i>Calcutta.</i>
1889 Nov. 6.	N.R.	Walsh, Major John Henry Tull, I. M. S. <i>Berhampur.</i>
1865 May 3.	A.	Waterhouse, Col. James, I. S. C., (retired). <i>Europe.</i>
1874 July 1.	A.	Watt, Dr. George, C. I. E. <i>Europe.</i>
1898 Feb. 2.	R.	Watt, The Revd. J. <i>Calcutta.</i>
1892 Aug. 3.	R.	Whitehead, The Revd. Henry, M. A. <i>Calcutta.</i>
1896 Feb. 5.	N.R.	Williams, Captain Charles E., I. M. S. <i>Nowshera.</i>
1891 May 6.	R.	Wilson, Charles Robert, M. A., Beugal Education Service. <i>Calcutta.</i>
1892 Jan. 6.	R.	Woodburn, The Hon. Sir John, M. A., K. C. S. I., I. C. S. <i>Calcutta.</i>
1894 Sept. 27.	R.	Woodroffe, John George, Barrister-at-Law. <i>Cal-</i> <i>cutta.</i>
1873 Aug. 6.	A.	Woodthorpe, Col. Robert Gossett, C. B., R. E. <i>Europe.</i>
1894 Aug. 30.	N.R.	Wright, Henry Nelson, B. A., I. C. S. <i>Allahabad.</i>
1898 July 6.	R.	Wyness, James, C. E. <i>Calcutta.</i>
1897 Jan. 6.	N.R.	Zaka-ullah, Shams-ul-ulama Muhammad. <i>Dehli.</i>

## SPECIAL HONORARY CENTENARY MEMBERS.

Date of Election.	
1884 Jan. 15.	Dr. Ernst Haeckel, Professor in the University of <i>Jena</i> .
1884 Jan. 15.	Charles Meldrum, Esq., M. A., F. R. S. <i>Mauritius</i> .
1884 Jan. 15.	A. H. Sayce, Esq., Professor of Comp. Philology. <i>Oxford</i> .
1884 Jan. 15.	Monsieur Emile Senart, Member of the Institute of France. <i>Paris</i> .
1884 Jan. 15.	Sir Monier Monier-Williams, <i>Knt.</i> , K. C. I. E., M. A., D. C. L., LL. D., Boden Prof. of Sanskrit. <i>Oxford</i> .

## HONORARY MEMBERS.

1848 Feb. 2.	Sir J. D. Hooker, K. C. S. I., C. B., M. L., D. C. D., F. R. S. F. G. S. <i>Kew</i> .
1860 Mar. 7.	Professor Max Müller. <i>Oxford</i> .
1860 Nov. 7.	Dr. Albrecht Weber. <i>Berlin</i> .
1875 Nov. 3.	Dr. O. Böhlingk. <i>Leipzig</i> .
1879 June 4.	Prof. Edward Bayles Cowell, D. C. L. <i>Cambridge</i> .
1879 June 4.	Dr. Albert Günther, V. P. R. S. <i>London</i> .
1879 June 4.	Dr. Jules Janssen. <i>Paris</i> .
1879 June 4.	Prof. P. Regnaud. <i>Lyons</i> .
1881 Dec. 7.	Lord Kelvin, D. C. L. <i>Glasgow</i> .
1883 Feb. 7.	W. T. Blanford, Esq., D. C. L., F. R. S., A. R. S. M., F. G. S., F. R. G. S., F. Z. S. <i>London</i> .
1883 Feb. 7.	Alfred Russell Wallace, Esq., F. L. S., F. R. G. S. <i>Parkstone, Dorsetshire</i> .
1894 Mar. 7.	Sir William Henry Flower, K. C. B., D. C. L. <i>London</i> .
1894 Mar. 7.	Dr. Edward Frankland, D. C. L., F. R. S. <i>Reigate</i> .
1894 Mar. 7.	Sir George Gabriel Stokes, Bart, F. R. S. <i>Cambridge</i> .
1894 Mar. 7.	Mahamahapodhyaya Chandra Kanta Tarkalankara. <i>Calcutta</i> .
1894 Mar. 7.	Professor Theodor Noeldeke. <i>Strassburg</i> .
1895 June 5.	Lord Rayleigh. <i>London</i> .
1895 June 5.	Lt.-Genl. Sir R. Strachey, G. C. S. I., D. C. L., LL. D., F. R. S., R. E. <i>London</i> .
1895 June 5.	Charles H. Tawney, M. A., C. I. E. <i>London</i> .
1896 Feb. 5.	Sir Joseph Lister, P. R. S. <i>London</i> .
1896 Feb. 5.	Professor Michael Foster, F. R. S. <i>Cambridge</i> .
1896 Feb. 5.	Professor F. Kielhorn, C. I. E. <i>Göttingen</i> .
1896 Feb. 5.	Professor Charles Rockwell Lanman. <i>Massachusetts, U. S. A.</i>

## CORRESPONDING MEMBER.

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Date of Election.	
1866 May 7.	Schlagintweit, Prof. E. von. <i>Berlin.</i>

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## ASSOCIATE MEMBERS.

1874 April 1.	Lafont, The Revd. E., c. I. E., S. J. <i>Calcutta.</i>
1875 Dec. 1.	Bate, The Revd. J. D. <i>Europe.</i>
1875 Dec. 1.	Abdul Hai, Maulvie. <i>Calcutta.</i>
1882 June 7.	Giles, Herbert. <i>Europe.</i>
1884 Aug. 6.	Moore, F., F. R. S., F. L. S. <i>London.</i>
1885 Dec. 2.	Führer, Dr. A. <i>Europe.</i>
1886 Dec. 1.	Dās, Saratchandra, c. I. E. <i>Darjeeling.</i>
1892 April 6.	Samasrami, Satyavrata. <i>Calcutta.</i>
1892 Dec. 7.	Brühl, P. J. <i>Sibpur.</i>

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LIST OF MEMBERS WHO HAVE BEEN ABSENT FROM  
INDIA THREE YEARS AND UPWARDS.\*

\* *Rule 40.*—After the lapse of 3 years from the date of a member leaving India, if no intimation of his wishes shall in the interval have been received by the Society, his name shall be removed from the List of Members.

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The following members will be removed from the next Member List of the Society, under the operation of the above Rule:—

Lieutenant Donald Baker.  
 T. D. Beighton, Esq., I. C. S.  
 Colonel J. Biddulph, I. S. C.  
 Major-General A. F. Bradshaw, C. B., M. D.  
 John Faithfull Fleet, Esq., C. I. E., I. C. S.  
 Robert Philip Heilgers, Esq., F. R. G. S.  
 F. G. Hickson, Esq.  
 Mortimer Sloper Howell, Esq., C. I. E., I. C. S.  
 Michael Macauliffe, Esq., B. A., I. C. S., (retired).  
 Colonel Robert Gossett Woodthorpe, C. B., R. E.

## LOSS OF MEMBERS DURING 1898.

## BY RETIREMENT.

Lieut.-Col. Alexander Crombie, M. D., I. M. S.  
 Sayid Hussein, B. A.  
 The Most Revd. Edward Ralph Johnson, D. D., LL. D.  
 Mohamed Abdul Kadar, Khan Bahadur.  
 Babu Nrisinha Chandra Mukerjee.  
 Thomas M. Munro, Esq.  
 Lieut.-Col. George Ranking, M. D., I. M. S.  
 Thomas William Richardson, Esq., I. C. S.  
 Dr. Edmund James Simpson.

## BY DEATH.

*Ordinary Members.*

The Hon. Moulive Sir Sayid Ahmad, Khan Bahadur, K. C. S. I.  
 Umes Chandra Batabyal, Esq., I. C. S.  
 Babu Harachandra Chauduri.  
 G. E. Grimes, Esq.  
 Pandit Rao Govind Rao Narain.  
 H. H. The Hon. Maharajah Sir Luchmessur Singh, Bahadur,  
 K. C. I. E.  
 Pandit Harimohen Vidyabhusan.

*Honorary Member.*

Dr. Georg Bühler.

*Associate Member.*

Charles J. Rodgers, Esq.

## BY REMOVAL.

*Under Rule 40.*

John Beames, Esq., I. C. S., (retired).  
 Thomas R. Munro, Esq.  
 Colonel H. R. Thuillier, R.E.



[APPENDIX.]

ABSTRACT STATEMENTS  
OF  
RECEIPTS AND DISBURSEMENTS  
OF THE  
ASIATIC SOCIETY OF BENGAL  
FOR  
THE YEAR 1898.

# STATEMENT

## *Asiatic Society*

### Dr.

#### TO ESTABLISHMENT.

	Rs.	As.	P.	
Salaries ... ..	3,230	2	4	
Commission ... ..	313	4	4	
Pension ... ..	52	0	0	
				3,595 6 8

#### TO CONTINGENCIES.

Stationery ... ..	129	14	0	
Lighting ... ..	90	0	0	
Taxes ... ..	819	0	0	
Postage ... ..	628	1	3	
Freight ... ..	102	3	0	
Meeting ... ..	72	8	0	
Registration fee of the Society for 1898 ... ..	5	0	0	
Miscellaneous ... ..	335	8	9	
				2,182 3 0

#### TO LIBRARY AND COLLECTIONS.

Books ... ..	2,672	1	3	
Local Periodicals ... ..	16	0	0	
Binding ... ..	397	10	0	
Furniture ... ..	36	0	0	
				3,121 11 3

#### TO PUBLICATIONS.

Journal, Part I .. ..	4,629	15	9	
Journal, Part II ... ..	3,279	8	6	
Journal, Part III ... ..	378	8	0	
Proceedings ... ..	1,539	3	6	
				9,827 3 9
To Printing charges of Circulars, Receipt-forms, &c. ... ..				204 15 0
„ Personal Account (Writes-off and Miscellaneous) ... ..				338 4 0

#### TO EXTRAORDINARY EXPENDITURE.

Auditor's fee ... ..	100	0	0	
Repairs ... ..	5,829	8	6	
				5,929 8 6
Balance ... ..				1,47,205 1 1
Total Rs. ... ..				1,72,404 5 3

No. 1.  
of Bengal.

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Cr.

		Rs.	As.	P.	Rs.	As.	P.
By Balance from last Report	...	...	...	...	1,53,455	3	7
BY CASH RECEIPTS.							
Publications sold for cash	...	...	815	12	2		
Interest on Investments	...	...	5,530	0	0		
Rent of Rooms on the Society's ground floor	...	...	1,600	0	0		
Allowance from Government of Bengal for the Publication of Anthropological and Cognate Sub- jects	...	...	2,000	0	0		
Ditto Ditto Chief Commissioner of Assam	...	...	1,000	0	0		
Miscellaneous	...	...	67	15	0		
						11,013	11 2
BY PERSONAL ACCOUNT.							
Admission fees	...	...	1,056	0	0		
Subscriptions	...	...	6,348	0	0		
Sales on credit	...	...	197	0	0		
Miscellaneous	...	...	334	6	6		
						7,935	6 6

Total Rs. ... 1,72,404 5 3

G. W. KÜCHLER,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal

Examined and found correct.  
MEUGENS, KING & SIMSON,  
Auditors.

STATEMENT  
*Oriental Publication Fund in Account*

Dr.

To CASH EXPENDITURE.

	Rs.	As.	P.		Rs.	As.	P.
Advertisement ... ..	27	4	0				
Printing charges ... ..	5,607	11	0				
Editing charges ... ..	3,077	0	0				
Salaries ... ..	1,262	0	2				
Freight ... ..	48	2	0				
Stationery ... ..	50	3	9				
Postage ... ..	181	12	3				
Commission on collecting bills ... ..	27	7	6				
Contingencies ... ..	11	11	0				
					10,293	4	2
To Personal Account (Writes-off and Miscellaneous) ... ..						12	0
Balance ... ..					12,739	13	9
Total Rs. ... ..					23,033	13	11

## STATEMENT

*Sanskrit Manuscript Fund in Account*

Dr.

To CASH EXPENDITURE.

	Rs.	As.	P.		Rs.	As.	P.
Salaries ... ..	1,056	0	0				
Travelling charges ... ..	541	14	0				
Purchase of manuscripts ... ..	228	0	0				
Payments for review of manuscripts ... ..	105	0	0				
Copying ... ..	15	4	0				
Printing ... ..	1,036	12	0				
Postage ... ..	58	15	6				
Freight ... ..	4	12	0				
Contingencies ... ..	4	7	6				
					3,051	1	0
To Personal Account (Writes-off and Miscellaneous) ... ..						261	3
Balance ... ..					5,651	14	7
Total Rs. ... ..					8,964	3	1

No. 2.

*with the Asiatic Society of Bengal.*

Cr.

			Rs.	As.	P.	Rs.	As.	P.
By Balance from last Report	...	...	...			11,164	12	0
BY CASH RECEIPTS.								
Government allowance	...	...	9,000	0	0			
Publications sold for cash	...	...	1,407	12	5			
Advances recovered	...	...	67	11	0			
						10,475	7	5
BY PERSONAL ACCOUNT.								
Sales on credit	...	...				1,393	10	6
			Total Rs.	...		23,033	13	11

G. W. KÜCHLER,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Examined and found correct.  
 MEUGENS, KING & SIMSON,  
*Auditors.*

No. 3.

*with the Asiatic Society of Bengal.*

Cr.

			Rs.	As.	P.	Rs.	As.	P.
By Balance from last Report	...	...	...			5,755	3	1
BY CASH RECEIPTS.								
Government allowance	...	...	3,200	0	0			
Publications sold for cash	...	...	6	0	0			
						3,206	0	0
BY PERSONAL ACCOUNT.								
Sales on credit	...	...				3	0	0
			Total Rs.	...		8,964	3	1

G. W. KÜCHLER,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Examined and found correct.  
 MEUGENS, KING & SIMSON,  
*Auditors.*

## STATEMENT

### *Personal*

Dr.

		Rs.	As.	P.		Rs.	As.	P.
To Balance from last report	...				...	3,920	12	11
TO CASH EXPENDITURE.								
Advances for purchase of Sanskrit Manuscripts, &c.	...				...	830	6	3
To Asiatic Society	...	7,935	6	6				
„ Oriental Publication Fund	...	1,393	10	6				
„ Sanskrit Manuscript Fund	...	3	0	0				
						9,332	1	0
Total Rs.	...					14,083	4	2

## STATEMENT

### *Invest*

Dr.

		Nominal.			Actual.		
		Rs.	As.	P.	Rs.	As.	P.
To Balance from last report	...	1,64,300	0	0	1,65,010	15	2
„ Cash	...	...			15	10	0
Total Rs.	...	1,64,300	0	0	1,65,026	9	2

FUNDS.*	PERMANENT.						TEMPORARY.						TOTAL OF ACTUALS.		
	Nominal.			Actual.			Nominal.			Actual.					
	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.
Asiatic Society ...	1,41,900	0	0	1,41,644	0	0	16,100	0	0	17,207	4	1	1,58,847	4	1
Trust Fund ...	1,300	0	0	1,295	12	9	...	...	...	...	...	...	1,295	12	9
	1,43,200	0	0	1,42,935	12	9	16,100	...	...	17,207	4	1	1,60,143	0	10

No. 4.

*Account.*

Cr.

				Rs.	As.	P.	Rs.	As.	P.
By Cash Receipts	...	...	...	...	...	...	8,767	9	1
„ Asiatic Society	...	...	...	338	4	0			
„ Oriental Publication Fund	...	...	...	0	12	0			
„ Sanskrit Manuscript Fund	...	...	...	261	3	6			
				<hr/>			600	3	6

By Balance.	Due to the Society.			Due by the Society.		
	Rs.	As.	P.	Rs.	As.	P.
Members	4,934	2	4	89	7	0
Subscribers	...	...	...	93	12	0
Employes	30	0	0	350	0	0
Agents	169	2	6	...	...	...
Miscellaneous	250	5	2	134	15	5
	<hr/>			<hr/>		
	5,383	10	0	668	2	5

... 4,715 7 7

Total Rs. ... 14,083 4 2

G. W. KÜCHLER,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
MEUGENS, KING & SIMSON,  
Auditors.

No. 5.

*ment.*

Cr.

				Nominal.		Actual.	
				Rs.	A. P.	Rs.	A. P.
By Cash	...	...	...	5,000	0 0	4,883	8 4
„ Balance *	...	...	...	1,59,300	0 0	1,60,143	0 10
				<hr/>		<hr/>	
Total Rs.				1,64,300	0 0	1,65,026	9 2

G. W. KÜCHLER,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
MEUGENS, KING & SIMSON,  
Auditors.

STATEMENT  
*Trust*

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Dr.

						Rs.	A.	P.
To Pension	...	...	...	...	...	44	0	0
„ Balance	...	...	...	...	...	1,344	11	10
Total Rs.						1,388	11	10

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STATEMENT  
*Cash*

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Dr.

						Rs.	A.	P.
To Balance from last report	...	...	...	...	...	2,786	10	5
RECEIPTS.								
To Asiatic Society	...	...	...	...	...	11,013	11	2
„ Oriental Publication Fund	...	...	...	...	...	10,475	7	5
„ Sanskrit Manuscripts Fund	...	...	...	...	...	3,206	0	0
„ Personal Account	...	...	...	...	...	8,767	9	1
„ Trust Fund	...	...	...	...	...	45	8	0
„ Investments	...	...	...	...	...	4,883	8	4
Total Rs.						41,178	6	5

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STATEMENT  
*Balance*

---

Dr.

						Rs.	A.	P.
To Cash	...	...	...	...	...	2,083	0	10
„ Investments	...	...	...	...	...	1,60,143	0	10
„ Personal Account...	...	...	...	...	...	4,715	7	7
Total Rs.						1,66,941	9	3

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No. 6.

*Fund.*

Cr.

				Rs.	A.	P.
By Balance from last report	...	...	...	...	1,343	3 10
„ Interest on Investments	...	...	...	...	45	8 0
Total Rs.				...	1,388	11 10

G. W. KÜCHLER,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
MEUGENS, KING & SIMSON,  
Auditors.

No. 7.

*Account.*

Cr.

EXPENDITURE.

				Rs.	A.	P.
By Asiatic Society	...	...	...	...	24,861	0 2
„ Oriental Publication Fund	...	...	...	...	10,293	4 2
„ Sanskrit Manuscripts Fund	...	...	...	...	3,051	1 0
„ Personal Account	...	...	...	...	830	6 3
„ Trust Fund	...	...	...	...	44	0 0
„ Investments	...	...	...	...	15	10 0
Balance				...	2,083	0 10
Total Rs.				...	41,178	6 5

G. W. KÜCHLER,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
MEUGENS, KING & SIMSON,  
Auditors.

No. 8.

*Sheet.*

Cr.

				Rs.	A.	P.
By Asiatic Society	...	..	...	...	1,47,205	1 1
„ Oriental Publication Fund	...	...	...	...	12,739	13 9
„ Sanskrit Manuscripts Fund	...	...	...	...	5,651	14 7
„ Trust Fund	...	...	...	...	1,344	11 10
Total				...	1,66,941	9 3

G. W. KÜCHLER,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
MEUGENS, KING & SIMSON,  
Auditors.

*List of all Societies, Institutions, &c., to which the Publications of the Asiatic Society have been sent during the year, or from which publications have been received.*

\* Societies, &c., which have received the Asiatic Society's publications, and have sent their publications in return.

† Societies, &c., which have received the Asiatic Society's publications, but have sent none in return.

§ Societies, &c., whose publications have been received, but to which none have been sent in return.

\* Adelaide:—Royal Geographical Society of Australasia.

§ Alger:—Société de Géographie d' Alger.

\* Allahabad:—Editor, *Pioneer*.

† Amsterdam:—Royal Zoological Society.

† ———:—Koninklijke Akademie van Wetenschappen.

† Angers:—Société d' Etudes Scientifiques d' Angers.

\* Baltimore:—Johns Hopkins University.

§ Barcelona:—Real Academia de Ciencias y Artes de Barcelona.

\* Batavia:—Society of Arts and Sciences.

\* ———:—Kon. Natuurkundige Vereeniging in Nederlandsch-Indië.

§ Bellary:—Editor, *Astrological Magazine*.

§ Berlin:—Entomologische Verein.

† ———:—Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte.

\* ———:—Gesellschaft Naturforschende Freunde zu Berlin.

\* ———:—Royal Academy of Sciences.

§ ———:—Zoologische Sammlung des Museums für Naturkunde in Berlin.

† Berne:—Société Suisse d' Entomologie.

\* Bombay:—Bombay Anthropological Society.

† ———:—Bombay Branch, Royal Asiatic Society.

\* ———:—Editor, *Indian Antiquary*.

\* ———:—Natural History Society.

† Bonn:—University of Bonn.

† Bordeaux:—L' Académie Nationale des Sciences, Belles-Lettres et Arts.

\* ———:—Société Linnéenne.

\* Boston:—American Philological Association.

\* ———:—Natural History Society.

§ ———:—American Oriental Society.

\* Brisbane:—Royal Society of Queensland.

§ ———:—Queensland Museum.

- † Brookville :—Society of Natural History.  
 \* Brunswick :—Verein für Naturwissenschaft.  
 \* Brussels :—L' Académie Royal des Sciences.  
 † ——— :—Musée Royal d' Histoire Naturelle de Belgique.  
 \* ——— :—Société Entomologique de Belgique.  
 † ——— :—La Société Royal Malacologique de Belgique.  
 \* ——— :—Société Royale des Sciences de Liége.  
 † Budapest :—Hungarian Central Bureau for Ornithological Observations.  
 \* ——— :—Royal Hungarian Academy of Sciences.  
 § ——— :—Editor, *Aquila*.  
 \* Buenos Ayres :—National Museum.  
 † ——— :—Academia National de Ciencias de la Republica Argentina.  
 § Buffalo :—Buffalo Society of Natural Sciences.  
 \* Caen :—Société de Linnéenne de Normandie.  
 † Calcutta :—Agri-Horticultural Society of India.  
 \* ——— :—Geological Survey of India.  
 \* ——— :—Editor, *Englishman*.  
 § ——— :—Editor, *Indian and Eastern Engineer*.  
 \* ——— :—Editor, *Indian Daily News*.  
 § ——— :—Editor, *Indian Engineering*.  
 \* ——— :—Editor, *Indian Mirror*.  
 § ——— :—Editor, *Indian Lancet*.  
 \* ——— :—Indian Meteorological Department.  
 \* ——— :—Indian Museum.  
 § ——— :—Mahabodhi Society.  
 § ——— :—Microscopical Society.  
 § ——— :—Photographic Society of India.  
 \* ——— :—Royal Botanic Gardens.  
 \* ——— :—Survey of India.  
 \* ——— :—Tuttobodhini Shova.  
 § ——— :—Editor, *Wealth of India*.  
 \* ——— :—University Library.  
 \* Cambridge :—University Library.  
 \* Cape Town :—South African Museum.  
 § ——— :—South African Philosophical Society.  
 † Cassel :—Die Verein für Naturkunde.  
 \* Cherbourg :—Société Nationale des Sciences Naturelles.  
 \* Chicago, Ill. :—Editor, *American Antiquarian and Oriental Journal*.  
 \* ——— :—Field Columbian Museum.  
 \* Christiana :—University Library.  
 \* Colombo :—Ceylon Branch, Royal Asiatic Society.

- \* Copenhagen:—La Société Royale des Antiquaires du Nord.  
 † Cuttack:—Cuttack Library.  
 \* Danzig:—Naturforschende Gesellschaft.  
 \* Dehra Dun:—Great Trigonometrical Survey.  
 § Dorpat:—Naturforscher-Gesellschaft.  
 \* Dresden:—Entomologischer Verein "Iris."  
 † ———:—Königlich Zoologisches und Anthropologisch-Ethnographisches Museum zu Dresden.  
 \* Dublin:—Royal Dublin Society.  
 \* ———:—Royal Irish Academy.  
 \* Edinburgh:—Royal Society.  
 § ———:—Royal Physical Society.  
 † ———:—Scottish Geographical Society.  
 \* Florence:—Società Italiana di Anthropologia, Etnologia e Piscologia Comparata.  
 † ———:—Società Africana d'Italia.  
 \* Frankfurt:—Senckenbergische Naturforschende Gesellschaft.  
 \* ———:—Naturwissenschaftlicher Verein des Reg.-Bez. Frankfurt.  
 \* Geneva:—Société de Physique et d'Histoire Naturelle.  
 † Genoa:—Museo Civico di Storia Naturale.  
 † Giessen:—Oberhessische Gesellschaft für Natur und Heilkunde.  
 \* Graz:—Naturwissenschaftlicher Verein für Styria.  
 \* Hagne:—Köninklijh Instituut voor de Taal- Land-en Volkenkunde van Nederlansch-Indië.  
 \* ———:—Netherlands Entomological Society.  
 \* ———:—The State Archives.  
 \* Hamburgh:—Naturhistorisches Museum zu Hamburgh.  
 \* ———:—Naturwissenschaftlicher Verein.  
 § Halifax:—Nova Scotian Institute of Science.  
 † Halle:—Deutsche Morgenländische Gesellschaft.  
 \* ———:—Kaiserliche Leopoldinisch-Carlinische Akademie.  
 † Hamilton (Canada):—Hamilton Association.  
 \* Havre:—Société de Géographie Commerciale du Havre.  
 † Helsingfors:—Societas pro Flora et Fauna Fennica.  
 \* ———:—Société Finno Ougrienne.  
 \* ———:—Société des Sciences de Finlande  
 § Indianapolis, Ind.:—Indiana Academy of Science.  
 § Kiel:—Naturwissenschaftliche Vereins für Schleswig-Holstein.  
 † Kiew:—Société des Naturalistes.  
 \* Königsberg:—Die Physikalische-Oekonomische Gesellschaft.  
 † La Plata:—Museo de La Plata Republica Argentina.  
 Lahore:—Editor, *Civil and Military Gazette*.

- † Lahore :—Agricultural Society.
- \* Lawrence, Kansas :—Kansas University.
- § Leipzig :—Deutsche Morgenländische Gesellschaft.
- § ——— :—Die K. Sächsische Gesellschaft der Wissenschaften.
- † Leyden :—Royal Herbarium.
- \* Liège :—Société Géologique de Belgique.
- † Liverpool :—Literary and Philosophical Society.
- \* London :—Anthropological Institute.
- \* ——— :—Editor, *Academy*.
- \* ——— :—Editor, *Athenæum*.
- \* ——— :—British Museum.
- \* ——— :—Geological Society.
- \* ——— :—Institution of Civil Engineers.
- \* ——— :—Institution of Electrical Engineers.
- \* ——— :—Institution of Mechanical Engineers.
- \* ——— :—Editor, *Nature*.
- \* ——— :—Linnean Society.
- § ——— :—Editor, *Psychological Review*.
- \* ——— :—Royal Asiatic Society of Great Britain and Ireland.
- \* ——— :—Royal Astronomical Society.
- \* ——— :—Royal Geographical Society.
- \* ——— :—Royal Institution of Great Britain.
- \* ——— :—Royal Microscopical Society.
- \* ——— :—Royal Society.
- § ——— :—Editor, *Science Progress*.
- \* ——— :—Statistical Society.
- \* ——— :—Zoological Society.
- † Lyons :—La Société d' Agriculture, d' Histoire Naturelle et des Arts Utiles.
- † ——— :—Muséum d' Histoire Naturelle.
- \* ——— :—La Société d' Anthropologie.
- § ——— :—La Société d' Agriculture Sciences et Industrie.
- \* Madison, Wis. :—Wisconsin Academy of Sciences, Arts and Letters.
- † Madras :—Literary Society.
- \* ——— :—Government Central Museum.
- § ——— :—Editor, *Indian Journal of Education*.
- \* Melbourne :—Royal Society of Victoria.
- \* Manchester :—Literary and Philosophical Society.
- \* Massachusetts :—Tufts College.
- \* Mexico :—Sociedad Científica "Antonio Alzate."
- § ——— :—Instituto Geológico de México.
- § Montevideo :—Museo Nacional de Montevideo.

- \* Moscow :—Société Imperiale des Naturalistes.
- \* Munich :—K. Bayerische Akademie der Wissenschaften.
- \* Nantes :—Société des Sciences Naturelles de L' ouest de la France.
- † Naples :—Società Africana d' Italia.
- † New Haven :—Connecticut Academy of Arts and Sciences.
- § ——— :—Yale University.
- † Newport (R. I.) :—Natural History Society.
- \* New York :—American Museum of Natural History.
- \* Ottawa :—Geological and Natural History Survey of the Dominion of  
Canada.
- § ——— :—Ottawa Literary and Scientific Society.
- § ——— :—Royal Society of Canada.
- † Oxford :—Bodleian Library.
- † ——— :—Indian Institute.
- § Para, Brazil :—Museu Paraense.
- \* Paris :—Société de Géographie.
- \* ——— :—Société d' Anthropologie.
- \* ——— :—Asiatic Society.
- § ——— :—Société Philomathique de Paris.
- \* ——— :—Musée Guimet.
- † ——— :—National Library.
- \* ——— :—Société Zoologique.
- † ——— :—Société Académique Indo-Chinoise.
- \* ——— :—Muséum d' Histoire Naturelle.
- \* Pennsylvania :—University of Pennsylvania.
- § ——— :—Free Museum of Science and Art.
- \* Philadelphia :—Academy of Natural Sciences.
- § ——— :—American Academy of Political and Social Science.
- \* ——— :—American Philosophical Society.
- § ——— :—Franklin Institute.
- † ——— :—Editor, *Journal of Comparative Medicine and Surgery*.
- \* Pisa :—Société Toscana di Scienze Naturali.
- § Prague :—K. K. Sternwarte.
- § Rio de Janeiro :—Museu Nacional do Rio de Janeiro.
- § Rome :—Revista Geografica Italiani.
- \* ——— :—Società degli Spettroscopisti Italiani.
- § Roorkee :—Editor, *Indian Forester*.
- § St. Louis :—Academy of Science of St. Louis.
- \* St. Petersburg :—Comité Géologique.
- † ——— :—Imperial Library.
- \* ——— :—Russian Geographical Society.
- \* ——— :—Académie Impériale des Sciences.
- \* ——— :—Horti Petropolitani.

- § St. Petersburg:—Die Russisch-Kaiserliche Mineralogische Gesellschaft zu St. Petersburg.
- \* San Francisco:—Californian Academy of Arts and Sciences.
- § Schaffhausen:—Swiss Entomological Society.
- \* Shanghai:—China Branch, Royal Asiatic Society.
- \* Simla:—United Service Institution of India.
- † Stettin:—Entomological Society.
- \* Stockholm:—Entomologische Tidskrift.
- \* ———:—Royal Swedish Academy of Sciences.
- \* Stuttgart:—Der Verein für vaterländische Naturkunde in Württemberg.
- \* Sydney:—Royal Society of New South Wales.
- † ———:—Anthropological Society of Australia.
- \* ———:—Linnean Society of New South Wales.
- § Taiping:—Government of Perak.
- \* Toronto:—Canadian Institute.
- § ———:—Astronomical and Physical Society of Toronto.
- \* Tokyo:—Imperial University of Japan.
- § Trenesen:—Naturwissenschaftliche Vereines.
- † Trieste:—Société Adriatica de Scienze Naturale.
- † ———:—Museo Civico di Storia Naturale.
- \* Tring: Zoological Museum.
- \* Turin:—Reale Accademia delle Scienze.
- † Ulwar:—Ulwar Library.
- \* Upsala:—University of Upsala.
- \* Vienna:—Anthropologische Gesellschaft.
- \* ———:—K. K. Akademie der Wissenschaften.
- \* ———:—K. K. Geologische Reichsanstalt.
- \* ———:—K. K. Naturhistorische Hofmuseum.
- \* ———:—Ornithologische Verein in Wien.
- \* ———:—K. K. Zoologisch-Botanische Gesellschaft.
- § Washington:—Biological Society of Washington.
- \* ———:—Commissioners of the Department of Agriculture.
- \* ———:—Smithsonian Institution.
- \* ———:—United States Geological Survey.
- § ———:—United States National Museum.
- \* Wellington:—New Zealand Institute.
- \* ———:—Polynesian Society.
- \* Yokohama:—Asiatic Society.
- \* ———:—Deutsche Gesellschaft für Natur und Völkerkunde Ostasiens.
- \* Zagreb:—Archæological Society.
- \* Zurich:—Naturforschende Gesellschaft.











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