

PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL

EDITED BY

THE HONORARY SECRETARIES,



JANUARY TO DECEMBER,  
1891.



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**PROCEEDINGS**  
**OF THE**  
**ASIATIC SOCIETY OF BENGAL.**

FOR JANUARY, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 7th January 1891, at 9 P. M.

H. BEVERIDGE, Esq., C. S., President, in the chair.

The following members were present :—

Bábu Nobin Chandra Burál, Bábu Gaurdás Bysack, Bábu Saratchandra Dás, P. Donaldson, Esq., Maulví Golám Sarwar, Bábu Jogendrachandra Ghose, Bábu Rajanikánta Gupta, F. G. Hickson, Esq., Dr. W. King, C. J. Lyall, Esq., R. D. Mehta, Esq., Bábu Asutosh Mukhopádhyaý, T. R. Munro, Esq., A. Pedler, Esq., Dr. D. Prain, W. L. Sclater, Esq., Pandit Haraprasád Shástri.

The Minutes of the last meeting were read and confirmed.

Forty presentations were announced, details of which are given in the Library List appended.

The following gentlemen are candidates for election at the next meeting :

Hon. Lala Bunbehari Kuppur, Manager, Burdwan Raj, proposed by H. Beveridge, Esq., seconded by Asutosh Mukerjee.

Duncan J. Macpherson, Esq., C. S., proposed by Babu Haraprasád Shástri, seconded by Dr. Crombie.

The following gentlemen have expressed their wish to withdraw from the Society :

F. S. Growse, Esq., C. S.

A. O. Hume, Esq., C. S.

The PRESIDENT announced that Lieut. Petley had kindly presented to the Society the old gun containing an inscription recently dug up at False Point, a description of which was published in the Proceedings for May 1890, together with the carriage on which it has been recently mounted. The gun has been placed in the Society's grounds on the west side of the building.

The SECRETARY read a letter from the Government of Bengal conveying approval to the manner in which the Government grants-in-aid of the Oriental Publication Fund, and the Sanskrit Manuscript Fund were applied during the year 1889.

The PRESIDENT read a translation of a Sanad said to have been granted by Akbar to Heer Bijoy Suri, an Acharj of the Jains, for Girnar, Mount Abu, Parisnath, &c. It was dated 7th Ardi Bihisht or Rabi-al-awal of the 37th year of the reign (1593). The President said that he offered no opinion about the genuineness of the document, but it certainly was in Akbar's style, as recorded by Abul Fazl. The Sanad has been produced in the case about Parisnath which is now pending on appeal before the High Court. It is said to have been first produced about 1867. The President had thought it right to notice the document because, if genuine, it was a very interesting one, and it might be lost sight of if not now referred to. Professor Bühler's paper in the *Epigraphia Indica*, Part VI, p. 321, shows Akbar's inclination towards Jainism. He is there said to have granted a firman to Jinachandra Súri.

The PRESIDENT exhibited rubbings of an inscription of Ghiyásu-d-dín Balban (A. H. 664—686, A. D., 1265—1237). The inscription,\* which consists of four lines in relief, originally stood over the gateway of a dismantled fort at Manglaur in the Saharanpur district, N.-W. P., and is now placed in the Khángáh of Makhdúm Sháh Wiláyat at the same place. Manglaur is the chief town of the pargana of the same name, distant 6 miles due south from Rurki, and 16 miles south-east from Saharanpur. It is chiefly inhabited by Muhammadan *juláhas* (weavers), and is a poor place, having suffered much from fever since the water-level of the country was raised by the Ganges Canal. An imperfect copy of the inscription was sent by Mr. W. Irvine, C. S., Magistrate of the District, in February 1887, and the rubbings now produced were subsequently obtained by Dr. Hoernle.

The inscription is imperfect, and therefore difficult to read and

\* This account has been kindly drawn up by Mr. C. J. Lyall, C. I. E.

translate. The initial portion of each of the four lines, which no doubt occupied a slab to the right, is wanting, and something also appears deficient at the end of the third line. The following is the text :

الش [ منشأه الاعظم غياث الدنيا و الدين ابوالمظفر  
له وسلطانه في نوبة اياته ملك ملوك الشرق والصين  
دفاص دام علوه امر هذه العمارة الامين السهتساء  
ع العاشر من شهر الله الاصم رجب سنة ثلاث وثمانين وستمائة

(1.) "The mighty Shahansháh Ghiyásu-d-dunyá wa-d-dín, father of the Victorious

(2.) [May God perpetuate his glory] and his rule : in the time of the governorship of the King of the Kings of the East and China

(3.) \* \* \* (May his lofty dignity be eternal !) the Shahansháh gave the order for (the erection of) this secure building

(4.) On the tenth of the silent month of God, Rajab, in the year 683."

Only two other inscriptions of Balban have yet been described. One is on the walls of the Jámi' Masjid at Garhmuktesar in the Meráth district, and is dated 682. Its text will be found at p. 136 of Mr. E. Thomas's "Pathán Kings of Delhi." In it the king is styled

السلطان الاعظم شانشاء (الشهتساء) المعظم غياث الدنيا و الدين ابوالمظفر بلبن  
السلطان ناصر امير المؤمنين

The other is the inscription on the Minár of Koil (now preserved in the Aligarh Institute, N.-W. P.) of which a facsimile and reading are given at p. 129 of the same work. The translation of a more correct reading, furnished by Mr. Blochman, will be found at p. 486 of the late Mr. E. T. Atkinson's Statistical Account of the Aligarh District (Vol. II of his "Statistical, Descriptive and Historical Account of the N.-W. Provinces of India.") The latter, which is dated 10th Rajab 652, was set up during the reign of the preceding king, Náṣiru-d-dín Mahmúd, whose minister and brother-in-law Balban was. The Aligarh inscription also contains the curious expression, applied therein to Balban though he was then only the king's deputy (Náibu-s-saltānah), "*maliku mulúki-sh-sharqi wa-ṣ-Ṣín*"—"King of the kings of the East and of China"—which occurs in the second line of the Manglaur inscription.\* In the latter it probably also refers, as is indicated by the words *في نوبة اياته*,

\* This expression is used by the Arabic historians and geographers with reference to Alexander's conquests in Asia ; see, e. g., Ḳazvini's geography (ed. Wüstenfeld) s. v. Herát. It amounts, therefore, in an inscription like the present, to a description of the person named as "the Alexander of his age."

to a Deputy, not the king himself—perhaps to his much-loved eldest son Muhammad Sulṭán, called Khán-i-Shahíd, who fell fighting against the Mughals at Lahor in the following year 684. This prince was Governor of Multán during the later years of his life, but exercised authority over the whole of the western portion of the Empire during Balban's absence in Bengal in the operations against Tughrul Khán.

The word of which a fragment occurs at the beginning of the second line may be either *جلاله* or *ملكه*. The commencement of the third line is not legible without a knowledge of what comes before. The group of letters may be *دس فادام* instead of as printed above. The construction of the *امر* is faulty; we should expect *امر ببناء هذيع* or *امر بهذيه - الامين*. It is perhaps a mistake of the stone-cutter for *الامير*, but the dot of the *ن* is clear. *امين*, as a participial adjective with a passive signification of the form *فعل*, may be appended in the masculine form to a feminine noun. The word *الشه نشاء* is doubtful. The *ز*, which is placed above the second *س*, looks more like *لا*, which, however, gives no sense. Neither of the *س* is pointed, and the *ن* seems to be written before instead of after the first *ه*. The word of which there is a fragment at the beginning of the fourth line is probably *التاريخ*, only *ع* being visible. The name *لامس*, "the deaf and dumb," given to the sacred month of Rajab is an old epithet of Arabian paganism, indicating that in that month (which stands by itself alone in the midst of the Arabian year, the other three sacred months being consecutive) the noise of battle is never heard.

The alterations in the Rules which had been proposed by Council were brought up for discussion. A letter from Rájá Rájendralála Mitra strongly objecting to the alterations was read, and then remarks were made by several members. Dr. W. King supported Rájá Rájendralála Mitra's objections, and Messrs. Mehta and Donaldson and Bábus Asutosh Mukharjia, Gaurdás Bysack, Jogendrachunder Ghose, Rajinikánta Gupta and Nobin Chundra Burál spoke against the proposals to increase the subscriptions and to substitute annual for quarterly payments. Messrs. Munro, Sclater and Pedler approved of the proposal to increase the subscriptions. The alterations were then put to the vote, one by one, with the following result:

|      |                          | For. | Against           | Result.   |
|------|--------------------------|------|-------------------|-----------|
| I.   | Alteration of Rule 2 (a) | 1    | All other present | Rejected. |
| II.  | do. Rule 14 (c)          | 5    | 6                 | Rejected. |
| III. | do. Rule 16              | 3    | 7                 | Rejected. |

|       |     |                                      | <i>For.</i>                                                                                              | <i>Against.</i> | <i>Result.</i> |
|-------|-----|--------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------|----------------|
| IV.   | do. | Rule 17                              | 4                                                                                                        | 8               | Rejected.      |
| V.    | do. | Rules 18, 19, 22                     |                                                                                                          |                 | Rejected.      |
| VI.   | do. | Rule 24                              | Unanimously agreed to.                                                                                   |                 | Carried.       |
| VII.  | do. | Rule 25                              |                                                                                                          | do.             | do.            |
| VIII. | do. | Rule 28                              |                                                                                                          | do.             | do.            |
| IX.   | do. | Rules 32 and 35                      |                                                                                                          |                 | Rejected.      |
| X.    | do. | Rule 37                              | First alteration rejected, second alteration whereby six months are altered into two months was carried. |                 |                |
| XI.   | do. | Rules 38 and 39                      |                                                                                                          |                 | Carried.       |
| XII.  | do. | Rules 20, 21, 26, 27, 29, 30, 31, 40 |                                                                                                          |                 |                |

The abolition of Rules 26 and 27 was carried.

The proposal to abolish Rules 21, 29, 31, 32 and 40 was rejected.

The President stated that the result of the voting would be reported to the Council who would consider what further steps should be taken.

The following papers were read :—

1. *On an inscription of the 7th Century A. D. relating to the reigning family of Meywar, found at Kundâ near Udaipur.* By MAHÁMAHO-PÁDHYÁ KAVIRÁJA SHYAMALDÁS, M. R. A. S., F. R. H. S., (with an ink impression and photograph).

2. *Notes on some of the Muhammadan coins collected by the Afghan Boundary Commission, from an historical point of view.* By MAJOR H. G. RAVERTY. Communicated by H. BEVERIDGE, Esq., C. S.

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

3. *Description of a two Cowrees piece, the lowest denomination of the Hindu system of Copper Coinage.*—By W. THEOBALD, Esq. Communicated by DR. W. KING.

Among the coins dispersed lately in London, at the sale of the Da' Cunha collection was one, now in my possession, which goes far to prove the extreme minuteness of some of the copper coins, into which the unit of the whole system, the 'pana' was divided.

In the concluding chapter of General Sir A. Cunningham's 'Coins of Alexander's successors', page 18, a table is given of the subdivisions of the 'pana,' which I have reproduced, neglecting the trifling variations in weight to which copper coins are more subject than are coins of the less oxidizable metals.

In addition to the 'pana,' there are also recorded pieces of  $1\frac{1}{4}$ ,  $2\frac{1}{2}$ ,  $3\frac{1}{2}$  and 5 panas in value, the last ranging as high as 720 grains.

The 'pana' was subdivided as follows:—

|                                                             |   |            |   |             |
|-------------------------------------------------------------|---|------------|---|-------------|
| Pana or 20 ganda piece                                      | = | 80 courees | = | 140 grains. |
| $\frac{1}{2}$ " 10 " "                                      | = | 40 "       | = | 70 "        |
| $\frac{1}{4}$ " 5 " (or 'kákini')                           | = | 20 "       | = | 35 "        |
| $\frac{1}{8}$ " $2\frac{1}{2}$ " ( $\frac{1}{2}$ 'kákini')  | = | 10 "       | = | 17 5        |
| $\frac{1}{10}$ " 2 " "                                      | = | 8 "        | = | 14          |
| $\frac{1}{10}$ " $1\frac{1}{4}$ " ( $\frac{1}{4}$ 'kákini') | = | 5 "        | = | 8 75        |
| $\frac{1}{20}$ " 1 " "                                      | = | 4 "        | = | 7           |

In this table no smaller coin is mentioned than the twentieth part of a 'pana,' of 7 grains weight and the value of four cowrees, but in General Cunningham's paper on the coins of the Nine Nāgas, in the Journal of the Asiatic Society of Bengal for 1865, page 115, reference is made to a coin of  $4\frac{1}{2}$  grains, but from the context it would appear to be a worn specimen, as it is regarded as a quarter 'kákini,' the mean weight of which is taken as 7 grains. These quarter 'kákinis' are, it may be well to remember, round coins, whose weight, especially in the smaller denominations, is less easy to adjust with accuracy, than in the case of square coins, and whose value is too trivial to render such accuracy important.

The coin now under consideration is square, quite unworn and in excellent preservation, and weighs 4·5. It is symmetrically shaped, and each side measures 0·25 of an inch. From its weight I was at first inclined to regard it as the eighth part of a kákini or the equivalent of  $2\frac{1}{2}$  courees, but Sir Alexander Cunningham, whom I consulted, is of opinion, it is rather the fortieth part of a 'pana' or two couree piece 'that division being more likely than one involving the fractional part of a couree. The highest weight of the pana is 144 grains, so that the calculated weight of  $\frac{1}{40}$  of a pana should be no more than grains 3·6 which makes the piece under consideration not quite one grain in excess, but as before remarked, in such minute pieces exactness can hardly be looked for, and the present piece is in exceptional preservation. Four pieces in Sir Alexander's cabinet from Eran weigh no more than 12 grains, ranging between 2·75 to 3·75 grains, so that it may fairly be concluded, that a two couree piece of the ideal weight of 3·6 grains was a recognised issue of the Eran and Ujain mints. The obverse displays part of two circles, which in all probability constitute a portion of the symbol of Ujain, sometimes called the 'four-balled chakra', consisting of four circles usually united by a cross. There is also a circle, or wheel, surmounted by two 'chattras' a symbol analo-

gous to the 'broad arrow' of the present day, and it does not seem that more were ever represented on the 'die' though three and seven of these 'broad arrow's or 'chattras' are more commonly represented on this symbol on the punch-marked coins, which were the prototypes of the later issues of Ujain. There is yet another symbol of two semi-circles, symmetrically united by their convex surfaces, but whether this is but a portion, owing to want of space on the die, of the common symbol of a 'chaitya' surmounted by a crescent, which is so common on punch-marked coins, or a symbol complete in itself, is not easy to say. These symbols stand out in fair relief, and the 'die' was evidently proportioned to the size of the coin. The square shape of the coin is a proof that its weight was intentionally fixed, as the weight would, it is clear, depend on the width of the 'ribbon' of copper, from which the blanks were cut, for the coin is a die struck coin, and not cast in a mould like so many of the early Buddhist coins. The reverse is blank, which seems to point to its being an early issue, after the fashion of the Elephant and Lion coins of Taxila.

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LIBRARY.

The following additions have been made to the Library since the meeting held in December last.

—————

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

- Amsterdam. Der Koninklijke Akademie van Wetenschappen,—Jaarboek, 1889.
- . ————. Verslagen en Mededeelingen, Afdeeling Letterkunde. Deel VI.
- . ————. ————. Afdeeling Natuurkunde, Deel VI—VII.
- Baltimore. Johns Hopkins University,—Circulars, Vol. X, No. 83.
- Birmingham. Birmingham Philosophical Society,—Proceedings, Vol. VII, Part 1.
- Bombay. The Indian Antiquary,—Vol. XIX, Parts 240—241.
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- . ————. Procès Verbal, 3 Août-7 Décembre 1889.
- . ————. Procès-Verbaux des Séances, 4 Janvier—2 Août 1890.

- Calcutta. Indian Engineering,—Vol. VIII, Nos. 23—26, Vol. IX, No. 1 and Index to Vol. VII.
- . Photographic Society of India,—Journal, Vol. III, No. 12 and Vol. IV, No. 1.
- Dresden. Gesellschaft Iris zu Dresden,—Deutsche Entomologische Zeitschrift, Jahrgang 1889-90, Zweites Lepidopterologisches Heft, Band III, No. 1.
- Edinburgh. The Scottish Geographical Society,—Magazine, Vol. VI, Nos. 9—10.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Septembre—Octobre 1890.
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- London. Institution of Civil Engineers,—Minutes of Proceedings, Vol. CII and Brief Subject Index, Vols. LIX to CII.
- . Institution of Mechanical Engineers,—Proceedings, No. 2, 1890.
- . Nature,—Vol. XLIII, Nos. 1099—1102.
- . Royal Geographical Society,—Proceedings, Vol. IX, Nos. 9 and 10.
- . Royal Microscopical Society,—Journal, Parts 4 and 5, 1890.
- . Royal Society,—Proceedings, Vol. XLVIII, No. 294.
- . Royal Statistical Society,—Journal, LIII, Part 3.
- . The Academy,—Nos. 968—970.
- . The Athenæum,—Nos. 3291—3294.
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- Manchester. Manchester Literary and Philosophical Society,—Memoirs and Proceedings, Vol. III.
- Mendon, Ill. The American Antiquarian and Oriental Journal,—Vol. XII, No. 6.
- Mexico. La Sociedad Científica “Antonio Alzate,”—Memorias, Tome IV, Nos. 1—2.
- Munich. Der. K. C. Akademie der Wissenschaften zu München,—Abhandlungen, Historischen classe. Band XIX, Aht 2.
- . ———. Sitzungsberichte, Mathematischphysikalischen classe, Heft III, 1889.
- . ———. Philosophisch-philologischen und Historisches classe, Band II, Heft 2 und Heft 1, 1890.
- . ———. Almanach, 1890.
- Naples. La Società Africana D' Italia,—Bollettino, Anno IX, Fasc. 7—10.
- Paris. Société Asiatique,—Journal Asiatique,—Tome, XV, No. 3.



- Paris. La Société Zoologique de France,—Bulletin, Tome. XV, No. 7.  
 Philadelphia. The Journal of Comparative Medicine and Veterinary Archives, Vol. IX, No. 11.  
 Shanghai. China Branch of the Royal Asiatic Society,—Journal, Vol. XXIV.  
 St. Petersburg. L' Académie Impériale des Sciences de St. Pétersbourg,—Mémoires, Tome XXXVII, Nos. 8—10.  
 Taiping. Government of Perak.—The Perak Government Gazette, Vol. III, Nos. 32—34.  
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 ———. ———. Verhandlungen, Nrn. 10—13, 1890.  
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### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- HAYTEB, H. H. Victorian Year-book for 1889-90. Vol. I. 8vo. Melbourne, 1890.  
 PICO, M. PUGLISI. Consigli ai Cattivi Poeti. Poema Indostanico. 8vo. Palermo, 1891.  
 RÁY, PRATÁPA CHANDRA, C. I. E. The Mahábháráta, translated into English Prose, Part LXIII. Canti Parva. 8vo. Calcutta, 1890.

### MISCELLANEOUS PRESENTATIONS.

- Griechische Münzen. Neue Beiträge und Untersuchungen von F. Imhoof-Blumer. (Abhandlungen der bayer Akademie der Wiss, 1 Cl. XVIII, Bd. III, Abth). 4to München, 1890.  
 AKADEMIE DER WISSENSCHAFTEN, MUNICH.  
 A Guide to the Exhibition Galleries of the department of Geology and Palæontology in the British Museum (Nat. Hist.). Part I, Fossil Mammals and Birds; Part II, Fossil Reptiles, Fishes, and Invertebrates. 8vo. London, 1890.  
 Catalogue of the Birds in the British Museum, Vol XIII, Sturniformes, containing the families Artamidæ, Sturnidæ, Ploceidæ, Alaudidæ, also the families Atrichiidæ and Menuridæ. By R. Bowdler Sharpe. 8vo. London, 1890.  
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Catalogue of Fossil Reptilia and Amphibia in the British Museum (Nat. Hist.) Part IV. Containing the Orders Anomodontia, Ecaudata, Caudata, and Labyrinthodontia; and Supplement. By Richard Lydekker, B. A., F. G. S. 8vo. London, 1890.

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Thirty-sixth Annual Report of the Library Syndicate of the Cambridge University. 4to. Cambridge, 1890.

CAMBRIDGE UNIVERSITY.

Report on the Administration of the Central Provinces for the year 1889—90. By A. Mackenzie, C. S. I., C. S. Chief Commissioner. Fcp. Nagpur, 1890.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Report of the Colombo Museum for 1889. Fcp. Ceylon, 1890.

COLOMBO MUSEUM, CEYLON.

Resolution reviewing the Reports on the working of the Municipalities in Bengal during the year 1889—90. Fcp. Calcutta, 1890.

GOVERNMENT OF BENGAL.

Indian Antiquary, Vol. XIX, Parts 240—241 November and December, 1890. 4to. Bombay, 1890.

Land and Freshwater Mollusca of India, Supplementary to Messrs. Theobald and Hanley's Conchologia Indica. Edited by Lt. Col. H. H. Godwin-Austen. Parts I—VI, with Plates. 8vo and 4to. London, 1882-88.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Handleiding tot de Kennis der Flora van Nederlandsch Indië. Beschrijving van de families en Geslachten der Nederl. Indische Phanerogamen, door Dr. J. G. Boerlage. Eerste Deel. Dicotyledones Dialypetalæ. Tweede Stuk. Calycifloræ.—Fam XLIII, Connaraceæ.—Fam LXVI, Cornaceæ. 8vo. Leiden, 1890.

GOVERNMENT OF NETHERLANDS INDIA, BATAVIA.

A Catalogue of Sanskrit Manuscripts existing in Oudh Provinces for the year 1888. By Paṇḍita Devi Prasāda. 8vo. Allahabad, 1890.

Report on the Horticultural Gardens, Lucknow, for the year ending 31st March 1890. Fcp. Allahabad, 1890.

GOVERNMENT OF N.-W. P. AND OUDH.

Progress Report of the Archæological Survey, Madras, from July to September, 1890. By Mr. A. Rea. Fcp. Madras, 1890.

GOVERNMENT OF MADRAS.

Proceedings and Transactions of the Royal Society of Canada for the year 1889. Vol. VII. 4to. Montreal, 1890.

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By J. W. Powell. Parts I—II. 4to. Washington, 1889.

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UNITED STATES GEOLOGICAL SURVEY, WASHINGTON.

Report by the Board of Managers of the Observatory of the Yale University for the year 1889-90. 8vo.

YALE UNIVERSITY.

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- London. The Journal of Botany,—Vol. XXXVIII, Nos. 333—334.  
 ———. The London, Edinburgh and Dublin Philosophical Magazine,  
 —Vol. XXX, Nos. 184—185.  
 ———. The Messenger of Mathematics,—Vol. XX, No. 4.  
 ———. The Nineteenth Century,—Vol. XXVIII, No. 166.  
 ———. The Numismatic Chronicle,—Vol. X, No. 39.  
 ———. The Quarterly Journal of Microscopical Science,—Vol.  
 XXXI, Part 3.  
 ———. The Quarterly Journal of pure and applied Mathematics,—  
 Vol. XXV, No. 97,  
 ———. Rhopalocera Exotica,—Part 14. October 1890.  
 ———. The Society of Arts,—Journal, Vol. XXXIX, Nos. 1983—  
 1986.  
 New Haven. The American Journal of Science,—Vol. XL, Nos. 237—  
 238.  
 Paris. L' Academie des Sciences,—Comptes Rendus des Séances,  
 Tome CXI, Nos. 7—15.  
 ———. Annales de Chimie et de Physique,—Tome XXI, Septembre et  
 Octobre 1890.  
 ———. Journal des Savants,—Août et Septembre, 1890.  
 ———. Revue Scientifique,—Tome XLVI, Nos. 21—24.  
 ———. Revue Critique d' Histoire et de Litterature,—Tome XXX, Nos.  
 34—42.  
 Philadelphia. Manual of Conchology,—Vol. XII, Part 2 and Vol VI,  
 (2nd Ser.) Part 2.

### BOOKS PURCHASED.

- DOBSON, G. E. A Monograph of the Insectivora, Systematic and Ana-  
 tomical. Part III, Fasc. I. 4to. London, 1890.



PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR FEBRUARY, 1891.

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The Annual Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th February 1891, at 9 P. M.

H. BEVERIDGE, Esq., C. S., President, in the Chair.

The following members were present :

Bábú Nobinchánd Burál, W. Connan, Esq., Hon. Sir A. W. Croft, Dr. D. D. Cunningham, Bábú Saratchandra Dás, Most Rev. Dr. Paul Goethals, Bábú Rajanikánta Gupta, Colonel H. S. Jarrett, Dr. W. King, Rev. Father E. Lafont, C. Little, Esq., C. J. Lyall, Esq., Kumár Rameswár Maliáh, Bábú Asutosh Mukopádhyáy, L. de Nicéville, Esq., J. D. Nimmo, Esq., M. H. Oung, Esq., Hon. Dr. Mahendralál Sarkár, W. L. Sclater, Esq., Pandit Haraprasád Shástri, C. H. Tawney, Esq., Dr. J. H. Tull Walsh, Colonel J. Waterhouse, J. Wood-Mason, Esq.

According to the Bye-Laws of the Society, the President ordered the Voting papers to be distributed for the election of Office-Bearers and Members of Council for 1891, and appointed Messrs. de Nicéville and Donaldson to be Scrutineers.

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

ANNUAL REPORT FOR 1890.

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The Council of the Asiatic Society have the honor 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 23 Ordinary Members were elected, 14 withdrew, 5 died, and 8 were removed from the list under Rule 40, being more than 3 years absent from India ; of the 23 Members elected 3 were old Members who rejoined. The total number of Members at the close of 1890 was thus 303 against 307 at the end of the preceding year ; of these 105 were Resident, 142 Non-Resident, 10 Foreign, 21 Life, 23 absent from India and 2 special Non-Subscribing Members, as will be seen from the following table, which also shows the fluctuations in the number 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. |              |
| 1885  | 105       | 161           | 13       | 279    | 16          | 34      | 1                        | 51     | 320          |
| 1886  | 93        | 142           | 18       | 253    | 16          | 48      | 2                        | 66     | 319          |
| 1887  | 98        | 137           | 15       | 250    | 17          | 44      | 2                        | 63     | 313          |
| 1888  | 98        | 136           | 15       | 249    | 20          | 34      | 2                        | 56     | 305          |
| 1889  | 108       | 135           | 13       | 256    | 22          | 27      | 2                        | 51     | 307          |
| 1890  | 105       | 140           | 10       | 255    | 21          | 25      | 2                        | 48     | 303          |

The five Ordinary Members the loss of whom by death during the year we have to regret, were Kumár Isvariprasád Garga, Dr. N. K. Roy, Mr. Alexander Grant (Life Member), Mr. E. F. T. Atkinson, and Mr. S. A. Hill.

There were no deaths amongst the Special Honorary Centenary Members, and only one amongst the Honorary Members ; viz., Professor Bápu Deva Sástri, C. I. E., of Benares. Their numbers now stand at 5 and 24 respectively ; being one below the normal strength.

The Corresponding Members and Associate Members remain at 7 and 8 respectively, as last year, there having been no casualties.

No Members compounded for their subscription during the year.

**Indian Museum.**

No presentations were made over to the Indian Museum.

There was only one change amongst the Trustees, caused by the resignation of Mr. E. Gay in consequence of leaving India, Mr. H. Beveridge was appointed to fill the vacant place.

The other Trustees on behalf of the Society were—

Dr. A. F. R. Hoernle.

A. Pedler, Esq.

Dr. D. D. Cunningham.

C. Little, Esq.

#### Finance.

The accounts of the Society are shown in Statement No. 1 in the appendix under the usual heads.

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

The Budget Estimate for 1890 was taken at the following figures—Receipts Rs. 13,900, Expenditure Rs. 13,840. The actual results were, Receipts Rs. 18,758 and Expenditure Rs. 21,239.

The increase in Receipts is under the heads of Subscriptions, Sales of Publications, and Interest. *Subscriptions* were estimated at Rs. 7,340, whilst the actuals were Rs. 7,740, the excess being due to the Government Subscription to the Society's publications having been realized for the two years 1889 and 1890. *Sales of Publications* show an increase of Rs. 867, owing to receipts from the sale of the extra number of the Journal, Part I, containing Mr. Grierson's "Modern Vernacular Literature of Hindustan." This was expected when the estimate was prepared, as explained in the Report for last year, but no change was made in the estimate, it not being possible to anticipate what the amount might be. *Interest on Investments* was estimated at Rs. 6,100, the actuals have been Rs. 9,349. The large increase of Rs. 3,249 has arisen from the transfer in July last of Rs. 1,20,000 of the "Permanent Reserve Fund" from the  $4\frac{1}{2}$  per cent. to the 4 per cent. loan, the Government having paid in advance the excess interest of  $\frac{1}{2}$  per cent. to September 1893 (when the loan matures), to induce holders to make the transfer; and to interest for three months having been received at 4 per cent. the payments of interest now falling due in the months of June and December, whereas under the former loan they were due in March and September.

There is also a new receipt of Rs. 300 from the Photographic Society for rent of the two rooms they occupy in the Society's building.

The expenditure has exceeded the estimate by the large sum of Rs. 7,399, of which Rs. 6,723 is on account of the Journal and Proceedings. This is due partly to the payment of Rs. 1,402 for printing Mr. Grierson's book on the "Modern Vernacular Literature of Hindustan," forming an extra number to the Journal, Part I for 1888, and partly to excess payment of Rs. 4,100 on account of the Journal, Part II, caused by the adjustment of £177 for plates charged in Trübner's account for

1888, which only came to hand in December last, and to larger payments for printing, owing to some of the Baptist Mission Press bills for 1889 not having been paid in that year. The Proceedings also show an increase of Rs. 1,150 from the same cause.

The actual expenditure on the Journal and Proceedings was as follows :—

|                       |   |                     |                  |
|-----------------------|---|---------------------|------------------|
| <i>Journal</i>        | { | <i>Part I.</i> —Rs. | 3,206            |
|                       |   | <i>Part II.</i> — „ | 6,364            |
| <i>Proceedings.</i> — |   | „                   | 2,053            |
|                       |   |                     | Total Rs. 11,623 |

against a budget provision of Rs. 4,900. There is still a sum of £48 due to Messrs. Trübner for plates for Part II supplied in 1889, which will be adjusted on receipt of their accounts for that year.

The other items of increase are of small amount, being Rs. 279 for Books. Rs. 193 for carrying out alterations in the drainage under a notice from the Municipality. Rs. 122 for printing Circulars and forms, Rs. 66 for printing the Catalogue of Tibetan Xylographs, and Rs. 35 for purchasing a copper-plate; particulars of the plate were given in the Proceedings for December 1890.

The budget estimate for the present year has been fixed as follows. Receipts Rs. 15,570. Expenditure Rs. 14,323. On the receipt side the estimate for *Subscriptions* has been raised to Rs. 7,500, in consequence of the rates of subscription to the Journal and Proceedings having been brought back to those which obtained prior to 1886, when they were lowered in the hope of causing an increase of sales. There will be the full receipt of Rs. 720 this year for rent of the two rooms occupied by the Photographic Society, and also a new item for *Admission Fees*, which has been taken at Rs. 700, these are now to be treated as Ordinary income instead of being added to the “Reserve Fund.” *Miscellaneous* has been increased by Rs. 800 in expectation of a refund of Income Tax erroneously deducted in past years from the interest on the Government Securities belonging to the Society, the Collector of Income Tax having granted a certificate that it is not liable to assessment under the Income Tax Act. The head of *Interest on Investments* has been taken on the amount now held in securities, but there will be an increase if the proposal to invest a portion of the Funds in Municipal or other Debentures bearing a higher rate of interest is carried out.

On the expenditure side the changes in last year's estimate are small. *Postage* has been increased by Rs. 100, in consequence of the Society's publications being now sent to Mofussil and Foreign Members, and



Societies &c. immediately on publication, instead of quarterly, as formerly. A small increase of Rs. 200 has been made for *Books*, and of Rs. 200 for the *Journal*. The other heads remain unaffected. No provision has been made for *Auditors Fee*, as it is proposed to revert to the former practice of having the accounts audited by two Members of the Society.

This is in accordance with rule 58 (h).

The details of the Budget Estimate are as follows:—

RECEIPTS.

|                         |     |     |     |           |        |   |   |
|-------------------------|-----|-----|-----|-----------|--------|---|---|
| Subscriptions           | ... | ... | ... | Rs.       | 7,500  | 0 | 0 |
| Sale of Publications    | ... | ... | ... | ...       | 400    | 0 | 0 |
| Interest on Investments | ... | ... | ... | ...       | 5,388  | 0 | 0 |
| Rent of rooms           | ... | ... | ... | ...       | 720    | 0 | 0 |
| Admission Fees          | ... | ... | ... | ...       | 700    | 0 | 0 |
| Miscellaneous           | ... | ... | ... | ...       | 862    | 0 | 0 |
|                         |     |     |     | Total Rs. | 15,570 | 0 | 0 |

EXPENDITURE.

|                         |     |     |     |           |        |   |   |
|-------------------------|-----|-----|-----|-----------|--------|---|---|
| Salaries                | ... | ... | ... | Rs.       | 4,390  | 0 | 0 |
| Commission              | ... | ... | ... | ...       | 400    | 0 | 0 |
| Stationery              | ... | ... | ... | ...       | 100    | 0 | 0 |
| Lighting                | ... | ... | ... | ...       | 80     | 0 | 0 |
| Petty Repairs           | ... | ... | ... | ...       | 10     | 0 | 0 |
| Municipal Taxes         | ... | ... | ... | ...       | 819    | 0 | 0 |
| Postage                 | ... | ... | ... | ...       | 700    | 0 | 0 |
| Freight                 | ... | ... | ... | ...       | 10     | 0 | 0 |
| Meeting                 | ... | ... | ... | ...       | 83     | 0 | 0 |
| Contingencies           | ... | ... | ... | ...       | 150    | 0 | 0 |
| Books                   | ... | ... | ... | ...       | 1,800  | 0 | 0 |
| Local Periodicals       | ... | ... | ... | ...       | 31     | 0 | 0 |
| Binding                 | ... | ... | ... | ...       | 450    | 0 | 0 |
| Journal, Part I         | }   | ... | ... | ...       | 4,200  | 0 | 0 |
| Journal, Part II        |     |     |     |           |        |   |   |
| Proceedings             | ... | ... | ... | ...       | 1,000  | 0 | 0 |
| Printing Circulars, &c. | ... | ... | ... | ...       | 100    | 0 | 0 |
|                         |     |     |     | Total Rs. | 14,323 | 0 | 0 |

London Agency.

Messrs. Trübner's statement of account with the Society for 1888, which has been so long overdue, was received just before the close of

the year. The only reason assigned for the great delay was, that it had evidently been sent and miscarried. The statement shows a debit balance of £369-6-4, of which £109-19-7, the balance of account for 1887, was remitted in April 1889, leaving a net debit balance of £259-6-9 on the transactions of the year.

The sales of the Society's publications effected by Messrs Trübner in 1888 amounted to £24-5-0 and of the *Bibliotheca Indica* to £16-13-0.

The number of copies of parts of the *Journal*, of the *Proceedings*, and of the *Bibliotheca Indica* sent to the Agents during 1890 for sale was 799, 450 and 1307 respectively, valued at Rs. 1,650.

Nine 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 £80-14-6.

A further remittance of £100 was made to Messrs. Trübner early in the year towards their accounts for 1888. Their accounts for 1889, have not yet been received.

#### **Library.**

The total number of volumes, or parts of volumes, added to the Library during the year was 2,168, of which 747 were purchased, and 1,421 presented or received in exchange for the Society's publications.

The first fasciculus of the Catalogue of the Persian works in the Oriental Library has been published; the remaining portion of the work is in the press and expected to be ready very shortly.

#### **Publications.**

There were published during the year, ten numbers of the *Proceedings* containing 268 pages of letter press and 3 plates; four numbers of the *Journal*, Part I, (Nos. 3 and 4 of 1889 and Nos. 1 and 2 of 1890) containing 325 pages of letter press and 13 plates; and three numbers of the *Journal*, Part II containing 270 pages of letter press and 8 plates. Two numbers of the late Mr. Atkinson's Catalogue of the *Insecta* of the Oriental Region containing 325 pages of letter press were also issued as a Supplement to Part II; and the indexes to the *Journal* for 1888 and 1889, the latter containing two plates belonging to the *Journal* for that year.

#### **Building.**

An unforeseen expenditure of Rs. 193-5-9 had to be incurred in carrying out certain alterations in the drainage of the grounds connecting with the sewer, consequent on a notice from the Municipality. The approval of the Municipality was obtained to the estimate for the work, as also to the manner in which it had been carried out.

### Coin Cabinet.

During the year 87 coins were added to the Cabinet, of which 2 were of gold, 21 of silver, and 64 of copper. One of the gold coins was presented by the Govt. N.-W. Provinces, all the rest were acquired under the Treasure Trove Act, and were from the Bengal Presidency. They all belong to ordinary types and detailed notices of them have been given in the Proceedings for May, June and July.

### Office of the Secretaries.

Dr. Hoernle carried on the duties of Philological Secretary until June, when he went on leave and Major Sadler took them up until September when he left Calcutta temporarily and made them over to Dr. Solf, who carried them on until the middle of December, when he was obliged to leave India owing to ill health. Mr. Tawney has agreed to carry on the work till Dr. Hoernle's return.

Mr. Wood-Mason resigned the editorship of the Journal, Part II in June and Mr. Sclater was appointed Natural History Secretary and editor. He went on short leave in September, and Col. Waterhouse took charge of the Journal during the interval.

Dr. W. King carried on the duties of Treasurer during the year except for two periods of about two months each, when he had to leave Calcutta on duty, and Mr. Sclater took charge of the work.

Mr. H. Ronaldson was Assistant-Secretary throughout the year.

Mr. J. H. Elliott rejoined his post of Assistant-Librarian on the expiry of his leave in March. There were no changes in the posts of Cashier, Pandit and Copyist, which were held by the permanent incumbents Bábú Nritya Gopal Bose, Pandit Hari Mohan Vidyábhúshan and Bábú Joges Chandra Chatterjee respectively.

### Bibliotheca Indica.

Forty-five fasciculi were published during the year, of which twelve were in the Arabic-Persian, twenty-seven in the Sanskrit, and six in the Tibetan series. They belong to twenty-one different works, of which three are in the Arabic-Persian, fifteen in the Sanskrit, and three in the Tibetan series. There was one new publication in each series, viz., the *Riyázu-s-Salátín*, in the first series, the *Nyáyavindu Tíká* (complete in one fasciculus) in the second, and the *Pag Sam Thi sin* in the third. Six works were completed of previous years, of which two, the *Tárikh-i-Firúz Sháhí*, and the *Riyázu-s-Salátín*, belong to the Arabic-Persian, and the *Advaita Brahma Siddhi*, the *Kurma Purána*, the *Manu Tíká Sangraha*, and the *Uvásagadasáo* to the Sanskrit series.

It was stated in the Annual Report for 1890 (p. 22) that 44 fasci-

culi had been estimated as the out-turn for the year at a probable cost of Rs. 16,588 : the actual out-turn has been 45 fasciculi, as stated above. The expenditure out of the Oriental Publication Fund during the year amounted to Rs. 15,206 which includes printing charges for 38 fasciculi, and editing charges for 28 fasciculi, and gives an average of Rs. 460 for each fasciculus. For the year 1891 the out-turn may be reckoned at 36 fasciculi.

No new works were sanctioned for publication during the year : On the other hand it has been decided not to publish the translation of the *Riyāzu-s-Salātīn*, which was sanctioned in 1887, and to discontinue the translation of the *Tuzuk-i-Jahāngīrī*, of which one fasciculus has been published.

The translation of the second volume of the *Āin-i-Akbarī*, which was mentioned in the report for 1887 to have been taken up by Colonel Jarrett, has been well advanced, and is expected to be completed in the present year.

Of the following works of which fasciculi had appeared in previous years, no fasciculi were published during the year under review.

1. TABAQĀT-I-NĀSIRĪ, (Index of persons and places) ; 2, PRĀKRITA LAKSHAṆA (English translation and Notes) ; 3, KĀTANTRA (introduction) ; 4, SŪSRUTA SAMHITĀ (English translation) ; 5, ĀPASTAMBA ŚRAUTA SŪTRA (Text) ; 6, LALITA VISTARA (English translation).

Of the following works sanctioned in previous years, no fasciculi have as yet appeared.

1. PRĀKRITĀDHYĀYA (Text and translation) ; 2, CHARAKA (English translation, with Notes) ; 3, NAQAID-UL-FARAZDAQ-JERIR (Text with English translations in prose and verse) ; 4, KĀLA VIVEKA (Text) ; 5, VEDĀNTA SŪTRA, Commentaries on, (Text) ; (two of these, viz., ANUBHĀSHYAM and ŚRĪBHĀSHYAM, have been commenced) ; 6, YOGINĪ TANTRA (Text) ; 7, KARANA GRANTHA (Text) ; 8, MUNTAKHABU-T-TAWARĪKH, Vol. I, (English translation) ; 9, TĀJ-UL-MĀĀSIR (Text) ; 10, TĀRĪKH-I-WASSAF (Text) ; 11, TĀRĪKH-I-YĀMINĪ (English translation, with Notes) ; 12, JĪNĀTĀDHARMAKATHĀ and VIPĀKA SŪTRA (Text) ; 13, SADDHARMA PUṆḌARĪKA (Text) ; 14, AL TABRĪZĪ'S Commentary (Text) ; 15, SVAYAMBHŪ PURĀṆA (Text) ; 16, BAUDHĀYANĪYA ŚRAUTA SŪTRA, and HIRANYAKESĪ ŚRAUTA SŪTRA (Text) ; 17, ĀIN-I-AKBARĪ, Vol. II, (English translation) ; 18, RIYĀZU-S-SALĀTĪN (Text and English translation) ; 19, BHATṬOTPALA'S Commentary on VARĀHA MIHIRA'S BṚĪHAT SAMHITĀ.

No new works were sanctioned for publication during the year.

The following is a descriptive list of the publications issued during 1890.

A. *Arabic and Persian Series.*

1. **MA'ÁSÚRU-L-UMARÁ** or memoirs of the nobles of the Mughal Court of Delhi by a nobleman of that Court, compiled during the early part of the last century. It contains biographical accounts of those great men who worked hard for the establishment and the consolidation of the Mughal empire in India. Nos. 740, 750, 751, 756, 762, 769, 778. Vol. II, Fasc. 9, Vol. III, Fasc. 1, 2, 3, 4, 5, 6. Total, *seven* Fasc.

2. **RIYÁZU-S-SALÁTÍN**, by Ghulám Husain, called Salím, a native of Zaidpur. It is a history of Bengal to which is prefixed a short geography of Bengal. The work of editing and translating the work was entrusted to Maulvi Abdul Hak Abid, B. A., but the translation has been abandoned for the present. Nos. 755, 764, 771, 775, Fasc. 1, 2, 3, 4. Total *four* Fasc.

3. **TÁRÍKH-I-FÍRÚZ SHÁHÍ**, a history of the reign of Fírúz Sháh Tughlaq of the Tughlaq dynasty of Delhi by Shams-i-Siráj-i-'Aff, has advanced by one fasciculus only, No. 738, Fasc. 5. There is another work on the same subject by Ziyá-i-Baraní.

B. *Sanskrit Series.*

1. **ADVAITA-BRAHMA-SIDDHI** by Sadánanda Yati has been completed. It contains four chapters designated "blows with a club." It refutes the various philosophical doctrines that obtained currency in ancient India and establishes the non-dual theory. The *Vedánta Dinđima*, a short work on the Vedanta philosophy, in verse, has been added to the work as an appendix. The editor Pañdit Váman Sásatri, Upádhyaía of Islámpur in Bombay, has added a very large number of footnotes which have the rare merit of really elucidating the text, No. 747. Fasc. 4. Total *one* Fasc.

2. **BRIHAD-DEVATÁ**, a very ancient work attributed to Śaunaka Áchárya. It is an index to the Ṛig Veda giving the *devatá*, the deity praised, *i. e.*, the subject-matter of every *súkta*, and *rich* of that Veda. It is one of those works which enabled the ancient *rishis* to preserve the purity of the Vedic text. Edited by Rájá Rájendralála Mitra, LL. D., C. I. E. The work has advanced by one fasciculus only. No. 760, Fasc. 2.

3. **CHATURVARGA CHINTÁMAÑI** is an exhaustive work on Hindu rituals by Hemádrí the Court Pañdit of one of the Yádava kings of Devagiri during the thirteenth century. The author is reported to have been a great friend of Vopadeva, the celebrated author of the *Mugdha-*

bodha. Two volumes of the work have been completed and the first part of the third volume. The Editors, Paṇḍits Jogeśvara Smṛitiratna and Kámákhyánátha Tarkavágíśa are now engaged with the second part of the third volume which relates to the *Srāddha* ceremony. Nos. 746, 763, 774, Vol. III, Pt. II, Fasc. 5, 6, 7. Total *three* Fasc.

4. KÚRMA PURĀṆA, edited by Babu Nílmaṇi Mukhopādhyáya, Professor of Sanskrit, Presidency College, Calcutta, has been completed. It contains a learned preface by the editor in which the character and nature of the Puranic literature has been fully discussed. No. 743, Fasc. 9. Total *one* Fasc.

5. MADANA PĀRIJĀTA, written under the patronage of Madana Pála Deva of Káshthá or Kachchhá a city near Delhi on the Jamuná. Madana Pála was a great patron of learning and a large medical work was also compiled under his patronage. The Párijāta quotes from the Chaturvarga Chintāmaṇi and the Mitákshará and appears to have been written about the fifteenth century. It has advanced by two fasciculi. Nos. 757, 770, Fasc. 7, 8.

6. MANU-ŪKĀ SAMGRAHA, edited by Dr. Julius Jolly, Professor of Sanskrit, Würzburg, contains extracts from six of the well-known commentaries of Manu. These extracts are meant simply to explain the texts of the original, all additional matter and arguments having been excluded. The work has advanced by one fasciculus, which brings the extracts to the end of the third chapter of Manu. It has now been stopped by agreement with the editor, owing to the publication of all the Manu commentaries by the late lamented Rao Vishvanáth Maṇḍalik. No. 728, Fasc. 3. Total *one* Fasc.

7. NYÁYA-VINDU ŪKĀ, a commentary to the Nyáya-vindu. A work on the Buddhist system of logic, edited by Professor Peter Peterson, M. A., of Bombay. It is a solitary example of a Buddhist work preserved in the Continent of India in a Jaina Library. The learned editor has succeeded during the course of his edition in getting a copy of the original work, the Nyáya-vindu. The present commentary is by Dharmottaráchārya who is reputed to be the founder of the Dharmotariya school of the followers of Buddha. The learned editor is now engaged in making a translation of both the text and the commentary. No. 741, complete in one Fasc.

8. NYÁYA KUSUMĀNJALI PRAKARAṆAM by Udayanáchārya. This work is to be distinguished from the metrical work of the same name by the same author, edited some time ago by E. B. Cowell, Esq. The edition is in the hands of Mahámahopādhyáya Chandrakánta Tarká-lankára. It is accompanied with the commentary of Varddhamána, copiously illustrated by extracts from the gloss of Ruchidatta. It has

advanced by four fasciculi. Nos. 745, 749, 765, 768. Vol. IV, V, VI and Vol. II, Fasc. I.

9. PARÁSARA SMṚITI by the same learned editor, has advanced by three fasciculi, two belonging to the second volume treating of *Práyas-chitta*, and one to the third volume treating of *Vyavahára*. The work is accompanied with the commentary of the great Mádhaváchárya and is the standard work on Hindu Law and Rituals in Southern India. Nos. 759, 761, 766, Vol. II, Fasc. 3, 4, Vol. III, Fasc. 1. Total *three* Fasc.

10. SÁMKHÁYANA S'BAUTA SÚTRA edited by Dr. Alfred Hillebrandt, Professor of Sanskrit in the University of Breslau. The second volume has advanced by one fasciculus. This volume contains the commentary by Anarttiya, the son of Varadatta, on the text of Sámkháyana. No. 754, Vol. II, Fasc. 2. Total *one* Fasc.

11. S'RÍ-BHÁSHYAM edited by Paṇḍit Rámnáth Tarkaratna is a commentary on the Vedánta aphorisms of Vádaráyana by Rámánujáchárya, the founder of a Vaishnava sect in Southern India who flourished about the thirteenth century A. D. This commentary adopts the non-dual theory of Sámkara with certain modifications. No. 737, Fasc. 2. Total *one* Fasc.

12. TAITTIRÍYA SAMHITÁ edited by Mahámahopádhyáya Mahésachandra Nyáyaratna, C. I. E., has advanced by one fasciculus. It is the text of the Black Yajur Veda and is accompanied with the commentary of Mádhaváchárya. No. 744, Fasc. XXXIV. Total *one* Fasc.

13. TATTVA-CHINTÁMAÑI, edited by Paṇḍit Kámákhyánátha Tarkavágsísa, has advanced by four fasciculi. The editor is now going on with the second volume of the work which treats of Inference. Nos. 735, 748, 758, 772, Vol. II, Fasc. 3, 4, 5, 6. Total *four* Fasc.

14. TULSÍ SATSÁI, *i. e.*, seven hundred verses by Tulsídás the great Hindí poet. Each verse contains a riddle and a double entendre, one meaning of which is a praise of Ráma. The work is being edited by Paṇḍit Bihárilál Chaube. It has advanced by two fasciculi. Nos. 739, 753, Fasc. 2, 3.

15. UVÁSAGADASÁO edited by Dr. A. F. R. Hoernle. With this fasciculus which contains indices the work is now completed. No. 752, Fasc. 6. Total *one* Fasc.

### C. Tibetan Series.

1. SHER PHYIN edited by Bábú Pratápa Chandra Ghosha is a Tibetan translation of the Sata Sáhásriká Prajñá Páramitá or the Prajñá Páramitá of 100,000 verses. The learned editor is omitting all repetitions which abound in the work. Nos. 736, 742, 767, Vol. I, Fasc. 4, 5, and Vol. II, Fasc. 1. Total *three* Fasc.

2. BODHISATTVAVADÁNA KALPALATÁ, by Kshemendra, under the

joint editorship of Bábú Sarat Chandra Dás, C. I. E., and Paṇḍit Hari-mohan Vidyábhúshan, Oriental Librarian to the Asiatic Society, has advanced by two fasciculi. The work is accompanied with a Tibetan translation made about 400 years ago at Lhásá. Nos. 773 and 777, Vol. I, Fasc. 3, Vol. II, Fasc. 1. Total *two* Fasc.

3. PUG SAM THI SIN is a free prose rendering in modern Tibetan of the above work as distinguished from the metrical and literal version in classical Tibetan given in No. 2. Pug Sam Thi Sin is recited daily almost in every household in Tibet. No. 776, Fasc. 1. Total *one* Fasc.

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*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 nothing has been sent in return.

\* Allahabad :—Editor, Pioneer.

† Amsterdam :—Royal Zoological Society.

\* ——— :—Koninklijke Akademie van Wetenschappen.

† Angers :—Société d' Etudes Scientifiques d' Angers.

\* Baltimore :—Johns Hopkins University.

\* Batavia :—Society of Arts and Sciences.

\* ——— :—Kon Natuurkundige Vereeniging in Nederlandsch-Indië.

\* Berlin :—Gesellschaft Naturforschende Freunde zu Berlin.

\* ——— :—Royal Academy of Sciences.

§ ——— :—Entomologische Verein.

† Berne :—Société Suisse d' Entomologie.

§ Birmingham :—Birmingham Philosophical Society.

\* Bombay :—Anthropological Society.

\* ——— :—Bombay Branch, Royal Asiatic Society.

\* ——— :—Editor, Indian Antiquary.

\* ——— :—Editor, Times of India.

\* ——— :—Natural History Society.

\* Boston :—Natural History Society.

§ ——— :—American Philological Association.

§ Bordeaux :—L' Académie Nationale des Sciences, Belles-Lettres et Arts.



- \* Bordeaux :—Société Linnéenne.
- § ——— :—Royal Geographical Society of Australasia, Queensland Branch.
- † Brookville :—Society of Natural History.
- † Brunswick :—Verein für Naturwissenschaft.
- † Brussels :—L' Académie Royale des Sciences.
- † ——— :—Musée Royal d' Histoire Naturelle de Belgique.
- \* ——— :—Société Entomologique de Belgique.
- \* ——— :—Société Royale Malacologique de Belgique.
- § ——— :—Société Royale des Sciences de Liège.
- \* Buda Pest :—Royal Hungarian Academy of Sciences.
- § ——— :—La Société Hongroise de Géographie.
- \* Buenos Ayres :—National Museum.
- \* ——— :—Academia Nacional de Ciencias de la Republica Argentina.
- \* Calcutta :—Agri-Horticultural Society of India.
- \* ——— :—Geological Survey of India.
- \* ——— :—Editor, Englishman.
- \* ——— :—Editor, Hindoo Patriot.
- \* ——— :—Editor, Indian Daily News.
- § ——— :—Editor, Indian Engineering.
- \* ——— :—Editor, Indian Mirror.
- \* ——— :—Indian Museum.
- † ——— :—Mahommedan Literary Society.
- § ——— :—Photographic Society of India.
- † ——— :—Public Library.
- \* ——— :—Survey of India.
- \* ——— :—Tuttobodhini Shova.
- † ——— :—University Library.
- † Cambridge :—University Library.
- \* Cassel :—Der Verein für Naturkunde.
- \* Cherbourg :—Société Nationale des Sciences Naturelles.
- \* Christiania :—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 der Universität.
- \* Dresden :—Entomologischen Vereins " Iris."
- \* ——— :—Königlichen Zoologischen und Anthropologisch-Ethnographischen Museums zu Dresden.
- \* Dublin :—Royal Dublin Society.

- † Dresden :—Royal Irish Society.
- \* Edinburgh :—Royal Society.
- § ———— :—Royal Physical Society.
- \* ———— :—Scottish Geographical Society.
- \* Florence :—Società Italiana di Anthropologia, Etnologia e Psicologia Comparata.
- \* ———— :—Società Africana d' Italia.
- \* Frankfurt :—Senckenbergische Naturforschende Gesellschaft.
- \* ———— :—Naturwissenschaftlichen Vereins des Regierungsbezirks.
- \* 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.
- § Hague :—Koninklijk Instituut voor de Taal-Land-en Volkenkunde van Nederlansch-Indië.
- \* Hamburg :—Naturhistorisches Museum zu Hamburg.
- § ———— :—Naturwissenschaftlichen Verein.
- † Halle :—Deutsche Morgenländische Gesellschaft.
- † ———— :—Kaiserlichen Leopoldinisch-Carolinische Akademie.
- † Hamilton :—Hamilton Association (Canada).
- \* Havre :—Société de Géographie Commerciale du Havre.
- \* Helsingfors :—Societas pro Flora et Fauna Fennica.
- † ———— :—Société des Sciences de Finlande.
- § Ithaca (U. S. A.) :—Cornell University.
- § Jassy :—Societății Stătifice Literare.
- \* Kiev :—Société des Naturalistes.
- \* Königsberg :—Die physikalische-Oekonomische Gesellschaft.
- \* Lahore :—Editor, Civil and Military Gazette.
- † ———— :—Agricultural Society.
- § Leipzig :—Deutsche Morgenländische Gesellschaft.
- † Leyden :—Royal Herbarium.
- \* Liège :—Société Géologique de Belgique.
- † ———— :—Société des Sciences.
- \* 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.

- \* London :—Editor, *Nature*.
- \* ——— :—Linnean Society.
- † ——— :—Royal Asiatic Society of Great Britain and Ireland.
- \* ——— :—Royal Astronomical Society.
- \* ——— :—Royal Geographical Society.
- \* ——— :—Royal Institution of Great Britain.
- \* ——— :—Royal Microscopical Society.
- \* ——— :—Royal Society.
- \* ——— :—Statistical Society.
- \* ——— :—Zoological Society.
- † Lyons :—La Société d' Agriculture, d' Historie Naturelle et des Arts Utiles.
- † ——— :—Muséum d' Histoire Naturelle.
- \* ——— :—La Société d' Anthropologie.
- † Madison, Wisconsin :—Wisconsin Academy of Sciences, Arts, and Letters.
- † Madras :—Literary Society.
- \* ——— :—Government Central Museum.
- † Manchester :—Literary and Philosophical Society.
- § Melbourne :—Royal Society of Victoria.
- \* Mendon, Ill :—Editor, *American Antiquarian and Oriental Journal*.
- \* Mexico :—Sociedad Científica " Antonio Alzate."
- § ——— :—Observatorio Meteorológico-Magnético Central.
- § ——— :—Estados Unidos Mexicanos.
- § ——— :—Deutschen Wissenschaftlichen Vereins in Mexico.
- § Minneapolis :—Minnesota Academy of Natural Sciences.
- \* Moscow :—Société Imperiale des Naturalistes.
- \* ——— :—Imperial Society of Amateurs of Natural Sciences, Anthropology and Ethnology.
- \* Munich :—K. Bayerische Akademie der Wissenschaften.
- \* Naples :—Società Africana d' Italia.
- † New Haven :—Connecticut Academy of Arts and Sciences.
- § ——— :—American Oriental Society.
- † Newport (R. I.) :—Natural History Society.
- \* New York :—American Museum of Natural History.
- \* Ottawa :—Geological and Natural History Survey of the Dominion of Canada.
- † Oxford :—Bodleian Library.
- † ——— :—Indian Institute.
- \* Paris :—Société de Géographie.
- \* ——— :—Société d' Anthropologie.
- \* ——— :—Société Asiatique.

- \* Paris :—Musée Guimet.
- † ——— :—National Library.
- \* ——— :—Société Zoologique.
- \* ——— :—Société Académique Indo-Chinoise.
- § ——— :—Institution Ethnographique.
- † ——— :—Museum d' Histoire Naturelle.
- \* Philadelphia :—Academy of Natural Sciences.
- § ——— :—American Philosophical Society.
- \* ——— :—Journal of Comparative Medicine and Surgery.
- \* Pisa :—Società Toscana di Scienze Naturali.
- § Prague :—K. K. Sternwarte.
- § Raleigh, N. C :—Elisha Mitchell Scientific Society.
- § Rio de Janeiro :—Imperial Observatorio.
- § Rome :—Società degli Spettroscopisti Italiani.
- § Roorkee :—Editor, Indian Forester.
- \* St. Petersburg :—Comité Géologique.
- † ——— :—Imperial Library.
- \* ——— :—Russian Geographical Society.
- \* ——— :—Académie Impériale des Sciences.
- \* ——— :—Jardin Impériale de Botanique.
- § ——— :—La Société des Naturalistes de Kiew.
- \* San Francisco :—Californian Academy of Arts and Sciences.
- \* Santiago :—Deutsche Wissenschaftliche Vereines.
- § Schaffhausen :—Swiss Entomological Society.
- \* Shanghai :—China Branch, Royal Asiatic Society.
- \* Simla :—United Service Institution of India.
- \* Stettin :—Entomological Society.
- \* Stockholm :—Entomologische Tidsskrift.
- \* ——— :—Royal Swedish Academy of Sciences.
- \* Sydney :—Royal Society of New South Wales.
- \* ——— :—Linnean Society of New South Wales.
- § Taiping :—Government of Perak.
- \* Toronto :—Canadian Institute.
- \* Tokyo :—Imperial University of Japan.
- \* ——— :—Deutsche Gesellschaft für Natur- und Völkerkunde Ostasiens.
- § Trenton, N. J.—Trenton Natural History Society.
- \* Trieste :—Société Adriatica di Scienze Naturali.
- \* Turin :—Reale Accademia delle Scienze.
- § ——— :—Osservatio Regia Universita.
- † Ulwar :—Ulwar Library.
- \* Vienna :—Anthropolgoische Gesellschaft.

- \* Vienna :—K. K. Akademie der Wissenschaften.
- \* ——— :—K. K. Geologische Reichsanstalt.
- \* ——— :—K. K. Naturhistorische Hofmuseums.
- \* ——— :—K. K. Zoologisch-Botanische Gesellschaft.
- † ——— :—Ornithologische Verein.
- § ——— :—Österreichischen Touristen-Club.
- \* Washington :—Commissioners of the Department of Agriculture.
- \* ——— :—Smithsonian Institution.
- \* ——— :—United States Geological Survey.
- :—United States National Museum.
- § Wellington :—New Zealand Institute.
- \* Württemberg :—Natural History Society.
- † Yokohama :—Asiatic Society of Japan.
- \* Zagreb :—Archæological Society.

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ABSTRACT OF COUNCIL PROCEEDINGS DURING 1890.

*January 30th, Ordinary Meeting.*

An offer from the Baptist Mission Press to make a reduction in the rate for printing extra copies of Author's papers in excess of 100 copies, and for title page and cover, was accepted.

Read a letter from the Deputy Commissioner of Hardoi, conveying the grateful acknowledgments of the Committee of the Colvin Library for the presentation of books made by the Council.

An enquiry from the Government of India regarding the merits of Dr. Leitner's Hunza and Nagyr Hand-book was referred to the Philological Committee.

An application from Pundit Satya Vrata Samasrami for permission to edit the *Aitareya Brahmana*, with the commentary of Sargana, and explanatory notes, was referred to the Philological Committee.

It was resolved with reference to a representation made by the Finance Committee regarding the very heavy expenditure on the Journal, Part II, that a quarterly statement of accounts should be submitted by the Natural History Secretary.

*February 27th, Ordinary Meeting.*

Two copies of a new publication called the "Usha," to contain works of Vedic literature, edited by Pundit Satya Vrata Samasrami, were ordered to be subscribed for.

Messrs. Meugens and King were appointed Auditors of the Society's Accounts for the present year.

Permission was given to the Baptist Mission Press to make the

following charges for "doing up" Supplements to the Journal, viz., Rupees 5 for numbers not exceeding, or only slightly exceeding 100 pages; Rupees 8 for numbers extending to 200 pages, or thereabouts; and Rupees 3-8 for numbers equal to an average Proceedings, or less.

The sum of Rs. 2,500 was assigned to Part II of the Journal, and Rupees 1,500 to Part I, as a provisional arrangement for the current year.

It was decided that the Trustees of the Indian Museum should be asked to pay one-third of the cost for printing the lists of Insects of the Oriental Region in consideration of 100 extra copies of the lists being supplied to the Trustees.

The various Committees for 1890 were appointed.

The Philological Committee having recommended that no new works should be sanctioned for publication in the Bibliotheca Indica for the present, an intimation to that effect was made to Pandit Satya Vrata Samasrami with reference to his application to edit the *Aitareya Brahmana*.

A proposal by Bábú Asutosh Mukhopadhyáya to publish certain Astronomical works, was referred to the Philological Committee.

Bábú Gaurdás Bysack was informed with reference to his application for aid in tracing the history of Calcutta to the earliest possible period, that the Council, while sympathizing with his objects, were unable to materially forward his views.

#### *27th March, Ordinary Meeting.*

Permission was given to Dr. Gustav Oppert to purchase a copy of all the Sanskrit works published by the Society at the same rate of discount as allowed to Booksellers.

The loan of the Persian manuscript *Tazkirah-i-Al-i-Daud* in the Society's library was sanctioned to Dr. Oskar Mann of Berlin, through the German Consulate General in Calcutta.

Bábú Saratchandra Dás was allowed to take to Darjeeling two Tibetan Xylographs for the purpose of getting them tabulated in connection with the Tibetan Dictionary which he is compiling for Government.

The Government of India was informed that the Society was not in a position to give an opinion as to the merits of Dr. Leitner's Hunza and Nagyr Hand-book.

An offer from Otto Harrassowitz of Leipzig to act as Commission Agent to the Society for the sale of the Bibliotheca Indica publications for Germany and the Continent was declined.

An exchange of publications with the Geographical Society of Leipzig was approved.

The Linnean Society of New South Wales were asked to give the back numbers of their Proceedings from 1882 in exchange.

*May 1st, Ordinary Meeting.*

Mr. H. Beveridge was appointed a Trustee of the Indian Museum on behalf of the Asiatic Society in place of Mr. E. Gay, leaving India.

Read a letter from the Honorary Secretary to the Trustees Indian Museum, forwarding an extract from the proceedings of the General Committee of the Trustees conveying to Mr. Gay the expression of the Trustees thanks for his services and regret at losing him.

The publications of the Bibliotheca Indica were ordered to be sent to the Toronto University, Canada, the building having been destroyed by fire with its valuable Library and collections.

An offer from the Museum d'Histoire Naturelle, Paris, for an exchange of publications to commence from 1889, with the 3rd Series of the "Nouvelles Archives du Museum" was accepted.

A letter from the Honorary Secretary of the Photographic Society of India offering to rent two rooms on the ground floor of the Asiatic Society's building at Rs. 60 a month, was circulated to the Council.

On the recommendation of the Philological Secretary, the Council approved the nomination by Dr. A. Chatterjee of the Vaidya Pandit to aid him in the translation of the *Susruta*.

*May 29th, Ordinary Meeting.*

A letter from Mahádev Chimnáji Ápté intimating that he had founded an "Anandás'rama" at Poona for the collection and publication of Sanskrit Manuscripts and forwarding copies of three of the works published, with a request to be informed of the character of the work done, was referred to the Philological Committee.

Read a letter from the Honorary Secretary to the Trustees of the Indian Museum reporting that the Trustees would contribute for the present year one-third of the amount incurred in printing the Catalogues of Oriental Insecta.

The names of Astronomers in India were furnished to the Director of the Specula Vaticana at Rome with reference to his report that the Vatican Observatory had been revived, and that steps were being taken to make it as useful as possible to science.

A draft letter to the Photographic Society of India embodying the terms on which they would be allowed to rent two rooms on the ground floor of the Asiatic Society's building was circulated to the Members of Council.

It was resolved that the 1st fasciculus of the Catalogue of Persian

books and Manuscripts in the Society's library should be sold at one rupee, and the 2nd fasciculus at eight annas a copy: copies to be distributed to all persons on the Bibliotheca Indica list, and the Maulvi to be paid at the rate of Rs. 1-4 per page for his labor in compiling the Catalogue.

The recommendation of the Finance Committee that future editions of works published through the Oriental Publication Fund should be reduced from 500 to 300 copies of each fasciculus was confirmed.

Captain Sadler consented to act as Philological Secretary during the absence of Dr. Hoernle on leave.

*June 26th, Ordinary Meeting.*

The Linnean Society of New South Wales consented to an exchange of back publications from 1882.

The condolences of the Council were conveyed to the Koninklijk Zoologisch Genootschap, Amsterdam, on the death of Dr. G. F. Westerman, the Founder and Director of the Society.

The University of Lyon was informed in reply to an application for the back numbers of the Bibliotheca Indica publications to complete the sets in their Library, that the books could not be spared.

An application from the Directors of the Deutscher Wissenschaftlicher Verein, Mexico, for an exchange of publications was declined with thanks.

On the report of the Philological Secretary an application from Pandit Jaistharam Mucoondjea of Bombay for permission to reprint all the works of the Bibliotheca Indica that are out of stock or incomplete was refused, but he was informed that an application to reprint any particular work would be considered.

The Photographic Society of India were informed of the conditions on which they would be allowed the use of the two rooms on the ground floor of the Asiatic Society's building.

A suggestion from Mr. C. J. Rodgers to catalogue the Society's Coins was deferred till he came to Calcutta.

Sanction was given to the entertainment by Bábú Pratápchandra Ghosha of a Pundit on Rs. 50 a month to assist him in editing the "*Sher-Phyin*."

Dr. Hoernle reported that the grave of the late Mr. Blochmann in the Circular Road Cemetery was in very good condition, and needed no repairs at present.

A Resolution by the Finance Committee regarding the expenditure on Part II of the Journal having exceeded the budget allowance, and



suggesting that the attention of the Editor should be drawn thereto, was confirmed.

*July 31st, Ordinary Meeting.*

The Photographic Society of India reported acceptance of the conditions prescribed by the Council for renting the two rooms they had applied for, and permission was given to make the necessary alterations to suit the rooms to their requirements.

Dr. Prain was informed in reply to a request to pay for the printing of his paper on "An additional species of *Ellipanthus*," and the plate to accompany it, that there would be no objection to his printing the plate, but that the cost of printing the text would be borne by the Society.

It was decided on the report of the Philological Committee not to express an opinion as to the character of the Sanskrit works published by Mahádev Chinmáji Apté, but that copies of the works should be purchased for the Society's Library.

A recommendation by the Finance Committee to modify Rule 70, so as to allow of Admission Fees being treated as ordinary income, instead of being invested in the Permanent Reserve Fund, was referred to Resident Members in accordance with Rule 64, (a).

The Government Promissory Notes amounting to Rs. 1,20,000, belonging to the Society standing in the  $4\frac{1}{2}$  per cent. loans of 1878 and 1879, which mature on 15th September 1893, were authorized to be transferred to the 4 per cent. loan of 1854-55, in terms of the Notification of the Government of India offering payment in cash of the additional  $\frac{1}{2}$  per cent. interest up to date of maturity.

*August 28th, Ordinary Meeting.*

The Director of the National Society of Natural Sciences and Mathematics, Cherbourg, was informed in reply to an application for the Journal, Part I, which had not been received since 1886 that it had not been sent, as it treats of Philology and Antiquities.

Sanction was given to an expenditure of Rs. 35 for the purchase of a copper plate inscription found at Ashraffpur in the Dacca district. A description of the plate has been published in the Journal.

It was resolved on the report of the Finance Committee to revert to the old rates of changes for the Journals and Proceedings of the Society, and that circulars of the Bibliotheca Indica publications should be prepared in Urdu, Devanagri and Bengali characters in order to make the works better known to the educated classes.

A paper by Saratchandra Mitra on the "Diseases of Animals in Captivity" was declined with thanks.

A list of the members in arrear of subscription for two years and upwards was ordered to be brought up at the next general meeting of the Society with a view to determine the steps to be taken to recover the amounts, and a Sub-Committee was appointed to consider the question of payment of subscription yearly in advance and the rules regulating procedure in collecting arrears.

The sale of Government Promissory notes for Rs. 2,400 belonging to the Oriental Publication Fund was sanctioned to pay off bills of the Baptist Mission Press.

An estimate amounting to Rs. 178-2-3, approved by the Engineer to the Corporation, for making certain alterations in the drainage of the Society's premises, was sanctioned with reference to a notice received from the Municipality.

The publication of Mr. Hoey's report on the excavations and exhumations at Sahet Mahet in the Banda district was ordered to be undertaken, with reference to an intimation from that gentleman that it was now quite ready.

It was agreed that Captain Sadler should ask Dr. Solf to take up the duties of Philological Secretary in the event of his leaving Calcutta, and that Colonel Waterhouse should take charge of the Journal, Part II, whilst Mr. Selater was on leave.

*September 25th, Ordinary Meeting.*

A resolution was recorded deploring the very great loss the Asiatic Society of Bengal and Indian Natural Science have sustained by the untimely death of Mr. E. F. T. Atkinson, a former President and Vice-President of the Society; and a copy of the resolution was forwarded to Mrs. Atkinson, with a letter of condolence signed by all the Members of Council.

Bábú Man Mohan Chakravarti was asked to prepare an abstract of his paper on certain inscriptions in the Jaganath temple at Puri, and the great temple of Mahadev at Bhuvaneshwar, of the Orissa kings of the 15th and 16th centuries.

The proceedings of the Sub-Committee appointed to consider the revision of the rule relating to the procedure for collecting arrear subscriptions were circulated to the Members of Council.

*October 30th, Ordinary Meeting.*

Pandit Gunga Dutt Upreti was informed in reply to a letter asking for the aid of the Society to assist him in publishing a work on "Proverbs and Folk-lore of the Provinces of Kumaon and Gharwal" that it was not possible to help him in the matter.

An application from the Société Botanique Bavaroise, Bavaria, for an exchange of publications was declined with thanks.

The thanks of the Council were conveyed to Mr. V. A. Smith for his suggestion to obtain greater punctuality in issuing the Society's Journals, and he was informed that arrangements to that effect were being made.

The report of the Sub-Committee appointed to revise the rules relating to the procedure for collecting arrears of subscriptions and payment of subscriptions annually in advance, was taken into consideration.

*November 27th, Ordinary Meeting.*

Applications from the Museo de la Plata, Buenos Aires, and the Entomological Society of Ontario, for exchange of publications, were referred to the Natural History Committee.

It was decided to discontinue the publication of the Catalogues of Oriental Insecta, which had been issuing as a Supplement to the Journal, Part II.

Read a letter from the Chancellor Imperial and Royal Austro-Hungarian Consulate, Calcutta, forwarding at the request of the Ministry of Foreign Affairs, Vienna, invitations for the second International Ornithological Congress to be held at Budapest in May, 1891.

Permission was given to the Photographic Society of India to store their exhibition pictures in an unused room on the ground floor for a short time whilst the building in which the exhibition is to be held is being got ready.

The Minutes of the Members of Council on a note by the President proposing to invest a sum of Rs. 50,000 out of the Permanent Reserve Fund of the Society in securities bearing a higher rate of interest were taken into consideration, and it was determined to recommend to the Society that the amount should be invested in Municipal or Port Trust Debentures.

The publication of the translation of *Tuzuk-i-Jahangiri*, which had been undertaken by the Rev. W. H. Lowe of Cambridge, was ordered to be stopped, only one fasciculus has been issued.

Intimation was given to the Calcutta Public Library that the presentation of the Society's Journal and Proceedings would be discontinued.

Sanction was accorded to an expenditure of Rs. 30 for preparing an index to the Catalogue of Insecta of the Oriental Region.

*December 18th, Ordinary Meeting.*

Read a letter from the Government of Bengal conveying the cordial

approval of the Lieutenant-Governor to the manner in which the Government grants-in-aid to the Oriental Publication Fund and the Sanskrit Manuscript Fund were applied during the past year.

Bábú Saratchandra Mitra was informed in reply to a letter asking for a list of the copper plate Sanads added to the Society's collection since 1849, that no such list had been prepared, but that the plates would be at his disposal if he became a member of the Society.

An application from Mr. B. N. Dé to undertake a translation of the *Siyar-ul-Mutakerin* for the Bibliotheca Indica was circulated to the Philological Committee.

An application from the Society's servants for the grant of warm clothing for the season was refused.

The Entomological Society of Ontario were asked to furnish a specimen copy of their publications with reference to their offer to place the Asiatic Society on their exchange list.

The application of the Director of the Museo de la Plata, Buenos Aires, for an exchange of publications, was accepted on the recommendation of the Natural History Committee.

The lists of Members in arrear of subscriptions were referred to the Treasurer.

The list of Office-Bearers and Members of Council for 1891 were prepared, ordered to be circulated to Resident Members in accordance with Rule 44.

The translation of the *Riyazu-s-Saldin* was ordered to be stopped the publication of the work not having been commenced.

The Natural History Secretary was authorized to incur an expenditure of Rs. 20 for preparing an index to the first part of the Catalogue of the late Mr. Atkinson of the Insecta of the Oriental Region.

The Report having been read the PRESIDENT invited the meeting to put any questions or to offer any remarks which any Member might think necessary in connection therewith.

No remarks having been offered the PRESIDENT moved the adoption of the report, and proposed a vote of thanks to the Honorary Secretaries and Treasurer for their exertions in behalf of the Society. The motion was carried unanimously.

The PRESIDENT then delivered an Address.

(The Address has been printed separately from the Proceedings.)

The PRESIDENT announced that the Scrutineers reported the result of the election of Office-Bearers and Members of Council to be as follows :

*President.*

Hon. Sir A. W. Croft, K. C. I. E., M. A.

*Vice-Presidents.*

Rájá Rájendralála Mitra, C. I. E., LL. D.

J. Wood-Mason, Esq.

A. Pedler, Esq., F. C. S.

*Secretaries and Treasurer.*

Dr. A. F. R. Hoernle.

W. L. Sclater, Esq.

C. Little, Esq., B. A.

W. King, Esq., B. A., D. Sc.

*Other Members of Council.*

Dr. J. Scully.

Pandit Haraprasád Shástri, M. A.

Dr. D. D. Cunningham.

Prince Jahán Qadr Muhammad Wáhid Alí Bahádur.

Bábú Gaurdás Bysack.

Dr. A. Crombie.

Bábú Pratápachandra Ghosha, B. A.

C. H. Tawney, Esq., M. A.

L. de Nicéville, Esq., F. E. S.

Colonel H. S. Jarrett.

Dr. Mahendralál Sarkár, C. I. E.

E. C. Cotes, Esq.

The meeting was then resolved into the Ordinary Monthly General Meeting—

HON. SIR A. W. CROFT, President in the Chair.

The Minutes of the last meeting were read and confirmed.

Thirty-four presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were balloted for and elected Ordinary Members :

Hon. Lala Bunbehari Kuppur.

Duncan J. Macpherson, Esq., C. S.

The following gentlemen are candidates for election at the next meeting :

D. C. Baillie, Esq., C. S., Allahabad, proposed by V. A. Smith, Esq., C. S., seconded by J. Hooper, Esq., C. S.

Dr. Aghorechunder Chatterjee, proposed by Rájá Rajendralála Mitra, seconded by Colonel J. Waterhouse.

The following gentlemen have expressed a wish to withdraw from the Society :

J. H. Apjohn, Esq., M. I. C. E.

Thakur Surj Bukhsh Singh.

Lieutenant-Colonel C. R. Macgregor, F. R. G. S.

The SECRETARY reported that election of Captain A. Brame had been cancelled at the request of that gentleman, who intimated that he would be shortly leaving Calcutta, and was quite uncertain when he would return.

The PRESIDENT announced that the proposal of the Council to transfer a sum of Rs. 50,000 belonging to the Society's *Permanent Reserve Fund* from the Government 4 per cent. loan to Municipal or other Debentures bearing a higher rate of interest would now be brought forward for consideration.

The proposal was cordially agreed to.

The following papers were read :—

1. *On thirteen copper plates of King Narsinha Deva, of Orissa.*—By MANMOHAN CHAKRAVARTI.

2. *On two copper plates of King Kulastambha Deva, of the Chalukya dynasty.*—By MAN MOHAN CHAKRAVARTI.

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

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### LIBRARY.

The following additions have been made to the Library since the Meeting held in January last.

### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Angers. La Société d'Études Scientifiques d'Angers,—Bulletin, 1888  
 Baltimore. Johns Hopkins University,—Circulars, Vol. X, No. 84.  
 Berlin. Berliner Entomologische Zeitschrift,—Band XXXV, Heft 2

- Berlin. Der Königlichen Akademie der Wissenschaften zu Berlin,—  
Abhandlungen, 1889.
- . ———. Sitzungsberichte, XX—XL.
- Brisbane. Queensland Branch of the Royal Geographical Society of  
Australasia,—Proceedings and Transactions, Vol. V, Part 2.
- Calcutta. Geological Survey of India,—Records, Vol. XXIII, Part 4.
- . Indian Engineering,—Vol. IX, Nos. 2—5.
- Edinburgh. The Scottish Geographical Society,—Magazine, Vol. VI,  
Nos. 11 and 12.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin,  
Novembre-Décembre, 1890.
- Helsingfors. Finska Vetenskaps-Societeten,—Bidrag, Häftet 48.
- . ———. Öfversigt, XXXI.
- Jassy. Societății Științifice Și Literare din Iași,—Arhiva, An. II,  
Nos. 3—4<sup>o</sup>.
- London. Anthropological Institute of Great Britain and Ireland,—  
Journal, Vol. XX, No. 2.
- . Nature,—Vol. XLIII, Nos. 1103—1107.
- . Royal Astronomical Society,—Monthly Notices, Vol. L, No.  
9; and Appendix to Vol. L.
- . Royal Geographical Society,—Proceedings, Vol. XII (New  
Series), Nos. 9—12.
- . The Academy,—Nos. 972—976.
- . The Athenæum,—Nos. 3295—3299.
- Mexico. Estados Unidos Mexicanos,—Imformes y Documentos relativos  
á Comercio Interior y Exterior Agricultura é Industrias, Nos. 61—  
64.
- Moscow. La Société Impériale des Naturalistes de Moscou,—Bulletin,  
No. 2, 1890.
- Naples. La Società Africana D' Italia,—Bollettino, Anno IX, Fasc. 11  
et 12.
- New Haven. American Oriental Society,—Proceedings, October 22nd  
and 23rd, 1890.
- New York. American Museum of Natural History,—Bulletin, Vol.  
III, No. 1; and Pages 117—122 of Vol. III.
- Paris. Du Muséum d' Histoire Naturelle,—Nouvelles Archives, III<sup>e</sup>  
série, Tome I, Fasc. 1 et 2; Tome II, Fasc. 1.
- . Journal Asiatique,—Tome XVI (VIII<sup>e</sup> série), No. 1.
- . La Société D' Anthropologie de Paris,—Bulletins, Tome XII  
(III<sup>e</sup> série), Fasc. 4; Tome XIII (IV<sup>e</sup> série), Fasc. I.
- . La Société de Géographie,—Bulletin, Tome XI, No. 2
- . ———. Compte Rendu des Séances, Nos. 14, 16—17, 1890.

- Paris. La Société Zoologique de France,—Bulletin, Tome XV, Nos. 8 et 9.
- . Musée Guimet,—Revue de L'Histoire des Religions, Tome XXI, Nos. 2 et 3.
- Philadelphia. The Journal of Comparative Medicine and Veterinary Archives,—Vol. XI, No. 12.
- Rio de Janeiro, Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno V, Nos. 10 e 11.
- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XIX, Disp. 11<sup>a</sup>.
- Schaffhausen. La Société Entomologique Suisse,—Bulletin, Tome VIII, No. 4.
- St. Petersburg. L' Académie Impériale des Sciences de St. Pétersbourg, Mémoires, Tome XXXVII, Nos. 11—13 ; Tome XXXVIII, No. 1.
- Vienna. Der K. K. Geologischen Reichsanstalt,—Jahrbuch, Band XL, Heft 1 u 2.
- . Des K. K. Naturhistorischen Hofmuseums,—Annalen, Band V, Nr. 4.
- . Der K. K. Zoologisch-botanischen Gesellschaft in Wien,—Verhandlungen, Band XL, Quartal 3—4.
- Washington. United States National Museum,—Bulletin, No. 38.
- . ———. Proceedings, Vol. XII.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- HAECKEL, ERNST. Plankton-Studien. Vergleichende Untersuchungen über die bedeutung und Zusammensetzung der Pelagischen Fauna und Flora. 8vo. Jena, 1890.
- BLANFORD, W. T. The Fauna of British India including Ceylon and Burma. Birds, Vol. II. By Eugene W. Oates. 8vo. London, 1890.

### MISCELLANEOUS PRESENTATIONS.

- Report on the Railway-borne Traffic of the Central Provinces for the official year 1889-90, ending the 31st March, 1890. Fcp. Nagpur, 1890.
- Returns of the Rail-borne Traffic of the Central Provinces during the quarter ending 30th September 1890. Fcp. Nagpur, 1891.
- CHIEF COMMISSIONER, CENTRAL PROVINCES.
- Canning and otherwise Preserving Fruits for the Home and Market. By E. M. Shelton (Bulletin, Department of Agriculture, No. 5). 8vo. Brisbane, 1890.

DEPARTMENT OF AGRICULTURE, BRISBANE.



- Catalogue of Canadian Plants, Part V. Acrogens. By John Macoun, M. A. 8vo. Montreal, 1890.
- List of Canadian Hepaticæ. By Wm. Hy. Pearson. 8vo. Montreal, 1890.

GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA.

- Report on the Administration of Bengal, 1889-90. Fcp. Calcutta, 1890.
- Report on the River-borne Traffic of the Lower Provinces of Bengal, and on the Inland Trade of Calcutta and on the Trade of Chittagong and the Orissa Ports, for the year 1889-90. Fcp. Calcutta, 1890.
- Resolution reviewing the Reports on the working of the District Boards in Bengal, during the year 1889-90. Fcp. Calcutta, 1890.
- Returns of the Rail and River-borne Trade of Bengal during the quarter ending the 30th September 1890. Fcp. Calcutta, 1891.

GOVERNMENT OF BENGAL.

- Excursions et Reconnaissances Cochinchine Française, Vol. XV, No. 33. 8vo. Hanoi, 1890.

{GOVERNMENT OF FRENCH COCHIN CHINA.

- Land and Freshwater Mollusca of India, supplementary to Messrs. Theobald and Hanley's *Conchologia Indica*, Parts I—VI and Plates. Edited by Lt.-Col. H. H. Godwin-Austen. 8vo. London, 1882-88.
- Selections from the Records of the Government of India, Home Department, No. CCLXXV.—Reports on Publications issued and registered in the several Provinces of British India during the year 1889. Fcp. Calcutta, 1890.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

- Final Report on the Revision of Settlement of the Ludhiana District in the Punjab (1878-83). By T. Gordon Walker, C. S. 8vo. Calcutta, 1884.
- Monograph on the Gold and Silver Works of the Punjab, 1888-89. Fcp. Lahore, 1890.
- Report on the Administration of the Punjab and its Dependencies for 1889-90. Fcp. Lahore, 1890.
- Report on the Settlement of the Barak Tappa of the Teri Tahsil, Kohat District, in the Punjab (1883-87). By Capt. H. P. P. Leigh. Fcp. Lahore, 1889.

GOVERNMENT OF THE PUNJAB.

- Annual Report of the Trustees of the Queensland Museum, Brisbane, for the year 1889.

QUEENSLAND MUSEUM, BRISBANE.

Account of the Operations of the Great Trigonometrical Survey of India, Vols. XII and XIII. 4to. Dehra Dun, 1890.

General Report on the Operations of the Survey of India Department, administered under the Government of India during 1888-89. Fcp. Calcutta, 1890.

SURVEYOR GENERAL OF INDIA.

Tide-Tables for the Indian Ports for the year 1891 (also January 1892). 8vo. London, 1890.

SURVEY OF INDIA, TIDAL AND LEVELLING OPERATIONS, POONA.

### PERIODICALS PURCHASED.

Berlin. Deutsche Litteraturzeitung,—Jahrgang XI, Nrn. 43—48.

———. Zeitschrift für Ethnologie,—Heft. IV, 1890.

Braunschweig. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften,—Heft 1, 1888.

Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 1, and Index to Vol. XXV.

Cassel. Botanisches Centralblatt,—Band XLIV, Heft 4—8.

Geneva. Archives des Sciences Physiques et Naturelles,—Tome XXIV, No. 12.

Göttingen. Der Königl. Gesellschaft der Wissenschaften,—Göttin- gische Gelehrte Anzeigen, Nrn. 20—22, 1890.

———. ————. Nachrichten, Nrn. 11 und 12, 1890.

Leipzig. Annalen der Physik und Chemie,—Band XLII, Heft 1.

———. ————. Beiblätter, Band XIV, Stück 11 und 12.

———. Literarisches Centralblatt,—Nrn. 44—49, 1890.

Leyden. Internationales Archiv-für Ethnographie,—Band III, Heft 5.

London. The Annals and Magazine of Natural History,—Vol. XXXV, No. 35; Vol. XXXVI, No. 36.

———. The Chemical News,—Vol. LXII, Nos. 1621 and 1622; Vol. LXIII, Nos. 1623—1625.

———. The Entomologist,—Vol. XXIII, Nos. 330 and 331.

———. The Entomologist's Monthly Magazine,—Vol. I (2nd Series), Nos. 11 and 12.

———. The Journal of Botany,—Vol. XXVIII, Nos. 335 and 336.

———. The London, Edinburgh and Dublin Philosophical Magazine, —Vol. XXX (Fifth series), Nos. 186 and 187.

———. The Messenger of Mathematics,—Vol. XX (New Series), No. 5.

———. Pali Text Society,—Journal, 1890.

- London. The Quarterly Journal of Microscopical Science,—Vol. XXXI (New Series), Part 4.
- . The Society of Arts,—Journal, Vol. XXXIX, Nos. 1987 and 1988.
- New Haven. The American Journal of Science,—Vol. XL (3<sup>rd</sup> Series), No. 239.
- Paris. L' Académie des Sciences,—Comptes Rendus des Séances, Tome CXI, Nos. 16—21.
- . Annales de Chimie et de Physique,—Tome XXI (6<sup>me</sup> Série), Novembre et Décembre 1890.
- Paris. Journal des Savants,—Octobre et Novembre, 1890.
- . Revue Scientifique,—Tome XLVI, Nos. 25 et 26; Tome XLVII, Nos. 1—3.
- . Revue de Linguistique et de Philologie Comparée,—Tome XXIII, Fasc. 4.
- . Revue Critique d' Histoire et de Littérature,—Tome XXX, Nos. 43—48.
- Vienna. Vienna Oriental Journal,—Vol. IV, No. 4.





PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR MARCH, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th March, 1891, at 9 P. M.

HON'BLE SIR A. W. CROFT, K. C. I. E., M. A., President, in the chair.

The following members were present :—

Dr. D. D. Cunningham, Bábú Sarat Chandra Dás, Rev. H. B. Hyde, Prince Jahán Qadr Muhammad Wáhid Ali Bahádur, Dr. G. King, Dr. W. King, C. Little, Esq., C. J. Lyall, Esq., J. D. Nimmo, Esq., W. L. Sclater, Esq., Dr. J. Scully, Pandit Hara Prasád Shástri, C. H. Tawney, Esq., Dr. J. H. Tull Walsh, Colonel J. Waterhouse.

The Minutes of the last meeting were read and confirmed.

Twenty-seven presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were balloted for and elected Ordinary Members :—

D. C. Baillie, Esq., C. S.  
Dr. Aghore Chunder Chatterjee.

The following gentleman is a candidate for election at the next meeting :—

E C. S. Baker, Esq., District Superintendent of Police, N. Cachar, proposed by W. L. Sclater, Esq., seconded by Dr. W. King.

The following gentlemen have expressed a wish to withdraw from the Society :—

Bábú Govinda Kumár Chaudhuri.  
Jagánnath Khanah, Esq.

The PRESIDENT announced that the Council did not propose to take any further steps regarding the revision of the rules brought forward at the meeting in January last.

The SECRETARY read the names of the gentlemen who had been appointed by the Council to serve on the various Committees for the present year.

#### FINANCE AND VISITING COMMITTEE.

|                              |                             |
|------------------------------|-----------------------------|
| Bábú Pratápa Chandra Ghosha. | Pandit Hara Prasád Shástri. |
| Rájá Rájendra Lála Mitra.    | Colonel J. Waterhouse.      |
| Dr. J. Scully.               | J. Wood-Mason, Esq.         |

#### LIBRARY COMMITTEE.

|                              |   |
|------------------------------|---|
| Nawáb Abdul Latif Bahádur.   | Mahámahopádhyaý Pandit Moheśa-<br>chandra Nyáyaratna. |
| Bábú Gaur Dás Bysack.        | L. de Nicéville, Esq.                                 |
| Dr. D. D. Cunningham.        | Hon. Dr. Mahendra Lál Sarkár.                         |
| Bábú Pratápa Chandra Ghosha. | Dr. J. Scully.  |
| Prince Jahán Qadr Muhammad   | Pandit Hara Prasád Shástri.                           |
| Wáhid Ali Bahádur.           | C. H. Tawney, Esq.                                    |
| J. Mann, Esq.                | Colonel J. Waterhouse.                                |
| Rájá Rájendra Lála Mitra.    | J. Wood-Mason, Esq.                                   |
| Bábú Asutosh Mukhopádhyaý.   |   |

#### PHILOLOGICAL COMMITTEE.

|                                       |  |
|---------------------------------------|--|
| Nawáb Abdul Latif Bahádur.            | Bábú Nilmani Mukerji.                                |
| J. Beames, Esq.                       | Mahámahopádhyaý Pandit Moheśa<br>chandra Nyáyaratna. |
| Bábú Gaur Dás Bysack.                 | Captain D. C. Phillott.                              |
| Dr. A. Führer.                        | Bábú Rajkumár Sarvádhyakari.                         |
| G. A. Grierson, Esq.                  | Sir Sayid Ahmad.                                     |
| Bábú Pratápa Chandra Ghosha.          | Hon. Dr. Mahendra Lál Sarkár.                        |
| Maulvi Khudá Baksh Khán Bahá-<br>dur. | Pandit Hara Prasád Shástri.                          |
| C. J. Lyall, Esq.                     | C. H. Tawney, Esq.                                   |
| J. Mann, Esq.                         | Captain R. C. Temple.                                |
| Rájá Rájendra Lála Mitra.             | Dr. G. Thibaut.                                      |
| Bábú Bhudeva Mukerji.                 |  |

## COINS COMMITTEE.

|                           |                   |
|---------------------------|-------------------|
| Dr. A. Führer.            | Dr. J. Scully.    |
| Rájá Rájendra Lála Mitra. | V. A. Smith, Esq. |
| J. H. Rivett-Carnac, Esq. |                   |

## HISTORY AND ARCHEOLOGICAL COMMITTEE.

|                              |                           |
|------------------------------|---------------------------|
| Hon. Justice Amir Ali.       | Mahámahopádhay Kavirája   |
| J. Beames, Esq.              | Shyamaldás.               |
| Bábú Gaur Dás Bysack.        | Rájá Rájendra Lála Mitra. |
| W. H. P. Driver, Esq.        | J. H. Rivett-Carnac, Esq. |
| Dr. A. Führer.               | Captain R. C. Temple.     |
| Bábú Pratápa Chandra Ghosha. | J. Wood-Mason, Esq.       |

## NATURAL HISTORY COMMITTEE.

|                        |                       |
|------------------------|-----------------------|
| Dr. A. W. Alcock.      | L. de Nicéville, Esq. |
| Dr. A. Barclay.        | Dr. Fritz Noetling.   |
| E. C. Cotes, Esq.      | R. D. Oldham, Esq.    |
| Dr. D. D. Cunningham.  | S. E. Peal, Esq.      |
| J. F. Duthie, Esq.     | Dr. J. Scully.        |
| Dr. G. M. Giles.       | Dr. J. H. Tull Walsh. |
| Dr. G. King.           | J. Wood-Mason, Esq.   |
| C. S. Middlemiss, Esq. |                       |

## PHYSICAL SCIENCE COMMITTEE.

|                          |                               |
|--------------------------|-------------------------------|
| Dr. J. R. Adie.          | Bábú Asutosh Mukhopádhyaý.    |
| Dr. A. W. Alcock.        | Dr. Fritz Noetling.           |
| P. N. Bose, Esq.         | R. D. Oldham, Esq.            |
| Bábú Gaur Dás Bysack.    | A. Pedler, Esq.               |
| Dr. D. D. Cunningham.    | Dr. D. Prain.                 |
| J. Eliot, Esq.           | Hon. Dr. Mahendra Lál Sarkár. |
| S. R. Elson, Esq.        | Dr. J. Scully.                |
| Dr. G. M. Giles.         | Dr. W. J. Simpson.            |
| Dr. G. King.             | Col. H. Thuillier.            |
| Rev. Father E. Lafont.   | Colonel J. Waterhouse.        |
| J. J. D. La Touche, Esq. | J. Wood-Mason, Esq.           |
| C. S. Middlemiss, Esq.   |                               |

The PHILOLOGICAL SECRETARY exhibited a photograph of the inscription on the Monument which commemorates the Patna Massacres in October 1763, forwarded by Mr. Beveridge.

Rev. H. B. Hyde stated that he remembered to have noticed in the General Letters from the Court of Directors (series now at the Home

office here), that this Patna monument was erected by the Council and that the Court censured this expenditure of their money.

The Proposal of the Council to extend the permission given of investing half a lakh of rupees of the Society's *Permanent Reserve Fund* in Municipal or Port Trust Debentures, so as to include the alternative of fixed deposits in Calcutta Banks, was brought forward for consideration.

Mr. Tawney opposed the proposal as, in his opinion, it practically amounted to lending the money of the Society without security.

The Proposal was agreed to.

Dr. J. H. Tull Walsh gave notice of the following proposal, which he intends to bring forward at the next meeting of the Society.

"That with a view to making the meetings of the Society more interesting to individual members, two sections be formed, A.—Literature and Archæology, etc., B.—Natural Sciences. That these sections have separate evenings for the holding of meetings and for the reading of papers on subjects interesting to the members of the respective sections."

Bábú Sarat Chandra Dás exhibited some old and modern coins of Tibet and read a note on them.

The notes and the coins will be published in the Journal, Part I.

The following papers were read:—

1. *A list of the Butterflies of Engerno, with some remarks on the Demeridae.*—By WILLIAM DOHERTY, *Cincinnati, U. S. A.* Communicated by the NATURAL HISTORY SECRETARY.

2. *The Butterflies of Sumba.*—By WILLIAM DOHERTY, *Cincinnati, U. S. A.* Communicated by the NATURAL HISTORY SECRETARY.

3. *On certain Spiders which mimic Ants.*—By DR. J. H. TULL WALSH.

4. *Catalogue of Oriental Diptera.*—By MONS. J. BIGOT. Communicated by the NATURAL HISTORY SECRETARY.

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





## LIBRARY.

The following additions have been made to the Library since the meeting held in February last.

## TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

- Berlin. Der Gesellschaft Naturforschender Freunde zu Berlin, 1890.  
 Bombay. The Indian Antiquary,—Vol. XX, Parts 243—44.  
 Budapest. La Société Hongroise de Géographie,—Bulletin, Tome XVIII, Nos. 7—9.  
 Calcutta. Indian Engineering,—Vol. IX, Nos. 6—9, and Index to Vol. VIII.  
 ———. Photographic Society of India,—Journal, Vol. IV, No. 2.  
 Genoa. Museo Civico di Storia Naturale di Genova,—Annali, serie 2<sup>a</sup>, Vols. VII—IX.  
 The Hague. Koninklijk Instituut voor de Taal-, Land-en Volkenkunde van Nederlandsch-Indië,—Bijdragen tot de Taal- Land-en Volkenkunde van Nederlandsch-Indië, Deel VI, Aflevering 1.  
 Ithaca. Cornell University,—Library Bulletin, Vol. II, No. 14.  
 Jassy. Societății Științifice și Literare din Iasi,—Arhiva, Anno II, No. 5.  
 Liège. Société Géologique de Belgique,—Annales, Tome XVI, Nos. 2 et 4.  
 London. Institution of Electrical Engineers,—Journal, Vol. XIX, No. 90.  
 ———. Nature,—Vol. XLIII, Nos. 1108—10.  
 ———. The Academy, Nos. 977—79.  
 ———. The Athenæum, Nos. 3300—2.  
 Mendon, Illinois. The American Antiquarian and Oriental Journal,—Vol. XIII, No. 1,  
 Newport, R. I. Newport Natural History Society,—Proceedings, 1889—90.  
 Paris. La Société de Géographie,—Compte Rendu des Séances, No. 1, 1891.  
 Philadelphia. Journal of Comparative Medicine and Veterinary Archives,—Vol. XII, No. 1.  
 Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno V, No. 13.

- Rome La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XIX, Disp. 12<sup>a</sup> et Index Tome XIX.
- Roorkee. The Indian Forester,—Vol. XVI, Nos. 9—12.
- Sydney. Linnean Society of New South Wales,—Proceedings, Vol. V, Part, 3.
- . Royal Society of New South Wales,—Journal and Proceedings, Vol. XXIV, Part 1.
- Stockholm. Société Entomologique de Stockholm,—Journal Entomologique, No. 5, 1889; Nos. 1—4, 1890,
- Zagreb. Hrvatskoga Arkeologickoga Drutzva,—Viestnik, Godina XIII, Br. 1.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- BLOOMFIELD, MAURICE. Contributions to the Interpretation of the Veda, 2nd series (Reprinted from the Journal of Philology, Vol. XI, No. 3). 8vo. Baltimore, 1890.
- CULIN, STEWART. The I Hing or "Patriotic Rising." A Secret Society among the Chinese in America. 8vo. 1890.
- RÁY, PRATÁPA CHANDRA, C. I. E. The Mahabharata, translated into English Prose, Part 64. 8vo. Calcutta, 1891.

### MISCELLANEOUS PRESENTATIONS.

Abstract Account of the treatment and out-turn of the experimental portion of the Government Farm, Nagpur, from 1884-85 to 1889-90. Fcp.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Magnetical and Meteorological Observations made at the Government Observatory, Bombay, in 1888 and 1889. 4to. Bombay, 1890.

COLABA OBSERVATORY.

Report of the Director of the Colombo Museum for 1889. Fcp. Colombo, 1890.

COLOMBO MUSEUM.

Selections from the Records of the Government of India, Home Department, No. CCLXXV.—Reports on Publications issued and registered in the several provinces of British India during the year 1889. Fcp. Calcutta, 1890.

GOVERNMENT OF BENGAL.

The Fauna of British India, including Ceylon and Burma. Reptilia and Batrachia. By George A. Boulenger. 8vo. London, 1890.

The Indian Antiquary, Vol. XX, Part 243, January 1891. 4to. Bombay, 1891.

Memorandum by the Under-Secretary of State for India, relating to the Accounts of the Government of India for 1888-89, and the Estimate for 1889-90 and 1890-91. Fcp. London, 1890.

Report from the Select Committee on East India (Civil Servants); with the Proceedings of the Committee. Fcp. London, 1891.

Statement exhibiting the Moral and Material Progress and Condition of India during the year 1888-89. No. 13. Fcp. London, 1890.

Usha, Part 7. 8vo. Calcutta, 1891.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Scientific Results of the Second Yarkand Mission; based upon the collections and notes of the late Ferdinand Stoliczka, Ph. D. Coleoptera. 4to. Calcutta 1890.

GOVERNMENT OF INDIA, REV. AND AGRI. DEPARTMENT.

Report on the Administration of the N.-W. Provinces and Oudh, for the year ending 31st March 1890. Fcp. Allahabad, 1891.

GOVERNMENT OF N.-W. P. AND OUDH.

Map to accompany the Settlement Report of the Ludhiana District. Sheets.

GOVERNMENT OF THE PUNJAB.

The Laying of the Foundation stone of the Vizianagram Laboratory of the Indian Association for the Cultivation of Science, March, 27th 1890. 8vo. Calcutta, 1890.

Report of the Thirteenth Annual Meeting of the Indian Association for the Cultivation of Science held March 1890. 8vo. Calcutta, 1890.

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE.

De Badoej's door Dr. Jul Jacobs en J. J. Meijer. 8vo. Hague, 1891.

KÖNINKLIJK INSTITUUT VOOR DE TAAL,-LAND EN VOLKENKUNDE  
VAN NEDERLANDSCH-INDIE, HAGUE.

Inquiry concerning the site of ancient Palibothra. By William Francklin. 4to. London, 1815.

Javaansche Spraakkunst. A volume of plates. 4to. London.

Researches in Assyria, Babylonia, and Chaldæa. By William Ainsworth, F. G. S., F. R. G. S. 8vo. London 1858.

Sanskrit Mahabharat, Parts I—IV (in 2 vols.). 4to. Burdwan, 1862.

BÁBÚ ASUTOSH MUKHAPÁDHYÁY.

Return of Wrecks and Casualties in Indian Waters for the year 1889. Fcp. Calcutta, 1891.

PORT OFFICER, CALCUTTA.

Bulletin of Miscellaneous Information, 1890. 8vo. London, 1890.

ROYAL GARDENS, KEW.

Results of the Magnetical and Meteorological Observations made at the Royal Observatory, Greenwich, in the year 1888. 4to. London, 1890.

ROYAL OBSERVATORY, GREENWICH.

### PERIODICALS PURCHASED.

- Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 2.  
 Geneva. Archives des Sciences Physiques et Naturelles,—Tome XXV, No. 1.  
 Leipzig. Annalen der Physik und Chemie,—Band XLII, Heft 2.  
 ———. ———. Beiblätter, Band XV, Stück 1.  
 London. The Chemical News,—Vol. LXIII, Nos. 1626—28.  
 Paris. Revue Scientifique,—Tome XLVII, Nos. 4—6.

### BOOKS PURCHASED.

- JACQUEMONT, VICTOR. Letters from India; describing a journey in the British Dominions of India, Tibet, Lahore, and Cashmere, during the years 1828—31. 8vo. London, 1834.  
 RENNELL, JAMES, F. R. S. Memoir of a map of Hindoostan of the Mogal Empire. Edition 1788. 4to. London, 1788.  
 WILCOCKE, SAMUEL HULL. Voyages to the East-Indies; by the late John Splinter Stavorinus. Translated from the original Dutch. Vols. I—III. 8vo. London, 1798.

**PROCEEDINGS**  
**OF THE**  
**ASIATIC SOCIETY OF BENGAL,**  
**FOR APRIL, 1891.**

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st April, 1891, at 9-15 P. M.

A. PEDLER, Esq., F. C. S., Vice-President, in the chair.

The following members were present :—

Bábú Sarat Chandra Dás, P. Donaldson, Esq., Bábú Rajani Kánta Gupta, Dr. A. F. R. Hoernle, Rev. H. B. Hyde, W. H. Jobbins, Esq., Rev. Father E. Lafont, C. Little, Esq., Kumár Rameswár Maliáh, Bábú Asutosh Mukhopádhyáy, T. R. Munro, Esq., L. de Nicéville, Esq., J. D. Nimmo, Esq., W. L. Sclater, Esq., Pandit Hara Prasád Shástri, C. H. Tawney, Esq., Colonel J. Waterhouse.

Visitors :—Dr. K. S. Macdonald, Dr. W. W. Sheppard.

The minutes of the last meeting were read and confirmed.

Eighteen presentations were announced, details of which are given in the Library List appended.

The following gentleman, duly proposed and seconded at the last meeting of the Society was balloted for and elected an Ordinary Member :—

E. C. S. Baker, Esq.

The following gentleman is a candidate for election at the next meeting :—

C. B. Wilson, Esq., Professor, Presidency College, proposed by A. Pedler, Esq., seconded by C. Little, Esq.

The SECRETARY reported the death of Dr. Otakara Feistmantila, a foreign member of the Society.

The PRESIDENT read a circular from the Royal Society of New South Wales, enumerating prizes to be given for original researches on certain subjects connected with Australia.

Dr. A. F. Rudolf Hoernle again exhibited the old birch bark MS., brought by Lieut. Bower from Kashgaria, and made the following remarks concerning it :

“ This MS. was first shown to the Society in November last, in the Proceedings of which month an account of its acquisition by Lieut. Bower is printed. That account appears to have been reprinted in the *Bombay Gazette*, a copy of which accidentally fell into my hands in Aden on my way out to India in March last. It was the first notice I had of it ; Major Cumberland, whose companion Lieut. Bower had been on his travels, was a fellow-passenger of mine and gave me corroborative information ; all this made me very anxious to see the MS. On my reaching Calcutta I was very glad to find that the MS. was still in the possession of Colonel Waterhouse, who very kindly at once made it over to me for examination.

“ The MS. has been with me only a little more than a week, and my examination of it, of course, is not yet finished ; but I have already been able to determine several important points ; and as hitherto it has been impossible to ascertain anything about the character and contents of the manuscript, I will not delay communicating my information, though further examination may possibly induce me to modify it on some minor points.

“ The first point that strikes one on looking through the MS. is, that it appears to be written in three, if not four, different styles. This point has been already noticed in the November account. But what is more,—the difference is not (as may seem at first sight) merely one of careful and slovenly writing, but one of variety of alphabet. The whole manuscript is written in what Mr. Fleet (in his *Gupta Inscriptions* in Volume III of the *Corpus Inscriptionum Indicarum*, p. 3) distinguishes as the Northern class of the Nágari alphabet, which is characterised by the peculiar form of the *m*. Of this class, however, three varieties are observable in the MS. The test-letter of these varieties is the palatal *ś*, which is formed in three different ways. The first of them, with a rounded top, is that commonly used in the Northern Gupta inscriptions ; the other two closely approach the form

of the palatal *ś* in the *Sáradá* alphabet of Kashmir. The first variety of writing is shown in the upper portion of Plate VI published in the November Proceedings; and the third variety in the lower portion. Of the second variety—one of great neatness—a specimen is now figured in the lower part of Plate I, which accompanies this account. The upper part of this plate gives another specimen of the first variety. The three varieties have no reference to difference of age, but merely indicate difference of locality. The second and third varieties, as shown by their approach to the *Sáradá* characters, were probably current in the extreme North-West of the great area of the Northern class of alphabets, while the first variety was used in the remainder of that area.

“On examining more closely the several leaves, I noticed that they were evidently mixed up. The leaves written in the different hands followed one another without any order. But I also noticed that many of the leaves were marked with numbers on their left hand margin. Accordingly I cut the string which passed through them and held them together, and arranged them in their proper order, as indicated by their numbers. It then was seen, that 33 leaves, forming the main portion of the MS., followed in consecutive order, and that these 33 leaves were written throughout in the first variety of the alphabet. This variety extended to the obverse of the 33rd leaf; but on the reverse of that leaf commenced the second variety, and went on over five leaves. The remainder of the leaves were written in the third variety.

“It further seemed that the three varieties of writing distinguished three different works, the reasons of which I shall explain presently.

“I now took up the main portion (of 33 leaves), and deciphering the first page of the first leaf, discovered that it contained an introduction, giving the name of the work and detailing its contents. The work is a compendium of medicine, is named the *Návanítaka*, and consists of sixteen chapters (*adhyáya*). That it was written\* by a Buddhist, is seen from the initiatory salutation of the “*Tathágatas*” or Buddhas. But I have not yet succeeded in tracing anywhere the name of its author.

“The following is a transcript and translation of the introduction. It is written in Sanskrit verse (*śloka*). In fact the contents of the whole MS. appear to be composed in *ślokas*.”

\* The form of salutation varies according to the creed of the writer of a MS. The present salutation is, therefore, not strictly evidence as to the creed of the author of the work, but only as to that of the scribe of the MS.

(line 1) नमस्वाध्यायनेभ्यः ।

प्राक्प्रचीतेभ्यश्चर्षीणां योगमुक्तेस्त्वमन्वितम् [1]

वक्ष्ये च सिद्धसंकर्ष्यं नाम्ना वै नावनीतकम् ॥१॥

(line 2) नामा आधिपरीतानां यथा (\*जीवा)श्च यद्वितम् [1]

कुमाराणां हितं यच्च तस्यर्षेभिरुच्यते ॥

समासरत्तपुत्रीनां भिषजां प्रीतिवर्द्धनम् [1]

योगवाङ्मनसापि विस्तरञ्च मनोगुणम् ॥२॥

आध्यायं पूर्वयोगानां प्रथमं चाप (line 3) वक्ष्यते [1]

द्वितीयं हृतपानानां तृतीयं तैलसञ्चितम् ॥३॥

चतुर्थं भिषकं नाम नामायाधिधिकित्थितम् [1]

पञ्चमं वक्ष्ययोगानां रसायनविधानतः ॥४॥ †

(line 4) सप्तमं च यवान्गुणां दृश्यमदृश्यमुच्यते [1]

नेत्रांजनानां नवमं द्रव्यं केसरस्रजनम् ॥५॥

अभयाकल्पनामाकल्पनैकादशमुच्यते [1]

द्वादशं स्याच्छैलजतोषिव (line 5) कस्य चयोद्गमम् ॥६॥

कुमारधृत्यमप्यथ स्यात्पातु[र्द्वय]मिष्यते [1]

वन्द्याधिकित्थिताच्छं च ज्ञेयं पञ्चदशं गुणैः ॥७॥

शुभगाधिकित्थिताच्छं च तथा षोडशकं मतम् [1]

इत्येते षोड (line 6) ग्राह्याया विज्ञेया नावनीतकम् ॥ ८ ॥

नेदं दद्यादपुत्राय न चाभावे कश्चन [1]

अग्निष्ये प्रसवो न स्यात्कर्णस्य इति मे मतिः ॥९॥

\* Conjectural ; the leaf is here defective showing only portions of letters.

† There is here a difficulty about the sixth chapter. As the *rasāyana* are a distinct subject from the *vasti*, it seems clear that the word *rasāyana-vidhānataḥ* refers to the sixth chapter. The text may be corrupt, and should probably be read *rasāyana-vidhā tataḥ* i. e., 'next the rules about elixirs,' or perhaps *rasāyana-vidhis = tataḥ*, the word *tataḥ* indicating the sixth chapter.

‡ The two *aksharas* *द्वय* are omitted in the MS.



*Translation.\**

‘Salutation to the Tathágatas.—I am going to write an approved compendium (of medicine), called the Návanítaka, based on the excellent system of the Maharshis as composed by them in olden times. Whatever is useful to men and women afflicted with various diseases; whatever is also useful for children, that will all be declared in this book. It will commend itself to those physicians whose minds delight in conciseness; but on account of the multiplicity of its prescriptions, it will also be welcome to those whose minds love many details.

‘The first chapter will give prescriptions of powders; the second of clarified butter; the third will be concerned with oils. The fourth will be about the mixtures which are used in the treatment of various diseases. The fifth will give prescriptions of clysters, the sixth rules about elixirs. The seventh will be about gruels, the eighth about aphrodisiacs, the ninth about eyewashes, the tenth about hair-dyes. The eleventh will be concerned with applications of the yellow myrobalan.† The twelfth will be about bitumen, the thirteenth about castor-oil. The fourteenth will be concerned with the treatment of children; the fifteenth will deal with the treatment of barren women. Lastly the sixteenth will be about the treatment of women who have children. These sixteen chapters will constitute the Návanítaka. It should not be given to any one who has no son, nor to any one who has no brother; nor should it be taught to any one who has no disciple.’

“After this commences the first chapter on the *chúrnas* or powders; it extends down to the obverse of the fourth leaf, where its end is indicated by the words *नावनीतके चूर्णयोगस्तु समाप्तः । प्रथमोऽध्यायस्तु समाप्तः ।* i. e., ‘in the Návanítaka the prescriptions of powders are finished; the first chapter is finished.’ The following are some of the names of the powders that I have noticed: *varádhamañaka*, *shadyádika*, *tiktaka*, *vṛisha-dvádaśaka*, *ariśha*, etc.

“The second chapter on clarified butter extends to the obverse of the ninth leaf, where we find the remark *द्वितीयोऽध्यायः । बलानैतं प्रवक्ष्यामि वातरोमविषर्षेणम् ।* i. e., ‘(here ends) the second chapter; I shall (now) explain the *Velá* oil, the cure for rheumatism.’ The following are some of the names of clarified butter; after each name the number of ślokas about it are given: thus *amṛita-práśa* with 10 ślokas, *kalyánaka* with 4, *tiktaka* with 4, *mahátiktaka* with 7, *mṛidvika* with 3, *máyúra* with 7, etc.

\* The translation is tentative. Some of the medical terms are not known to me, nor to those Kavirájs whom I consulted.

† *Abhayá*, I am told by a Kaviráj, is a synonym of *hartakt*. See also Glossary to the Bibliotheca Indica edition of the *Aśva-Vaidyaka*.

“The third chapter on oils extends to the obverse of the thirteenth leaf, where it ends thus: नावनीतके सिद्धसङ्घर्षे तैलपक्वसुनीयो ज्ञायाः । अतः परं प्रकीर्तयामास्यन्मन्त्रः, *i. e.*, ‘(here ends) the third chapter on oils in the approved compendium *Návanítaka*; in the following we shall declare miscellaneous prescriptions.’ The following are some of the kinds of oil spoken of: *valá* oil in 16 ślokas, *amrita* oil in 25 ślokas, *atvagandhá* oil, etc.

“The fourth chapter on mixtures or miscellaneous prescriptions ends on the obverse of the seventeenth leaf, with the words: इति नावनीतके मिश्रको ज्ञायाश्चतुर्थः । अतः परं प्रवक्ष्यामि वल्लवर्षप्रसादकम् येन रसा निवर्द्धन्ते रसं चैवोपजायन्ते । *i. e.*, ‘here (ends) the fourth chapter in the *Návanítaka*, (called) *Mísra*; in the sequel I am going to declare means of improving vigour and colour, by which good spirits are increased and vigour also is generated.’ Of this chapter I may give the following verses as a specimen :—

सद्यम्बुद्वान्मिश्रकाम्बुस्यक्षीरे निर्व्याय पीयवेत् ।  
 वातरक्तप्रदेहसौख्येर्वा मधुकाचितैः ॥ [१ ॥]  
 म्लः प्रक्षेपः सद्युतैश्चमसौक्षीरमीधुमैः ।  
 वातरक्तहरं श्रेयं प्रधानमिदमोपधम् ॥ [२ ॥]  
 वातशोथितप्रश्मनं योगद्वयं स्त्री २ ॥  
 सपिष्टैश्चं मुञ्चं शुकं पद्मं विश्वभेषजं ।  
 पीतमेतद्भवेत्सद्यस्तर्पणं विकग्रस्तमुत् ।  
 विषकं पिप्यसौक्ष्णं वचा कटकरोहिणी ।  
 पाठा वसुकवीजश्च हरीतक्यो मद्योपधम् ॥

*i. e.* (1) ‘Let thoroughly parched sesamum seed, well sprinkled into thickened milk, be pressed to consistency; or with the same sesamum seed mixed with liquorice a plaster may be made for rheumatism.

(2) Thickened goat’s milk and (flour of) wheat with clarified butter makes an excellent ointment. This may be considered the principal remedy against rheumatism (or gout).

The above are two prescriptions for the curing of rheumatism.

(1) Clarified butter, oil, treacle, vinegar, and, as the fifth, ginger; these, when drunk, are an instant remedy against pains in the lower part of the spine (*i. e.*, against lumbago).

(2) Castor-oil, the root of long pepper, the *vachá*-root, the *Helleborus niger*, the *Stephania Hernandifolia*, and the seed of *Holarrhena Antidysenterica* and *chebulic myrobalan* are a grand remedy.’

“From the fourth chapter onwards I have not yet been able fully to trace the remaining chapters. On the 24th and 25th leaves I have noticed several names of gruels or *yavāgū*, which belong to the seventh chapter.

“On the obverse of the 28th leaf I have noticed the ending of the 8th chapter, thus *भावनीतके सिद्धसंकर्षे नाभाचार्यमते हृषीकाः समाप्ताः । i. e.*, ‘here end the prescriptions of Aphrodisiacs (as set forth) in the approved compendium *Nāvanītaka* according to the doctrine of various *Āchāryas*.’

“On a subsequent leaf I have noticed portions of the eleventh chapter; and on another the beginnings of the twelfth and thirteenth chapters: thus *अथातः शिलाजतुकस्यं बाष्पास्त्रातः* and *अथातश्चिकनस्यं बाष्पातः । i. e.* ‘here we shall explain the application of bitumen’ and ‘here we explain the application of castor-oil.’

“So far as I can judge for the present, the MS. does not seem to be complete; though I cannot say whether much or little of it is lost.

“As I explained before, this medical work ends on the obverse of a certain leaf; and on the reverse of that leaf commences what appears to be a different work written in the second variety of the alphabet. At the bottom of the obverse of this leaf, marking apparently the end of the medical work, there is a line of writing, in the third variety of the alphabet. It runs thus *इत्यत्र चोवे चेतस्याधिकृत्ये मतस्याधिकरते स्माह ।* This would seem to have been added to the MS. by the scribe who wrote the third portion of the MS. I do not understand its meaning.

“The beginning of the second portion of the MS., which commences on the reverse of the leaf just referred to, runs thus:—

नमो नन्दिरद्रेक्षराय—नमो आचार्येभ्यः—नमो ईश्वराय—नमो माविभद्राय(?)—नमस्सुख्य-  
यक...\*—नमस्सुख्यदेवेभ्यः शिवाय नमः पठौये नमः प्रजापतये नमः रुद्राय नमः नमो  
वैश्वदेवाय नमो सवतानां नमः etc.

“The following is a specimen of the contents of this part of the manuscript. See Plate I, No. II, end of first line.

परिचिद्यते ते बुद्धिः..... †

(line 2) आविभद्रादिनिती यस्ते निष्कलः स भविष्यति ॥ शतपठः ४४४

आविभद्रादिभ्योऽपि चित्रं सुखं वा प्राप्स्यसे तथा ।

नात्युर्ध्वं नातिनीचं च फलमासादयिष्यसि—॥ द्वितीयशतपठः ॥ (line 3) [४४४]

\* The dots signify illegible *aksharas*.

† The other half of the sloka is broken away and lost.

आयसो ह्यने घोरो वेभ्यश्च तव विपश्चः ।

निष्फलं ह्यने कार्यं प्रच्छेद्ये यस्य कारणा—॥ द्वितीयभाष्यः ॥ १४४

“ This may be thus translated :

‘ 1, Thy intelligence is spoiled, ..... Whatever undertaking thou thinkest of, that will be fruitless.

‘ 2, From diseases thou shalt quickly be delivered ; and happiness thou shalt obtain ; and a result thou shalt enjoy, neither very great nor very small.

‘ 3, Fearful is sure to be the exertion with those, with whom thou hast a quarrel ; fruitless is sure to be the business of which thou askest the causes.’

“ The whole consists of similar proverbial sayings divided in sets. Thus besides the above three *sápaṣa*, there are three *máli*, five *bahula*, three *káṣa*, four *bhadrá*, six *śakti*, six *dundubhi*, three *vrisha*, three *prashyá*, three *viṣi*, three *karnṇa*, three *sajá*, three *kána*, three *chunchuna*, three *pañji* or *páñji*, etc. What these terms may mean I do not know.

“ The system of enumeration, however, is curious and noteworthy. The three *sápaṣa* are indicated by varying the relative position of three numbers : 443, 434, 344. Similarly the six *śakti* are enumerated by the variations of 341 = first, 134 = second, 413 = third, 314 = fourth, 143 = fifth, 431 = sixth.

“ I may here note that the numbers are indicated, through all the three portions of the MS., not by means of numeral figures, but numeral letters. Nor is the modern decimal system of notation used, but the older one which indicated the tens, hundreds, etc. by separate signs ; thus 16 is expressed by the symbols for 10 and 6, 25 by those for 20 and 5, etc.

“ Regarding the third portion of the MS., I can say, for the present but little. It is written in a third variety of the alphabet. It appears to contain charms or prayers, and to be of small interest. But I have not yet been able to examine it more closely. A specimen of it is given in the lower portion of the plate which accompanies the account in the November Proceedings. That specimen reads thus :

line 1, हुन्दुमी - गर्जनी - वर्षणी - स्रोडनी - पतनी - पाचनी - वारिणी - कंपनी - मद्नी(?) . . . . . \*

line 2, मे - गोलयाः परिवेलाय वर्षतु देवो समतेन - इति किञ्चि सदा (read सदा ?) । मैषी मे भितराद्वेषु (read धृत ० ?) मैषी मैरा-

\* The dots signify illegible *aksharas*.

line 3, वक्षेवु च - विरूपाक्षेवु मे मैत्री क्षत्र्यगौतमकेवु च - मणिना नामराज्ञा मे मैत्री वासुकीना-

line 4, मणि - दक्षपादेवु .वेपु\* पूर्वभद्रेवु च सदा - मन्दोपमन्दो मे मागा वर्षवन्तो वराहिनः देवा-

line 5, सुदं पि संप्रामननुभवति मरुचिका - अमवसनेन वरचेन मैत्री संहारकेन च - तचकेन अमतेन

line 6, तथा वासुसुचेन च - अपराजितेन मे मैत्री मैत्री च्छिवसुतेन च - मरामन-  
सिना नित्यं तथैव च

i. e., 'may God rain all over my territory; hail to Iikisi; my loving trust is in Dhṛitarāshṭra; my loving trust is in Nairāvāṇa (Airāvāṇa ?); in Virūpāksha is my loving trust and in Kriṣṇa Gau-  
tama; in Maṇi, the king of Nāgas is my loving trust, also in Vāsuki; in Daṇḍapāda, in ? and in Pūrṇabhadra at all times; in Nanda and Upananda, the beautiful and glorious, who most successfully maintain a contest even with the Gods and Asuras; in Anavatapta, in Varuṇa is my loving trust, and in Saṃhāraka; in Tākshaka, Ananta, and further in Vāsumukha; in Aparājita is my loving trust; and my loving trust is in Chhibbasuta (?); and likewise in Mahāmanasvin perpetually.'

"The language of the manuscript is Sanskrit; not, however, the ordinary standard Sanskrit, but that species of ungrammatical Sanskrit, which formerly used to be known by the name of the Gāthā dialect, and which was the language used for literary purposes by the Northern or North-Western Buddhists, outside the schools of Brahmanic learning, in the centuries immediately before and after the commencement of the Christian era. It was a species of Sanskrit which in inflexion, syntax and metrics was not bound by the ordinary rules and usages of Sanskrit Grammar. The awkwardness of the Sanskrit in the introductory verses is noticeable. The word *adhyāya* is used as being of the neuter gender, while in the standard Sanskrit it is masculine. In the second extract we have *piṣhayet* for the regular Sanskrit *peṣhayet*, and, in the colophon quoted above it, the wrong concord *valaṃ upajayante* (singular subject with plural predicate). In the third extract, *parihiyate* stands for *parihīyate* and *kāraṇā* is used as the accusative plural, instead of *kāraṇāni*. In the fourth extract, we have the irregular sandhi *devo samantena* for the ordinary Sanskrit *devaḥ samantena*; again the initial *a* of *anavatapta* and of *aparājita* must be dropped or taken as absorbed in the preceding syllable, in order to make the verse (*śloka*) scan; moreover the initial two shorts of

*varuṇena* must be taken to be equivalent to one long, in order to conform the line to the ordinary rules of a śloka; so also in the first half line of the eighth śloka in the first extract, where the two shorts of *subhagá* must be taken as one long. Many more examples of a similar kind might be quoted.

“Now as to the age of the MS., I believe it to be very old and written not later than the end of the 5th century A. D. The style of writing is exactly like that which we meet with in the early Gupta inscriptions, between 450 and 550 A. D. These may best be seen in Mr. Fleet’s volume III of the *Corpus Inscriptionum Indicarum*.

“One of the test letters, for the determination of age, of the Nágari alphabet—and the most important one in the present case—is the akshara *ya*. Its original form was **𑀧**; this changed to **𑀧** or **𑀧**; next the left hand loop-line was extended to the point of junction of the perpendicular stroke, **𑀧**. The object of this, of course, was to permit of the letter being written with one continuous movement of the hand. The next step was to dissolve the point of junction, **𑀧**, a natural consequence of quick writing. From this point, the modern form was quickly reached. The whole course of this development is clearly traceable during the period (about 400 to 600 A. D.) of the early Gupta alphabet. The initial forms **𑀧** and **𑀧** we find still used throughout in the Allahabad pillar inscription of Samudra Gupta (about 400 A. D., see Fleet, *ibid.*, p. 6), the Udayagiri Cave inscription of Chandra Gupta II (c. 410 A. D., *ibid.*, p. 35), the Bilsaḍ pillar inscription of Kumára Gupta (415 A. D., *ibid.*, p. 45), the Mathurá image inscription of Skanda Gupta (454 A. D., *ibid.*, p. 263), the Bhitari pillar inscription of Skanda Gupta (c. 460 A. D., *ibid.*, p. 53), the Kahaum pillar inscription of Skanda Gupta (460 A. D., *ibid.*, p. 67), etc. The final form **𑀧** is already used throughout the Bodhgaya inscription of Mahánáman (588 A. D., *ibid.*, p. 274), and in the Asphaḍ stone inscription of Adityasena (c. 650; *ibid.*, p. 202). The intermediate form **𑀧** is only found in the Indor copper plate inscription of Skanda Gupta, of 465 A. D. (*ibid.*, p. 68), the Mandasor stone inscription of Kumára Gupta, of 473 A. D. (*ibid.*, p. 79), the Majhgawan copperplate inscription of Hastin, of 510 A. D. (*ibid.*, p. 106), and the Jaunpur stone inscription of Íśvaravarman of about 520 A. D. (*ibid.*, p. 228). With regard to this intermediate form it is particularly to be noticed, that it occurs side by side with the older forms **𑀧** or **𑀧**, and that it is exclusively used with the vowels *e* and *o*. Thus we have it in the Indore plate in *yojyam* (line 7); again in the Mandasor inscription in *yo* and *priyo* (line 14); again in the Majhgawan plate in *chhreyo* (line 14), *yo* (line 16), *ye* (line 18); again

in the Jaunpur inscription in *anvavāye* (line 2). Now precisely the same practice is noticeable in the main portion of the MS., written in the first variety of the alphabet. The older form is used throughout, except in connection with the vowels *e* and *o*, when the intermediate form is used optionally with the older form. Thus in Plate I, No. I, the intermediate form occurs twice in the 2nd line in *yoga*, and in the 9th line in *kalpayet*. Again in the upper portion of Plate VI of the November Proceedings the intermediate form occurs in the middle of the third line in *lepayet*, and in the beginning of the 6th line in *miśrayet*; also twice in the beginning of the 11th line in *prayojayet*. On the other hand we have the older form in Plate I, No. I, 10th line, *chūrṇāyēt*, and in Plate VI of the November Proceedings, 2nd line, *kalpayet*; and both the older and intermediate forms we have in the same Plate VI, middle of 6th line, *prayojayet*. Once I have noticed the intermediate form with the analogous case of the vowel *ai*, viz., in Plate VI, middle of 4th line, *jīvanīyāit=cha*. The inscriptions show that this intermediate form was peculiar to a particular period, the limits of which may be roughly put down as between 470 and 530 A. D. It is not found in any inscription either before or after these dates. And as inscriptions longer conserve archaic forms of writing than manuscripts, that fact further proves that the date of writing the MS. must fall somewhere within that period, that is, about 500 A. D. I have not noticed the intermediate form of *ya* either in the second or in the third portion of the MS. In both these portions, the older forms are used exclusively; and as these portions were certainly written after the first portion, they confirm the conclusion, that the writing of the whole MS. cannot be placed later than 500 A. D.

“As tending to confirm this conclusion, it may be further noted that throughout the MS., wherever there is any occasion to use a number, whether in the body of the work in numbering ślokas, or on the margin of the leaves in numbering the latter, the ancient practice of employing numeral letters is exclusively followed, while numeral figures are never used. What is more,—there is no trace of the knowledge of the modern system of notation with the help of the zero and the value of position; every numeral sign has its own fixed value, independent of the position it may occupy in a series, there being separate signs for the units, the tens, hundreds, etc. Thus ‘twenty-five’ is not expressed by the signs for ‘two’ and ‘five’ (i. e. 25), placed in a certain order, which order imparts the value of ‘twenty’ to the sign for ‘two;’ but it is expressed by two special signs, one for ‘twenty,’ the other for ‘five.’ That the ‘value of position’ was not known to the writer of the second part of the MS., seems

to be clearly shown by his curious system of numbering the several ślokas of a set. Thus the three ślokas of the *śūpaṭa* set are numbered 443, 434 and 344, which does not mean 'four hundred and forty-three,' 'four hundred and thirty-four,' and 'three hundred and forty-four.' This would have no meaning. The position of the figures in the three series imparts no numerical value; 4 means 'four,' and 3 means 'three,' in whatever position they may be. The three series can only be read 'four four three,' 'four three four' and 'three four four;' and the variation in the position of the three unit figures only serves to enumerate three different ślokas. Now the discoveries of the zero and of the value of position may, with much probability, be placed at some time within the sixth century A. D.; and thus the writing of our MS., must be referred to a time, not later than the beginning of that century, or about 500 A. D.

"This, I believe, makes our MS. the oldest Indian written book that is known to exist. There is indeed another MS. which is nearly as old; that is, the so-called Horiuzi MS., published in the *Anecdota Oxoniensia*, Vol. III. But if I understand the case rightly, that MS. consists only of two leaves, and is preserved, not in India, but in Japan. Professor Bühler, who has described it, assigns to it the date of about 550 A. D. The MSS., next in age, are two Nepalese of the Cambridge collection, viz., Add. 1049 and 1702, described in Mr. Bendall's Catalogue, pp. xxxix ff.; and the so-called Bakhshālī MS., described by myself in the *Indian Antiquary*, Vol. XVII, pp. 33ff. It will be observed that both Nepalese MSS. exhibit throughout the modern form of *ya* (though in slightly differing variations) as it became established at the end of the sixth century A. D. As the Bodhgaya inscription of Mahánáman, of 588 A. D., shows throughout the same form of *ya*, it appears to me not impossible that the MS., Add. 1049, dated Samvat 252, which is referred by Mr. Bendall to 857 A. D., may really be placed in 571 A. D. being dated in terms of the Gupta era. Neither the old, nor the intermediate forms of *ya* occur in the Nepalese MSS., while in our MS. these are the only forms that are employed, the modern form being, conspicuous by its entire absence.

"I may note one or two other peculiarities. In the first place, the oldest form of the long vowel *á* is a small horizontal stroke attached to the top of the right side of a consonant. A peculiar modification of this form is the attachment of the stroke to the middle of the right side. This form has, so far as I am aware, hitherto only been noticed in the Allahabad stone pillar inscription of Samudra Gupta, which dates from about 400 A. D., see Fleet, *Corpus Insc. Ind.* Vol. III., p. 4. Compare, e. g., the *akshara* न्ना of नान् in line 31 of that inscription with the न्ना of



नाम in line 4 and of संघाम in line 5 of the lower part of Plate VI in the November Proceedings. I have noticed this peculiar form of *á* only in the that portion of the MS., which is written in the third variety of the alphabet.

“In the second place a peculiarity of the style of writing of the period of the early Gupta inscriptions is the practice of appending a final consonant, *i. e.*, a consonant without an inherent vowel, below the line in very small size. In fact this practice is the early substitute of the modern *viráma*. Thus compare the very last word *पिवेत्* in the bottom line, and the word *चौरकम्* just three lines above it, in the upper portion of the plate in the November Proceedings, again *अश्वितम्* and *नावनीतकम्* in line 1, *सूर्ययेत्* in line 10 of Plate I, No. I, with the word *सचावत्* in line 11 of the Bilsad pillar inscription of Kumára Gupta, of 415 A. D. (Fleet, p. 44), or *तनीयम्* at the end of line 11 of the Kahaum stone pillar inscription of Skanda Gupta, of 460 A. D. (*ibid.*, p. 67), or *चौरकम्* at the end of line 9 of the Indore copperplate of Skanda Gupta, of 465 A. D. (*ibid.*, p. 70), or *सुप्यम्* in line 6 of the Gwaliyor inscription of Mihirakula, of about 515 A. D. (*ibid.*, p. 162), or *सिबत्* in line 1, *आध्वरात्* in l. 13, *भूतयेपात्* in l. 17 of the Mandasor inscription of Yasodharman, of 533 A. D. (*ibid.*, p. 152), or *कम्* in line 1 of the Jaunpur inscription of Ísavaravarman, of about 520 A. D. (*ibid.*, p. 229). This practice of spelling I have observed throughout every part of the manuscript.”

[PS. A fuller account of the MS., and specially of the reasons of dating it so early, I hope shortly to publish.]

The PHILOLOGICAL SECRETARY exhibited 5 Indo-Sassanian and 4 Mughal coins presented to the Society by the Government of Bombay through the Bombay Branch, Royal Asiatic Society.

The PHILOLOGICAL SECRETARY read the following report on a find of Treasure Trove Coins.

Report on four old coins, forwarded by the Secretary to the Government, N.-W. Provinces and Oudh, Financial Department, with his No.  $\frac{8790}{x, 25}$  dated 3rd June, 1890.

These four coins are stated to form a part of the find which is referred to in my Report of the 9th May 1890.

Three of them belong to precisely the same variety as the four coins, described in that Report. Nor are they in any better state of preservation; and afford no further help in determining the name of the king, who issued them. I may remark, however, that the name

*kritavarman*, as inscribed on the paper, in which the coins were received, is certainly read wrongly. For the reading *varman* there is absolutely no ground on the coins; *krita* may be correct; though the letters on the coin look more like *kriga*.

The fourth coin belongs to the same class of the so-called later Indo-Scythian coins of the "Kida" type; but to a different variety. The obverse shows, as usual, the standing figure of the king, with *keda* under his left arm; under his right arm are two letters कष *kaśa* or रष *raśa*; on the proper left margin there is a mutilated ष *sha*. The reverse shows the seated form of the goddess, and along the proper left margin श्री षष *S'ri Ohachcha* with faint traces of another (probably) conjunct letter. The full legend may have been श्री षषष *S'ri Chachchasga*, i. e., "of the illustrious (king) Chachcha." The name "Chachcha" appears to me perfectly clear on the coin; and I am disposed to ascribe the coin to the well-known Rája Chách of Sindh, whose history is related in the Cháchnáma (see Sir H. Elliot's History of India, Vol. I, p. 131). He reigned about 650 A. D.

COLONEL WATERHOUSE exhibited some silver and glass plates showing reversed deposits obtained by passing electric currents through photographic 'developers' containing thio-carbamides and said:—

At the meeting of the Society in August last, I exhibited some specimens of a curious reversal of the photographic image produced by adding small quantities of thio-carbamides or sulpho-ureas to the ordinary eikonogen developer, and showed that although reversal of the image was by no means uncommon, it was usually caused by over-exposure or some other abnormal action of light, whereas to produce these new reversals even less than the ordinary exposure was sufficient, and they appeared to be entirely due to some peculiar action of the thio-carbamide added in very minute quantities to an alkaline eikonogen developer.

At that time I was quite unable to offer any opinion as to the probable cause of these reversals, or as to how they were produced, beyond stating the probability that, although there were many points of difference, they would be found to be in accordance with the generally accepted theory worked out by Capt. Abney, and were due more or less to oxidation or rehalogenisation of the exposed parts of the film, and that owing to the peculiar reducing action of the alkaline thio-carbamides the film during development was practically in the same state as if it were over-exposed. It seemed also probable that sulphur was the active agent in producing the reversals.

Further work with these curious salts and especially with a compound salt of thio-carbamide and ammonium bromide, discovered by Prof. J. E. Reynolds in 1868 and called by him tetrathiocarbamid-ammonium bromide, which was found to be exceedingly active in producing perfect reversals of the image with very short exposures, led me to the belief that this complete change of deposit from the lights to the shadows of the photographic image must be more or less due to electro-chemical action. The subject of electro-chemistry is one of which I have little knowledge, but I have been able to make some simple experiments from which, though not conclusive, it seems probable that my surmise is correct, and so far as they go, they seem to establish that not only, as former observations by Lermontoff, Eder and Abney had shewn to be probable, is the ordinary process of photographic development of sensitive surfaces containing silver haloids, accompanied by electrical action, but that the addition of these minute quantities of thio-carbamides to the developer, greatly increases the intensity of the electrical action and produces a reversal of the current which should also account for the reversal of deposit.

With the aid of a very sensitive galvanometer, which has been kindly lent me by the Rev. Fr. Lafont, S. J., who also assisted me in the experiment, it was found that when a pair of pure silver plates coated with finely precipitated silver bromide, one of which had been exposed to light and the other not, were connected to the galvanometer so as to form a galvanic couple and immersed in the ordinary eikonogen developer, the exposed plate formed the negative pole and the needle was deflected to the left; whilst in the developer containing a little thio-sinamine, the exposed plate formed the positive pole and the needle was deflected to the right.

This experiment has been successfully repeated several times with silver plates prepared in the same way and with other thio-carbamides, also with silver plates bromised by dipping them in bromine water; and so far the occurrence of the reversal is well established. I propose to repeat the experiment before you though I cannot be certain of success. (*The reversal was successfully shown with bromised plates, the image of the needle and scale being projected on the wall.*)

I have also tried the same experiment with ordinary dry plates rendered conductive in various ways, the best of which appears to be gold leaf applied either on the face of the film or behind it. Gelatine offers very great resistance to the current, and though I have obtained distinct evidence of currents in both directions, they are not always observable, nor is it yet quite certain that they are caused by electrolytic action within the gelatine film, and further investigation as to this is necessary.

I have also found that reversals of the reduction products, somewhat similar to those obtained by photographic methods, may be obtained entirely without the agency of light by passing a current from a single bichromate cell through a pair of silver plates coated with silver bromide and immersed in eikonogen developers prepared with or without thio-carbamides. In this case the plate attached to the carbon pole in the plain developer showed only a very little black deposit, whilst the plate attached to the zinc pole showed a very strong dark deposit all over. A pair of similar plates immersed in some of the same developer to which a few drops of a solution of thio-sinamine had been added showed quite different results, the plate attached to the carbon pole showing a strong black deposit, while the plate attached to the zinc pole was almost clear on the face and free from deposit, showing only a slight tarnish, caused by sulphur. I have some plates of this kind here, though the reversed effect is not quite so strong as it was on my first plates. I have found it difficult to obtain such marked reversals again though I quite believe they are obtainable and the best conditions for securing successful results have yet to be ascertained.

Some similar effects were produced on Eastman's bromide paper and on ordinary dry plate films attached to the silver plates.

Although results obtained with silver bromide on silver plates are not quite comparable with those obtained with ordinary gelatine plates, these experiments show that under favourable circumstances the action of developing solutions on silver bromide is accompanied by distinct electric action, and that these thio-carbamide reversals may be produced by electrical methods and are attended by a reversal of current. How this reversal of current is brought about is not yet quite clear, but seems to be explained by some observations on metallic sulphides, by W. Skey, recorded in Vol. XXIII of the *Chemical News*. He found that sulphides which have the power of conducting can also generate electricity and that silver sulphide is positive to metallic silver. In a battery consisting of a sulphide and a metal in acidulated water, the gas liberated is sulphuretted hydrogen, the nascent hydrogen exerting a desulphurising action upon the metallic sulphide, the ultimate effect of which is in some cases to completely reduce the mineral to the metallic state. He shows also that these sulphides are capable of performing the functions of the negative element of a galvanic couple.

It seems probable, therefore, if electrolytic action does take place in gelatine films during the process of photographic development, that, according to the laws of electrolysis, with the ordinary developers the exposed parts of the plate form the negative pole and attract the metallic elements and hydrogen, while the bromine, or other halogen and

acid radicals, with the hydroxyl go to the unexposed parts forming the positive pole.

On the other hand, with the alkaline thio-carbamide developers, at the same time that silver is reduced on the exposed parts, silver sulphide is formed on the unexposed parts which then become the negative pole and attract the sulphur, the hydrogen and some of the silver from the exposed parts; while the halogen and hydroxyl pass to the positive pole and transform part of the remaining silver into silver haloid which is dissolved in the fixing bath.

Although this theory, as stated in a rough way, seems to agree fairly well with the facts, and from the experiments I have made seems probably the correct explanation of the reversals, I do not feel myself yet able to put it forward authoritatively, and a great deal of further investigation is required. The subject is a very difficult one beset with uncertainties, and requires more time and close attention than I have been able to give for working it out fully.

The theory that photographic action is accompanied by electrical phenomena is no new one. Becquerel found that if silver plates coated with silver bromide or other haloid silver salts were electrically connected and immersed in dilute acid, and light was allowed to fall upon one plate while the other was screened, the effect of the light was marked by distinct electrical action capable of deflecting the needle of a galvanometer. Prof. Minchin has recently found that the same effect is produced on silver plates coated with silver haloids in emulsions of gelatine or collodion, and immersed in very dilute solutions of alkaline bromides, iodides or chlorides. He has also found that if silver plates coated with a silver bromide emulsion in gelatine are attached to the poles of a battery, and half immersed in a weak solution of potassium bromide, the film attached to the carbon pole was visibly blackened on its immersed part, while no visible effect was produced on the other, but on developing this plate with pyrogallic acid and ammonia, its immersed part also became dark, exactly as if it had been exposed to light for a few seconds.

There is a good deal of other more or less direct evidence that an electrolytic action takes place during development, although so far as I can ascertain no observations of the currents with a galvanometer are recorded. Comparatively little attention has, however, been given to the question, and electrical or electrochemical action has never been looked upon as a principal factor in the production of the photographic image. From these new results it would appear that, at any rate as regards the silver haloids, the formation and development of the photographic image is to a very great extent influenced by electrical action,

if not actually caused by it. It has lately been found that electro-chemical reactions have explained many obscure points in ordinary chemistry, and it seems likely therefore that further investigation of photographic action by the light of the most recent electro-chemical theories would also throw light on much that is now obscure and uncertain as regards the formation and development of the invisible photographic image. Prof. Meldola in his "*Chemistry of Photography*" notes these micro-electrical phenomena in photography as subjects for further investigation, and I hope these experiments may prove a useful contribution to the investigation.

Bábú SARAT CHANDRA DÁS exhibited and read a short note on a drawing of the Paradise of the Northern Buddhists, called De-wa-chan in Tibetan and "Sukhávati" in Sanskrit. (With a plate).

*A Short note on the Paradise of the Northern Buddhists.*

The inscription on the top of this Tibetan drawing of "Sukhávati" the paradise of the northern Buddhists is, in the rectangular form of the Sanskrit character of the 6th—7th century A. D. Transliterated into Roman character, it stands thus :—

Sukhávati hí síñ bkod tshé phyi mañi

\*Mthoñ var byed-pa shes bya-va.

"The design of Sukhávati world called 'the prospective of future existence.'"

This imaginary world, believed by the Buddhists of the Maháyána school to be a reality, lies far to the west beyond numberless worlds. In physical aspect, general character &c., it is said to resemble this world of ours, but the great law of procreation which is the prime cause of all that have life in this world does not prevail in Sukhávati. There all living beings are born, not from the effect of their former deeds, but in consequence of their moral merits and prayers. A pious Buddhist of this world prays, for being born into Sukhávati. When at the time of his death he sees, the Buddha and his sainted followers either in sleep or in wakeful dreams, he is sure to be born in Sukhávati. His soul instantaneously travels many millions of miles westward and enters a lotus blossom which serves him for a womb. In course of time he grows out of the lotus flower and develops into a full grown man. He is found endowed with the power of comprehension, meditation and foreknowledge, and is soon able to work miracles. Women

\* The italics are silent.

have no place there and the agency of the sexes is altogether unknown in Sukhāvati. Indeed *kāma* that faculty of procreation which is, the cause of all worldly miseries, according to the Buddhists does not at all exist there. In this paradise *Amitābha* the Buddha of immeasurable light rules supreme in love. Avalokitesvara Bodhisattva, with a lotus in his hand sits to the right and Vajra Pāni has his seat on the left. Two rays of divine light emanating from the heart of the Supreme Buddha, travel east- and west-ward, touching a saintly Lama and a Buddha who has attained perfection, and will not go back to the world. This Lama in the present *kalpa* is the grand Lama of Tashilhunpo whose spirit is in Sukhāvati, but who of his own free-will chooses, for the good of all living beings of this world, to reside in flesh in the holy land of Tibet.

The Buddha's place is taken by successive arrivals. Fine trees, lovely flowers, fragrant shrubs abound in Sukhāvati. Birds of richest hues and plumage and sweetest notes fly, freely in Sukhāvati. The beasts of forests roam at large without doing mischief to each other. The woods resound with the chorus of divine music. In that blessed land there is no distinction between the day and the night. The gods, whose robes serve them for wings, approach the supreme Buddha from all directions with wreathes of plomers, crowns of gems, jewelled umbrellas and flags in their hands. They and the Bodhisattvas wait round him like Parnett's saints—"With harps of gold, with boughs of ever green. With robes of white, the pious throngs are seen; Exalted anthems all their hours employ. And all is music and excess of joy." Divine lustre—halos of light emanating from the persons of the saints and Buddhas keep all nature illumined. The hard soil becomes soft and yields to the feet, and the soft earth grows hard when the mind wishes for it.

There the food of contemplation furnishes nourishment to the residents of Sukhāvati. Their wealth consists of love and enjoyment, of meditation, their vestments are self grown on their person nor have they shame to cover. It is a land which is free from lust, envy, rage, ignorance and stupidity.

Once born there, one does not transmigrate elsewhere, but goes on ascending to the stages of sainthood. He is liberated from the effects of *karma*. The gods who in this world are subject to fall at the exhaustion of their moral merits—may by dint of prayers have their births in Sukhāvati—and draw near *Amitābha* guided by his light. I here extract a few lines from the *Dhāraṇī* called "the drum-sound of immortality."

འདི་ནས་ལྷ་གྱི་ཕྱོགས་རོལ་ན།  
 བདེ་བ་ཅན་གྱི་འཇིག་རྟེན་ཁས་ས།  
 དེ་ན་རྫོགས་པའི་སངས་གྲིས་བཞུགས།  
 དེ་བཞིན་གཤེགས་པ་འོད་དཔག་མེད།  
 སུ་ཞིག་དེའི་མཚན་བརྗོད་ན།  
 དེ་ནི་དེ་ཅུ་སྐྱེ་བར་འགྱུར།  
 འཆི་བའི་དུས་སུ་སྐྱོན་པ་ནི།  
 དག་སྦྱོང་དག་འདུན་བཅས་ཏེ་མཐོང།  
 དེ་ན་བྱུང་མེད་ཡོད་མ་ཡིན།  
 མངལ་ན་གནས་པ་ཡོད་མ་ཡིན།  
 དེ་ན་ཆེན་ལྷན་གྱི་པད་མོ་ལས།  
 རྩོམ་ལྷན་ཆེན་པོ་འགྱུར་བར་འགྱུར།  
 ཟས་དང་གོས་དང་སྐྱོན་ལྷན་དང་།  
 ཆོས་གོས་མལ་ཆ་རྣམས་བཟེད་ལྷན་ས།  
 སེམས་གྱི་བསམས་མ་གྲག་དུ་ནི།  
 དེ་དག་མོད་ལ་འགྱུར་བར་འགྱུར།  
 ཕྱོགས་བཅུར་བཞུགས་པའི་སངས་གྲིས་ལྷན་ས།  
 བདེ་བ་ཅན་གྱི་བསྐྱབས་པ་བརྗོད།

\* \* \* \* \*

ལྷན་དག་ཞིང་དུ་སྐྱེ་བར་འགྱུར།

(འཆི་མེད་ཏེ་སྐྱེ་བའི་གཞུགས་ལས་)



Far to the west lies De-va-chan,\*  
 That happy land of Buddhist bliss ;  
 Where reigns the saintly sovereign,  
 Amitâbha, of Light—boundless.  
 Who e'er His name in faith implores,  
 On re-birth gains that blessed land ;  
 His dying eyes shall see the Lord—  
 The Teacher and his priestly band.  
 No women there, nor fleshly birth ;  
 But from a diamond lotus flower  
 Bursts blooming forth the new born soul.  
 In the glorious company of  
 Amitâbha our needs are few,  
 But food and drink and raiment rare  
 And alms-bowl all appear when wished.  
 The Buddhas of the quarters ten  
 Unite in praise of De-va-chan ;  
 Our prayer hence will e'er be this  
 "To be born in that Paradise."

N. B.—Buddha, Amitâbha and Amitâyusa are the different manifestations of the same spiritual entity.

COL. J. WATERHOUSE submitted a communication from Mr. W. McCarren, Manager of the Arakan Oil Company's works, Kyouk Phyou, and said :—

At the August meeting, after the reading of Col. Mainwaring's paper on his new theory of the Barisal Guns I remarked that on reading a paper by Prof. Redwood on the Oil-wells of India, which was published last year in the *Journal of the Society for Chemical Industry*, and in which mention was made of gas explosions occurring in the Islands of Cheduba and Ramree from the mud volcanoes, it seemed not impossible that with favourable conditions of wind and atmosphere the sound of these explosions if loud enough might be carried across the Bay of Bengal so as to be heard in the localities where the Barisal Guns are heard.

On looking up a paper in Vol. XI of the *Records of the Geological Survey of India*, by Mr. Mallett on "the Mud Volcanoes of Ramri and Cheduba," referred to by Prof. Redwood, I found it stated that these explosions of gas were said by the natives to be most frequent in the rainy season.

\* De-va-chan is the Tibetan of Sukhâvati.

It struck me, therefore, that the question might at any rate be worth enquiring into, and as I found that the Arakan Oil Company's works were established at Kyouk Phyoo, on the island of Ramri, I asked my friend Mr. J. D. Maxwell, of Messrs. Kettlewell, Bullen and Co., the managing agents of the Company, to forward some questions on the subject to Mr. W. McCarren the manager of the works. This he kindly did, and I lately received the following note by Mr. McCarren, from which it will be seen that although the gas explosions referred to cannot possibly be the source of the sounds known as the Barisal Guns, the fact of similar sounds being heard on the Island as coming from the *west* at the commencement and end of the monsoon is interesting, and points to the sea as being in some way the place of origin of the sounds.

It may also be remarked that Prof. Pedler has very kindly had prepared for me some charts showing the direction of the winds at the head of the Bay during the Monsoon months, and from these it would appear that the winds are favourable to sounds being carried across from the Ramri Islands to the Sunderbunds, supposing that they were sufficiently loud.

The further information Mr. McCarren has kindly promised will be of interest, and the Society is much indebted to him for the trouble he has taken in the matter.

*Note by Mr. W. McCarren.*

1. Do explosions of gas occur from the mud volcanoes or from the petroleum wells in the islands of Ramri, Cheduba and the Borongas?

Explosions of gas occur from the mud volcanoes of Ramri and Cheduba but not from the petroleum wells.

2. If so, at what season of the year are they most frequent and are they accompanied by much noise, loud enough to be heard at a considerable distance?

There is only one volcano on these islands that has explosions of gas accompanied with much noise and flame. This volcano is in Cheduba and explodes once in every 6 to 8 months. I have heard the sound (which was not very loud) of the explosion at Kyouk Phyoo 40 miles north of the volcano. I have made enquiries at Akyab 100 miles north of the volcano, no one living there (Akyab) that I could find ever heard the sound of any explosion of the Cheduba volcano, although numbers have seen the flames of the eruptions which generally during the time (7 years) I have been here, have taken place at night time.

3. What is the direction of the prevailing wind at the time when the explosions are the most frequent ?

The wind was blowing from the N. W. when the last explosion occurred.

4. Is the noise accompanying them sufficiently loud to be heard at a great distance ; and is it possible that it could be heard on the other side of the Bay of Bengal ?

From enquiries I have made, and the number of times I have heard the noise accompanying the explosion, I do not think the sound could be heard at over 70 miles.

The natives here tell me that in April and May near the commencement of the rains they hear three or four very loud reports coming from the west, *i. e.*, the sea. That these reports are entirely different from the sounds produced by the surf on the coast, and are like the reports from the firing off of cannon. That in August and September near the end of the rains they hear the same sort of sounds which are again three or four in number,—that during no other time of the year do they hear these sounds. They of course cannot tell what are the causes of these reports, but they think they are in connection with the beginning and ending of the rains.

I have made arrangements with the headmen of the different villages along the coast, that when they hear these reports this year to come and give me the particulars. I will be on the *qui vive* myself and trust I will be able to get the exact date of each report.

The following paper was read :—

1. *Materials for a Flora of the Malayan Peninsula, No. 3.* By GEORGE KING, M. B., LL. D., F. R. S., F. L. S., Superintendent of the Royal Botanic Garden, Calcutta.

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

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### LIBRARY.

The following additions have been made to the Library since the meeting held in March last.

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### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Baltimore. Johns Hopkins University,—Circulars, Vol. X, No. 85.

Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Notulen, Deel XXVIII, Aflevering 3.

- Boston. Boston Society of Natural History,—Memoirs, Vol. IV, Nos. 7—9.  
 ———. ———. Proceedings, Vol. XXIV, Parts 3 and 4.
- Budapest. La Société Hongroise de Géographie,—Bulletin, Tome XIX, Fasc. 1 et 2.
- Calcutta. Geological Survey of India,—Memoirs, Vol. XXIV, Part 3.  
 ———. Indian Engineering,—Vol. IX, Nos. 10—13.  
 ———. Photographic Society of India,—Journal, Vol. IV, No. 3.
- Colombo. Ceylon Branch of the Royal Asiatic Society,—Journal, Vol. X, No. 37.
- Florence. La Società Africana d' Italia,—Bullettino, Tome VI, Fasc. 7.<sup>e</sup> 8<sup>o</sup>.
- Havre. Société de Géographie Commerciale du Havre,—Annuaire, Janvier, 1891.
- Leipzig. Der Deutschen Morgenländischen Gesellschaft,—Zeitschrift, Band XLIV, Heft 4.
- London. Geological Society.—Quarterly Journal, Vol. XLVII, Part 1.  
 ———. Institution of Electrical Engineers,—Journal, Vol. XX, No 91, and Index to Vol. XIX.  
 ———. ———. List of Officers and Members, corrected to January 31st, 1891.  
 ———. Nature,—Vol. XLIII, Nos., 1111—15.
- London. The Academy,—Nos. 971, 980—984.  
 ———. The Athenæum,—Nos. 3303-4, 3306-7.
- Manchester. Manchester Literary and Philosophical Society,—Memoirs and Proceedings, Vol. IV (4th series), No. 2.
- Mexico. La Sociedad Científica “Antonio Alzate,”—Memorias, Tomo IV, Nos. 3 et 4.
- Naples. La Società Africana d' Italia,—Bullettino, Anno X, Fasc. 1—2.
- Paris. La Société de Géographie,—Bulletin, Tome XI, No. 4.  
 ———. ———. Compte Rendu des Séances, Nos. 2—5, 1891.
- Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno VI, No. 1; Index, Anno V.
- Rome. La Società Degli Spettroscopisti Italiani,—Memoire, Tome XX, Disp 1<sup>a</sup>.
- Roorkee. The Indian Forester,—Vol. XVII, Nos. 1—3.
- Taiping. Government of Perak,—The Perak Government Gazette, Vol. IV, No. 5.
- Tōkyō. Asiatic Society of Japan,—Transactions, Vol. XVIII, Part 2.  
 ———. Kaiserlich-Japanischen Universität,—Mitteilungen aus der Medicinischen Facultät, Band I, No. 4.
- Trieste. Museo Civico di Storia Naturale di Trieste,—Atti, VIII.

- Turin. La R. Accademia delle Scienze di Torino,—Atti, Tome XXVI, Disp. 1<sup>a</sup>—3<sup>a</sup>.
- Vienna. Der K. K. Geologischen Reichsanstalt,—Verhandlungen, Nrn. 14—18, 1890; Nr. 1, 1891.
- Yokohama. Der Deutschen Gesellschaft für Natur und Völkerkunde Ostasiens in Tokio,—Mittheilungen, 45 Heft.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- ADITYARÁMJI, KESHAVLÁL AND LAXMIDÁSS. Sangeetáditya, Part I. By Shástri Adityarámji. 8vo. Bombay, 1889.
- MITRA, VIHÁRILÁLA. The Yoga-Vásishtha-Mahárámayana of Válmiki, translated from the original sanskrit, Vol. I. 8vo. Calcutta, 1891.
- STORER, HORATIO R., M. D. The Medals of Benjamin Rush, Obstetrician. 8vo. Chicago, 1889.
- . The Medals, Jetons and Tokens illustrative of Obstetrics and Gynæcology. 8vo. 1887.

### MISCELLANEOUS PRESENTATIONS.

- Proeve van een Lampongsch-Hollandsche Woordenlijst, bepaaldelijk voor het dialect van Kroë, door O. L. Helfrich (Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen, Deel XLV, 3<sup>e</sup> stuk). 8vo. Batavia, 1891.
- Verzameling Lampongsche Teksten, getranscribeerd onder toezicht van O. L. Helfrich (Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen, Deel XLV, 4<sup>e</sup> stuk). 8vo. Batavia, 1891.

#### BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN, BATAVIA.

- Botany: Contributions to the Queensland Flora. By F. M. Bailey, F. L. S. (Bulletin, Department of Agriculture, Brisbane, No. 4). 8vo. Brisbane, 1890.
- Tobacco: Its Cultivation in Northern Queensland. By S. Lamb (Bulletin, Department of Agriculture, Brisbane, No. 6). 8vo. Brisbane, 1890.

#### DEPARTMENT OF AGRICULTURE, BRISBANE.

- Contents and Index of the First Twenty Volumes of the Records of the Geological Survey of India, 1868 to 1887. 8vo. Calcutta, 1891.

#### GEOLOGICAL SURVEY OF INDIA.

- The Indian Antiquary, Vol. XX, Part 244, February, 1891. 4to. Bombay, 1891.

#### GOVERNMENT OF INDIA, HOME DEPARTMENT.

Annual Administration Reports of the Forest Department (Southern and Northern Circles), Madras Presidency, for the official year 1889-90. Fcp. Madras, 1890.

Mr. A. Rea's Report on the Archæological Survey of Southern India during the last quarter of 1890. Fcp. Madras, 1891.

GOVERNMENT OF MADRAS.

A Catalogue of the Mantodea, with descriptions of new genera and species, and an enumeration of the specimens, in the collection of the Indian Museum, Calcutta. By J. Wood-Mason. 8vo. Calcutta, 1891.

INDIAN MUSEUM.

Den Norske Nordhavs-Expedition, 1876-1878. XX, Zoologi. Pycnogonidea ved G. O. Sars. 4to. Christiania, 1891.

DEN NORSKE NORDHAVS-EXPEDITION, CHRISTIANIA.

Catalogue of Notices to Mariners issued during the year 1890. 8vo. Calcutta, 1891.

PORT OFFICER, CALCUTTA.

Scientific Memoirs by Medical Officers of the Army of India. Edited by W. R. Rice, Esq., M. D. Part VI, 1891. 4to. Calcutta, 1891.

SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

North American Fauna, No. 3. Results of a Biological Survey of the San Francisco Mountain Region and Desert of the Little Colorado, Arizona. By Dr. C. Hart Merriam. 8vo. Washington, 1890.

North American Fauna, No. 4. Descriptions of twenty-six new species of North American Mammals. By Dr. C. Hart Merriam. 8vo. Washington, 1890.

UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON.

PERIODICALS PURCHASED.

Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 3.

Genéva. Archives des Sciences Physiques et Naturelles,—Tome XXV, No. 2.

Leipzig. Annalen der Physik und Chemie,—Band XLII, Heft 3.

London. The Chemical News,—Vol. LXIII, Nos. 1629—33.

Paris. Revue Scientifique,—Tome XLVII, Nos. 7—11.

BOOKS PURCHASED,

PETERSON, PETER. The Paddhati of Sarngadhara. A sanskrit anthology. Vol. I, Text (Bombay Sanskrit Series, No. XXXVII). 8vo. Bombay, 1888.

POOLE, REGINALD STUART. Catalogue of Coins of the Sháhs of Persia in the British Museum. The Coins of the Sháhs of Persia, Şafavis, Afgháns, Efsháris, Zands, and Kájárs. 8vo. London, 1887.

———. Catalogue of Indian Coins in the British Museum (The Muhammadan States). The Coins of the Muhammadan States of India in the British Museum. By Stanley Lane-Poole. 8vo. London, 1885.

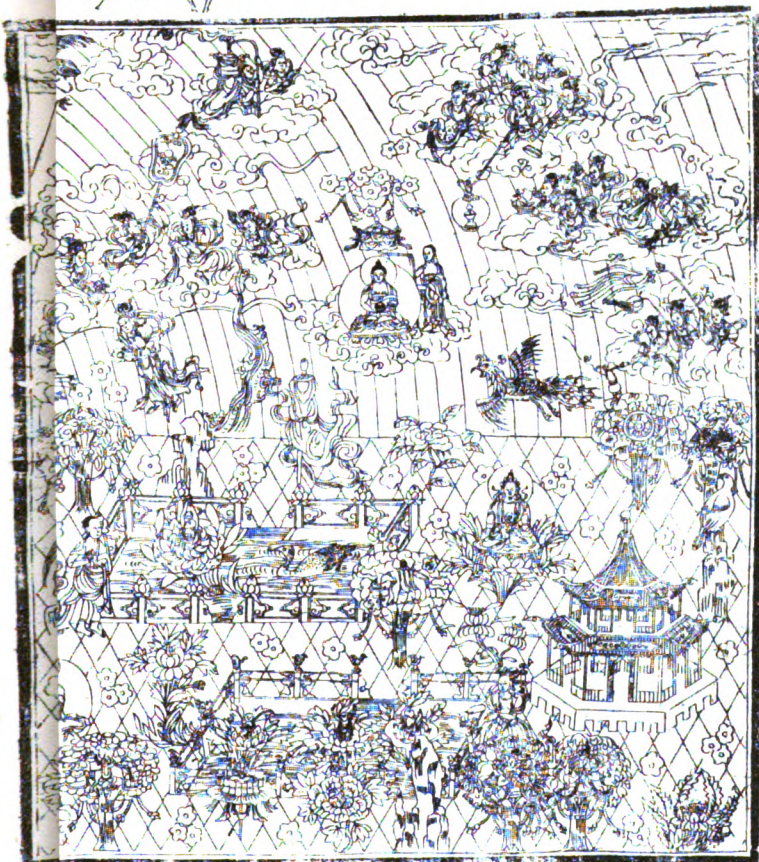




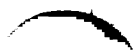








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**PROCEEDINGS**  
OF THE  
**ASIATIC SOCIETY OF BENGAL,**  
FOR MAY, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 6th May, 1891, at 9-15 P. M.

J. WOOD-MASON, Esq., Vice-President, in the chair.

The following members were present :—

Nawáb Abdul Latíf, Bahádur, Rev. H. B. Hyde, Dr. W. King, Rev. Fr. E. Lafont, T. H. D. La Touche, Esq., C. Little, Esq., Kumár Rameswár Maliáh, T. R. Munro, Esq., L. de Nicéville, Esq., R. D. Oldham, Esq., W. L. Selater, Esq.

Visitors : D. Munro, Esq., Dr. W. W. Sheppard.

The minutes of the last meeting were read and confirmed.

Nineteen presentations were announced, details of which are given in the Library List appended.

The following gentleman, duly proposed and seconded at the last meeting of the Society, was balloted for and elected an Ordinary Member :—

C. R. Wilson, Esq.

The following gentlemen are candidates for election at the next meeting :—

Rev. D. G. Lathom-Browne, Chaplain, Port Blair, Andamans, proposed by Dr. G. King, seconded by Dr. D. Prain.

F. A. Shillingford, Esq., Kolassy Factory, Purneah, proposed by C. Little, Esq., seconded by Dr. A. F. R. Hoernle.

The following gentleman has expressed a wish to withdraw from the Society :—

C. A. Samuells, Esq., C. S.

The PRESIDENT stated that the votes of the members on the proposed investment of Rs. 50,000 of the Society's *Permanent Reserve Fund*, reported at the meeting in February last, would now be taken, and appointed Dr. W. King and Mr. T. R. Munro to be scrutineers, who reported the result as follows :—

|          |     | <i>For</i> | <i>Against</i> | <i>Result.</i> |
|----------|-----|------------|----------------|----------------|
| Proposal | I   | 76         | 6              | Carried.       |
| Do.      | II  | 18         | 64             | Rejected.      |
| Do.      | III | 5          | 77             | Rejected.      |
| Do.      | IV  | 53         | 29             | Rejected.      |

The SECRETARY stated that it was resolved in the last meeting of Council, in the event of Proposal IV not being carried, that one proposal only should be laid before the members, as, with the large majority required by the rules of the Society, it is difficult to obtain a satisfactory result when so many proposals are before the members at once. The permission of the meeting was therefore asked with a view to a re-circulation of Proposal II, *viz.*, that the sum of Rs. 50,000 should be invested in Municipal Debentures.

Permission was granted.

The PRESIDENT read a letter from the Committee of Organization, Fifth International Congress of Geologists, Washington, inviting attention to a circular respecting the next meeting of the International Congress of Geologists and requesting to bring its contents to the notice of the Council and members of the Society.

The PHILOLOGICAL SECRETARY read the following reports on finds of Treasure Trove Coins :—

I. Report on 10 silver coins forwarded by the Deputy Commissioner of the Akola District with his No. 3294, dated 26th May, 1890.

The coins are stated to have been found near the village Umra Attali in the Khangaon Taluk of the Akola district, whilst excavating for the building of a wall for a temple. Altogether 462 coins are stated to have been found, of which ten were sent as samples for identification.

They are Rupees of Sháh 'Álam, of native mintage, and are of no numismatic value. They have been sent to the mint to be melted down.

II. Report on 29 "so-called Alamsháhi Rupees" forwarded by the

Deputy Commissioner of Hoshangabad with his No. 4555, dated the 6th September, 1890.

The coins are stated to have been found on the 10th May 1889 in the village of Rámpúr in Seoni Tahsil in the Hoshangabad district, and to be "so-called Alamsháhi Rupees."

As a matter of fact, they are Rupees of the following Mughal emperors of Delhi:

|                  |              |
|------------------|--------------|
| 1, Sháh Jahán    | 3 specimens. |
| 2, Aurangzíb     | 6 "          |
| 3, Aḥmad Sháh    | 1 "          |
| 4, Farukhsiyar   | 2 "          |
| 5, Muḥammad Sháh | 8 "          |
| 6, 'Alamgír II   | 1 "          |
| 7, 'Alam Sháh    | 8 "          |
| Total            | 29 "         |

These Rupees are all of very common kinds and moreover in indifferent condition. They have been sent to the mint to be melted down.

III. Report on 5 coins forwarded by the Offg. Collector of Durbhanga with his No. 687G, dated 9th September, 1890.

The find place of these coins is not stated in the Collector's letter. It would be well, if this item of information were always supplied.

All the five coins are Rupees of 'Alam Sháh's reign, dated "San 19 Mint Murshidábád," but of English mintage.

They are of no numismatic value, and have been sent to the mint to be melted down.

IV. Report, on 82 silver coins, forwarded by the Deputy Commissioner of Dharmsala, Kangra District, with his No. 1680 of the 17th October 1890.

These coins appear to belong to a set of 101 coins which were found buried by a roadside in the Hamírpur Tahsil of the Kángrá District; they were dug up in the course of road-making in March 1873. A few pieces were sent in April following to the Provincial Museum—I presume, in Lahore; and nine specimens would appear to have been taken by the District officers in 1874 with a view to enquiry. The remainder—apparently the 82 specimens now sent for determination—seem to have been deposited in the store room of the district office, where they were re-discovered in October last, and forwarded to the Asiatic Society of Bengal. Owing to my absence from Calcutta on

farlough, they could not be determined till now. Of the 82 coins sent down, 79 were whole, and 3 broken.

All the 82 specimens are of one kind, and belong to the class, commonly called "Indo-Sassanian." They are described and figured in Prinsep's *Indian Antiquities* (ed. Thomas), Vol. I, p. 407, Plate XXXIII, figs. 9, 14. Coins of this description have been found, at various times and in different localities, in large numbers. All collections are well supplied with them. They have been sent to the mint to be melted down.

Rev. H. B. HYDE exhibited a transcript of the Original Returns of Baptisms, Marriages and Burials received from Calcutta by the Court of Directors between 1713 and 1754.

He said :—The Original Registers of the Presidency Church were destroyed in 1756 and since then until these transcripts were received last month, it has perhaps been quite unknown in Calcutta that such duplicates now copied were in existence. These transcripts are to be lodged in the Registry of St. John's Church.

The following papers were read :—

1. *New and Rare Indian Lycænidæ.*—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.
2. *The Butterflies of Sumba and Sumbawa with some account of the Island of Sumba.*—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.
3. *Natural History Notes from H. M.'s Indian Marine Survey Steamer "Investigator,"* Commander R. F. HOSKYN, R. N. commanding. No. 24.—*List of Deep-Sea Holothurians collected during the seasons 1887 to 1891 with descriptions of new species.*—By DR. J. H. TULL WALSH. Communicated by the SUPERINTENDENT OF THE INDIAN MUSEUM.
4. *On an undescribed Oriental species of Nepeta.*—By D. PRAIN.
5. *Noviciæ Indicæ. IV. Two additional species of Glyptopetalum.*—By D. PRAIN.

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

6. *On the present condition of Barren Island.*—By D. PRAIN.

Barren Island has been so often described that there is little left to say concerning its physical condition. In his exhaustive account of the island (*Memoirs of the Geological Survey of India*, xxi, part 4) Mr. Mallet has, however, suggested (*l. c.*, p. 30) that future visitors should note "the temperature of the hot spring" at the landing place and "the thickness of the fresh and undisturbed sulphur-crusts." This the writer, owing to the kindness of Col. T. Cadell, v. c., Chief Commissioner of the Andamans, had an opportunity of doing in April 1891.



The column of steam from the crater which was "visible from the landing-place or even some distance out at sea" to Mr. Mallet (*l. c.*, p. 23) in February 1884 and was "barely visible at 3 miles distance" to Capt. A. Carpenter in 1886 (*Records, Geol. Surv., India*, xx, 48) was no longer visible from these points in April 1891; on ascending the cone, however, steam was found to issue still at the places indicated in Mr. Mallet's memoir. The most copious discharge was still from the *solfatara* on the inner aspect of the north side of the crater.

A deposit of sulphur of an average thickness of  $2\frac{1}{2}$  inches had been laid down on this *solfatara* since 1884. On the other *solfataras* far less had been deposited; the crusts on the two next largest—that on the inner aspect of the south side of the crater and that outside the crater on the north-east face of the cone—were but  $\frac{3}{4}$  in. to 1 inch thick. The new crusts were very similar to the old ones described by Mr. Mallet (*l. c.*, p. 18) except as regards thickness; when pieces were removed, however, they were found to be looser in texture and more friable than the fragments of the old deposit that lay scattered about the crater and in estimating the present value of the *solfataras* as a sulphur-supply this should perhaps be taken into account. The temperature of the steam at the point of issue was not determined in 1891, but it can hardly be as hot now as in 1884—it was then  $219^{\circ}$  F.—since there was no crevice in which it was impossible to place one's hand for at least a few seconds.

In taking the temperature of the hot spring Mr. McCausland, Commander of H. M. I. M. *Nancowry* very kindly assisted me. At high tide there was no trace of percolation of water through the shingle of the small landing-place beach, but when the tide had ebbed water was found to ooze through this shingle at five different points round the head of the bay. Having scooped out pools sufficiently deep for complete immersion of a thermometer at these spots we took temperatures in as nearly as possible the fashion described by Mr. Mallet (*l. c.*, p. 26). In the most northerly small pool (furthest from the recent lava), the thermometer registered  $102^{\circ}$  F.; in the next pool towards the lava,  $103^{\circ}$  F.; then  $104^{\circ}$  F.; then  $106^{\circ}$  F.; finally in the pool nearest of all to the recent lava  $104^{\circ}$  F.; Mr. Mallet found that in 1884 the temperature of the different springs increased with their proximity to the recent lava; the discrepancy of our results as regards the last pool and that next adjacent to it (which, though five yards further from the lava was nevertheless  $2^{\circ}$  F. warmer) from the experience of Mr. Mallet led us to repeat the whole observation and to take the temperatures in these two last pools several times; our results were, however, the same

on each occasion. There appears to have been more water in the spring at the time of Mr. Mallet's visit (Feb.) than when our observations were made (April) for he found it possible to take temperatures in seven places while we could only do so in five.

This spring was formerly much hotter than it is now, but unfortunately the early observations are not at all definite: 'as hot almost 'as if it had been boiling' (commander of a vessel, 1832); 'temperature too high to be borne with the hand' (Playfair, 1837); 'natural boiling spring' (Mouat, 1857); 'nearly at the boiling point' (Liebig 1858); 'scalding hot' (Parish, 1862). The observations made since 1862 being more precise are here appended:—

| Date.          | Temperature of Spring.         | Authority.   |
|----------------|--------------------------------|--|
| April, 1866    | 158° F. and 163° F.            | Andaman Committee, <i>Report in Proc. As. Soc. Beng.</i> 1866, p. 213. |
| March, 1873    | 130° F. (highest observed)     | Ball, <i>Rec. Geol. Surv. India</i> , vi, p. 87.                       |
| February, 1884 | 106°—116° F.                   | Mallet, <i>Mem. Geol. Surv. India</i> , xxi, pt. 4, p. 26.             |
| April, 1886    | 110° F. (solitary observation) | Daley, <i>Rec. Geol. Surv. India</i> , xx, 48.                         |
| April, 1891    | 102°—106° F.                   | Prain.   |

The observations given in this table are not of quite equal value because they have not been taken on a uniform principle. The Andaman Committee above referred to (Dr. Gamseks, Lt. Laughton and Mr. Homfray) describe the spring accurately as issuing from underneath the lava across the small bay, but though Mr. Ball (*l. c.*) speaks of them as recording the temperature "at from 158° to 163°" the statement in their report is that at low tide in one place the temperature was found to be 163° F., and at another 158° F. We cannot therefore be certain that these figures give either the maximum or the minimum temperature in 1866, though it is highly probable even if one of them represents a limit that they do not exhibit the full range of temperature at that time. Mr. Ball's observation is rather more precise; the highest temperature is given as 130° F. taken close to high-water mark where the spring bubbles up; unfortunately he does not give the range of temperature in 1873. In connection with this it should be noted that Mr. A. O. Hume, speaking of this very observation, says

(*Stray Feathers* ii, 104) “the thermometer showed a temperature of “nearly 140° F.” This remark occurs in the narrative portion of a paper on the ornithology of the islands of the Bay of Bengal and is clearly written from memory only; attention is drawn to it now merely in order to prevent any one who may subsequently read the statement from relying upon it as exact. Mr. Mallet’s observations are very comprehensive and precise. Only the bare result of Mr. Daley’s observation is given and only one temperature is mentioned: it is not stated that it was the highest, and it is possible that the temperature was taken at one spot only.

The rate of cooling of the spring as indicated by the various highest readings of the preceding table is shown in the table subjoined:—

| Period. | No. of years. | Amt. of cooling.   | Rate <i>per annum</i> . |
|---------|---------------|--------------------|-------------------------|
| 1866-73 | 7             | 83° F. or 18·30°C. | 4·7° F. or 2·6°C.       |
| 1873-84 | 11            | 14° F. or 7·70C.   | 1·2° F. or 0·6°C.       |
| 1884-86 | 2             | 6° F. or 3·3°C.    | 3·0° F. or 1·7°C.       |
| 1886-91 | 5             | 4° F. or 2·2°C.    | 0·8° F. or 0·4°C.       |

The rates *per annum* shew that the existence of an error in the 1886 observation is not only possible but highly probable; the spot selected for examination can hardly have been that in which the temperature was highest at the time. If it be neglected the rate *per annum* for the whole 1884-91 period is  $\frac{1}{7}$  or 1·4° F. (= 0·7°C.) a rate that, allowing for errors unavoidable in such observations, is practically uniform with that during the 1873-84 period. Between 1866 and 1873 it cooled nearly four times as fast as it has cooled since; if the 1886 observation is correct, six times as fast as it is cooling now. If the rate continues uniform henceforth the spring will, if the 1886 observation be correct, probably cease to deserve the appellation “hot” by 1925, if the 1886 observation was *not* taken where the water was hottest at the time, the spring will probably be cool by 1910.



## LIBRARY.

The following additions have been made to the Library since the meeting held in April last.

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*presented by the respective Societies and Editors.*

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- Bombay. Bombay Natural History Society,—Journal, Vol. V, No. 4.
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GOVERNMENT OF BOMBAY.

The Indian Antiquary, Vol. XX, Parts 245 and 246. 4to. Bombay, 1891.

The Voyage of François Pyrard of Laval to the East Indies, the Maldives, the Moluccas and Brazil. By Albert Gray and H. C. P. Bell, Vol. II, Part 2. 8vo. London, 1890.

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No. 240; XLI, Nos. 241-42.
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Tome CXI, Nos. 22-26; CXII, 1-4, et Tables, Tome CX.  
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———. Revue Critique d' Histoire et de Litterature,—Tome XXX, Nos.  
49-52; XXXI, 1-4.
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tific series, Vol. LXX). 8vo. London, 1890.
- NAVILLE, EDOUARD. Bubastis, (1887-89). Eighth Memoir of the  
Egypt Exploration Fund, volume for 1889-90. 4to. London, 1891.
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**PROCEEDINGS**  
OF THE  
**ASIATIC SOCIETY OF BENGAL,**  
FOR JUNE, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd June, 1891, at 9-15 P. M.

L. DE NICEVILLE, Esq., F. E. S., in the Chair.

The following members were present :—

E. C. Cotes, Esq., T. R. Munro, Esq., J. D. Nimmo, Esq., R. D. Oldham, Esq., W. L. Selater, Esq., Dr. J. H. Tull Walsh.

Visitor :—Thomas H. Holland, Esq.

The minutes of the last meeting were read and confirmed.

Thirty-three presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society were balloted for and elected Ordinary Members.

Rev. D. G. Lathom-Browne.

F. A. Shillingford, Esq.

The following gentleman is a candidate for election at the next meeting :—

Thomas H. Holland, Esq., Geological Survey of India, proposed by R. D. Oldham, Esq., seconded by W. L. Selater, Esq.

The SECRETARY reported the death of the following members :—

John Boxwell, Esq., C. S.

C. W. Baumgarten, Esq.

The PRESIDENT announced that Dr. J. H. Tull Walsh had been elected a member of Council in the room of Dr. D. D. Cunningham, resigned, in consequence of proceeding to Europe on furlough.

Mr. W. L. SCLATER exhibited an old breech-loading gun, which was dug up in the Gya district and was presented to the Indian Museum by Mr. F. Field; the gun had been examined by Col. Mortimer, R. A., of the Ordnance Department, Fort William, who pronounces it to be of European manufacture probably dating from the 16th century, and that it was known by the name of Perrier or Paterera.

Mr. E. C. COTES exhibited two insects which are amongst the causes now conspiring to prevent the continuance of the locust plague through another year.

The following papers were read :—

1. *Note on a fiery hot-blast in the district of Khuln'a, on the 12th May, 1891.*—By H. JAMES RAINY. Communicated by the NATURAL HISTORY SECRETARY.

While my brother, Mr. J. Rudd-Rainey, and I were at dinner on the 12th May last, in the centre room of "Rainey Villa," between the hours of 8 and 9 o'clock, a very cool wind which was blowing into the room through the south door from the south-east direction quite suddenly changed to an absolutely warm blast from the same quarter, and was accompanied by a clearly discernible smell of combustion. So great was the heat, and so strong the smell of burning even within the room, that I immediately left it and went to the south verandah to see if there was any thatched house on fire close to the brick-built building I was in. I found no sign of any conflagration anywhere in the horizon, but the warm blast outside became absolutely fiery in its intensity. I could barely face it, and that only for a minute or so at a time. I may describe the sensation I felt to be similar to that of standing in close proximity to a heated furnace, or near to and windward of a burning expanse of jungle. This fiery hot-blast continued to blow for about the space of a quarter of an hour, and then the wind suddenly veered to the opposite direction, that is, from south-east to south-west, and a cool breeze set in, which was very grateful, indeed. The sky was overcast with clouds, but of no great density, and some stars were visible here and there, though none of the seven bright stars constituting the constellation *Ursa Major*, or even the pole star. There was much display of electricity in the shape of vivid flashes of lightning in different directions, but especially from the south-east quarter.

I regret exceedingly that I omitted to consult the thermometer at the time, to note the degree of the temperature when exposed to the intensely hot blast. From the result of enquiries instituted by me among my tenants and others, the fiery hot blast appears to have extended to a radius of several miles of my residence, which, I may state, is situated in Khulná Proper, on the left bank or east side of the wide river Rnpsháhá, on the opposite or west side of which river stands the present Civil Station of Khulná, and within half a mile distance from it.

I have never before this occurrence experienced anywhere in India, or elsewhere, such a strange intensely hot blast, and cannot in any way satisfactorily account for it. As the subject may be of some interest to Meteorologists, perhaps it would be worth while to fully discuss and elucidate it. I may add that, I find from the *Centenary Review* of the Society, that in *Jour. As. Soc., B., Vol. XVII, 1848*, there appears a paper on this subject from the veteran Meteorologist H. Piddington, entitled "A Notice of a remarkable Hot Wind in the Zillah of Purneah," but owing to the destruction of my Library I am unable to refer to it.

2. *The 'Tsam-*chhō-dung*' (rtsa-mchhog-grong) of the Lamas, and their very erroneous identification of the site of Buddha's death.—By L. A. WADDELL, M. B.*

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

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### LIBRARY.

The following additions have been made to the Library since the meeting held in May last.

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*presented by the respective Societies and Editors.*

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- Budapest. Der Ungarischen Akademie der Wissenschaften,—Mathematische und Naturwissenschaftliche Berichte aus Ungarn, Band VII.
- . ————. Ungarische Revue, Heft 4-10, 1889; 1-4, 1890.
- Caen. La Société Linnéenne de Normandie,—Bulletin, 4<sup>e</sup> série, Tome IV.
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- Edinburgh. Royal Physical Society,—Proceedings, Vol. X, Part 2.
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- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Mars-Avril, 1891.
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- WHITNEY, W. D. Böhrtlingk's Upanishads (Reprinted from American Journal of Philology, Vol. XI, No. 4). 8vo.
- . On Böhrtlingk's Upanishads (Reprinted from the Proceedings, American Oriental Society, Oct. 1890). 8vo.
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- . The Roots of the Sanskrit Language (Reprinted from the Transactions of the American Philological Association, 1885).
- . IV.—Translation of the Kaṭha-Upanishad (Reprinted from the Transactions of the American Philological Association, Vol. XXI). 8vo.

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The Fauna of British India, including Ceylon and Burma. Edited by W. T. Blanford. By Eugene W. Oates. Birds, Vol. II. 8vo. London, 1890.

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Sexti Pompei Festi de verborum significatu quæ supersunt cum pauli epitome. edidit Aemilius Thewrewk de Ponor. Pars I. 8vo. Budapest, 1889.

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Ninth Annual Report of the United States Geological Survey to the Secretary of the Interior, 1887-'88. By J. W. Powell. 4to. Washington, 1889.

UNITED STATES GEOLOGICAL SURVEY, WASHINGTON.

The Hindu Law of Adoption. By Gopálchandra Sarkár, Sástrí, M. A., B. L. (Tagore Law Lectures, 1888). 8vo. Calcutta, 1891.

UNIVERSITY OF CALCUTTA.

Norges Gamle Love indtil 1387. 5te Binds, 1ste Hefte. 4to. Christiania, 1890.

UNIVERSITY OF CHRISTIANIA.

Report of the President of Yale University for the year ending December 31st, 1890. 8vo. New Haven, 1891.

YALE UNIVERSITY.

### PERIODICALS PURCHASED.

Allahabad. North Indian Notes and Queries,—Vol. I, No. 2.

Braunschweig. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften,—Heft II, 1888.

Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 5.

Geneva. Archives des Sciences Physiques et Naturelles,—Tome XXV, No. 4.

- Leipzig. *Annalen der Physik und Chemie*,—Band XLIII, Heft 1.  
———. ————. *Beiblätter*, Band XV, Stück 4.  
London. *The Chemical News*,—Vol. LXIII, Nos. 1639-42.  
Paris. *Revue Scientifique*,—Tome XLVII, Nos. 17-20.  
Vienna. *Vienna Oriental Journal*,—Vol. V, No. 1.
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**PROCEEDINGS**  
**OF THE**  
**ASIATIC SOCIETY OF BENGAL,**  
**FOR JULY, 1891.**

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st July, 1891, at 9-15 P. M.

**J. WOOD-MASON, Esq.,** Vice-President, in the chair.

The following members were present:—

**Dr. A. W. Alcock, Bábú Sarat Chandra Dás, Rev. H. B. Hyde, C. Little, Esq., Bábú Asutosh Mukhopádhyaý, L. de Nicéville, Esq., J. D. Nimmo, Esq., C. R. Wilson, Esq.**

The minutes of the last meeting were read and confirmed.

Fifty-one presentations were announced, details of which are given in the Library List appended.

The following gentleman, duly proposed and seconded at the last meeting of the Society, was balloted for and elected an Ordinary Member:—

**Thomas H. Holland, Esq.**

The SECRETARY reported the death of the following member:—

**Lieut.-Col. Sir O. B. St. John, R. E., K. C. S. I.**

The PRESIDENT stated that the votes of the members would now be taken on the proposed transfer of Rs. 50,000 of the Society's Permanent Reserve Fund to Municipal Debentures, reported at the meeting in May last, and appointed **Dr. A. W. Alcock** and **Bábú Asutosh Mukhopádhyaý** to be Scrutineers, who reported that there were 80 votes in favour of and 14 votes against the proposed transfer, whereupon the President announced that it had been duly carried.

BÁBÚ SARAT CHANDRA DÁS read a short note on the first tests of renunciation of the early Buddhists.

The following papers were read :—

1. *Additional Uredineae from the Neighbourhood of Simla.*—By A. BARCLAY, M. B., *Bengal Medical Service.*

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

2. *Troy weights and general currency of ancient Orissa.*—By MAN MOHAN CHAKRAVARTI, M. A., B. L.

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

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### LIBRARY.

The following additions have been made to the Library since the meeting held in June last.

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### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Angers. La Société d'Etudes Scientifiques d'Angers,—Bulletin, XIX<sup>e</sup> Année.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. XII, Nos. 6-8; XIII, 1.

—————. —————. American Journal of Mathematics, Vol. XIII, Nos. 1 and 2.

—————. —————. American Journal of Philology, Vol. XI, Nos. 2 and 3.

—————. —————. Circulars, Vol. X, Nos. 87 and 88.

—————. —————. Studies from the Biological Laboratory, Vol. IV, No. 7.

Berlin. Der Königlich Preussischen Akademie der Wissenschaften zu Berlin,—Sitzungsberichte, XLI-LIII; Inhalt Jahrgang 1890.

Bombay. Bombay Natural History Society,—Journal, Vol. VI, No. 1.

—————. The Indian Antiquary,—Vol. XX, Parts 248 and 249.

Boston. American Philological Association,—Transactions, Vol. XX.

Calcutta. Geological Survey of India,—Records, Vol. XXIV, Part 2.

—————. —————. Memoirs, Vol. XXIII.

—————. —————. (Palæontologia Indica) Ser. XIII, Vol. IV, Part 2.

—————. Indian Engineering,—Vol. IX, Nos. 23-26.

- Danzig. Der Naturforschenden Gesellschaft in Danzig,—Schriften, Neue Folge. Bandes VI, Hefte 3.
- Frankfurt, a. M. Der Senckenbergischen Naturforschenden Gesellschaft,—Abhandlungen, Band XVI, Heft 2.
- . a. O. Des Naturwissenschaftl Vereins des Reg-Bez Frankfurt,—Monatliche Mittheilungen aus dem Gesamtgebiete der Naturwissenschaften, Jahrgang VIII, Nrn. 4-11.
- Ithaca. Cornell University,—Library Bulletin, Vol. II, No. 15.
- Jassy. Societații Științifice Și Literare din Iași,—Archiva, An II, No. 8.
- London. Anthropological Institute of Great Britain and Ireland,—Journal, Vol. XX, No. 3.
- . Institution of Electrical Engineers,—Journal, Vol. XX, No. 93.
- . Institution of Mechanical Engineers,—Proceedings, No. 4, 1890.
- . Nature,—Vol. XLIV, Nos. 1125-28, and Index to Vol. XLIII.
- . Royal Astronomical Society,—Monthly Notices, Vol. LI, Nos. 3-5.
- . Royal Geographical Society,—Proceedings, Vol. XIII, Nos. 3 and 4.
- . Royal Institution of Great Britain,—Proceedings, Vol. XIII. Part 1.
- . Royal Microscopical Society,—Journal, Parts 1 and 2, 1891.
- . Royal Society,—Proceedings, Vol. XLIX, Nos. 296 and 298.
- . Royal Statistical Society,—Journal, Vol. LIV, Part 1.
- . The Academy,—Nos. 994-97.
- . The Athenæum,—Nos. 3317-20.
- Lyon. La Société D'Anthropologie de Lyon,—Bulletin, Tome IX.
- Moscow. La Société Impériale des Naturalistes de Moscou,—Bulletin, No. 4, 1890.
- . Meteorologische Beobachtungen, Das Jahr, 1890,—Zweite Hälfte.
- New Haven. Connecticut Academy of Arts and Sciences,—Transactions, Vol. VIII, Part 1.
- New York. American Museum of Natural History,—Bulletin, Vol. III, No. 1.
- . Journal of Comparative Medicine and Veterinary Archives,—Vol. XII, No. 5.
- Paris. Journal Asiatique,—Tome XVI, No. 2; XVII, 1.
- . L'Académie Nationale des Sciences, Belles-Lettres et arts de Bordeaux,—Actes, 3<sup>e</sup> série—XLIX et L<sup>e</sup> Années.

- Paris. La Société Académique Indo-Chinoise de France,—Bulletin, 2<sup>e</sup> Série. Tome III.
- . La Société D'Anthropologie de Paris,—Bulletins, Tome I (IV<sup>e</sup> Série) Fasc. 2<sup>e</sup> et 3<sup>e</sup>.
- . ———. Mémoires, Tome IV (2<sup>e</sup> Série), Fasc. 2<sup>e</sup>.
- . La Société de Géographie,—Bulletin, Tome XII (IV<sup>e</sup> Série), No. 1.
- . ———. Compte Rendu des Séances, No. 11, 1891.
- . La Société Zoologique de France,—Bulletin, Tome XVI, Nos. 1 et 2.
- . Musée Guimet,—Revue de l'Histoire des Religions, Tome XXII, Nos. 1-3.
- Philadelphia. Academy of Natural Sciences of Philadelphia,—Proceedings, Parts 2 and 3, 1890.
- Rio de Janeiro. Museu Nacional,—Archivos, Vol. VII.
- . Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno VI, No. 4.
- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XX, Disp. 4<sup>a</sup>.
- St. Petersburg. Comité Géologique,—Bulletins, Tome IX, Nos. 7 et 8.
- . ———. Mémoires, Vol. V, No. 5; X, 1.
- . La Société Impériale Russe de Géographie,—Proceedings, Tome XXVII, No. 3.
- Taiping. Perak Government,—Perak Government Gazette, Vol. IV, Nos. 13-16.
- Tokyō. Imperial University of Japan,—Journal of the College of Science, Vol. IV, Part 1.
- Vienna. Der Anthropologischen Gesellschaft in Wien,—Mittheilungen, Band XXI, Heft 1, und General-Register, Band XI-XX.
- . Der K. K. Géologischen Reichsanstalt,—Abhandlungen, Band XIV.
- . Der Kaiserlichen Akademie der Wissenschaften,—Archiv für Osterreichische Geschichte, Band LXXV, Hälfte 1 und 2.
- . ———. Denkschriften (Mathematisch-Naturwissenschaftliche classe), Band LVI.
- . ———. (Philosophisch-Historische classe), Band XXXVII.
- . ———. Fontes Rerum Austriacarum, Band XLV, Hälfte 1.
- . ———. Sitzungsberichte (Mathematisch Naturwissenschaftliche classe), Abtheilung I, Band XCVIII, Heft 4-10, XCIX, 1-3; II A, XCVIII, 4-10, XCIX, 1-3; II B, XCVIII, 4-10, XCIX, 1-3; III, XCVIII, 5-10, XCIX, 1-3.

Vienna. Der Kaiserlichen Akademie der Wissenschaften,—Sitzungsberichte (Philosophisch-Historische classe), Band CXIX-CXXI.  
 Washington. Smithsonian Institution,—Annual Report, 1888.

## BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- BLOOMFIELD, MAURICE. On Adaptation of Suffixes in Congeneric Classes of Substantives (Reprinted from the American Journal of Philology, Vol. XII, No. 45). 8vo. Baltimore, 1891.
- CONSTABLE, A. The Kennet Ciborium (Reprinted with additions from Scottish National Memorials). Fol. Edinburgh, 1890.
- ELLIS, J. B., and EVERHART, BENJAMIN M. New North American Fungi (Reprinted from the Proceedings of the Academy of Natural Sciences of Philadelphia, July 29th, 1890). 8vo.
- . New Species of Fungi from various localities (Reprinted from the Proceedings of the Academy of Natural Sciences of Philadelphia, Part I, 1891). 8vo.
- . New Species of Montana Fungi (Reprinted from the Botanical Gazette, February, 1891). 8vo.
- . Notes on a Species of *Coprinus* from Montana (Reprinted from the Microscope, Vol. X, No. 5). 8vo. Trenton, 1890.
- HOERN, PAUL. Die Denkwürdigkeiten des Šâh Tahmâsp I von Persien. (Zeitschrift der Deutschen Morgenländischen Gesellschaft, Band XLIV, Nr. 4). 8vo.
- . Die Denkwürdigkeiten Šâh Tahmâsp's des Ersten von Persien (1515—1576). 8vo Strassburg, 1891.
- NETTO, LADISLÁU. Le Muséum National de Rio-de-Janeiro et son influence sur les Sciences Naturelles au Brésil. 8vo. Paris, 1889.
- RÁY, PRATÁPA CHANDRA, C. I. E. The Mahabharata, translated into English prose, Part LXVI. Çanti Parva. 8vo. Calcutta, 1891.
- SARMA, PANDIT BHIMA SEN. Manavadharma Sástra, Vol. VII, Part 3. 8vo. Allahabad, 1891.
- WEITBRECHT, REV. H. U., Ph. D. A Descriptive Catalogue of Urdu Christian Literature, with a review of the same and a supplementary Catalogue of Christian publications in the other languages of the Panjáb. 8vo. London, 1886.
- WOOD-MASON, J., and ALCOCK, DR. A. Natural History Notes from H. M. Indian Marine Survey Steamer 'Investigator,' Commander R. F. Hoskyn, R. N., commanding. No. 21. Note on the Results

of the Last Season's Deep-Sea Dredging (Reprinted from the Annals and Magazine of Natural History for January, February, and March 1891). 8vo. London, 1891.

### MISCELLANEOUS PRESENTATIONS.

Proceedings of the General Meeting of the Asiatic Society of Ceylon and Ceylon Branch of the Royal Asiatic Society, held on 20th December, 1890. 8vo.

#### ASIATIC SOCIETY OF CEYLON.

Report of the sixtieth meeting of the British Association for the Advancement of Science held at Leeds in September, 1890. 8vo. London, 1891.

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Profitable Uses of the Mango Crop. By E. M. Shelton. 8vo. Brisbane, 1891.

Recent Experiments made at the American Agricultural Experiment Stations. Edited by E. M. Shelton (Bulletin, Department of Agriculture, Brisbane, No. 8, 1891). 8vo. Brisbane, 1891.

#### DEPARTMENT OF AGRICULTURE, BRISBANE.

Contributions to Canadian Palæontology, Vol. III. On Vertebrata from the Tertiary and Cretaceous Rocks of the North West Territory. By E. D. Cope. 4to. Montreal, 1891.

#### GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA.

Administration Report of the Meteorological Reporter to the Government of Bengal for the year 1890-91. Fcp. Calcutta, 1891.

Administration Report on the Jails of Bengal for the year 1890. By Surgeon-Major A. S. Lethbridge, M. D., C. S. I. Inspector-General of Jails, Bengal. Fcp. Calcutta, 1891.

Annual Report on the Lunatic Asylums of Bengal for the year 1890. By A. Hilson, M. D., Inspector-General of Civil Hospitals, Bengal. Fcp. Calcutta, 1891.

Report on the Calcutta Medical Institutions for the year 1890. By A. Hilson, M. D., Inspector-General of Civil Hospitals, Bengal. Fcp. Calcutta, 1891.

#### GOVERNMENT OF BENGAL.

Army Estimates of Effective and Non-effective Services, for 1891-92. Fcp. London, 1891.

The Conquest of the River Plate (1535-1555). 8vo. London, 1891.

An Estimate of the Sum required in the year ending 31st March, 1892, to defray the Expense of the Ordnance Factories, the Cost of the Productions of which will be charged to the Army, Navy, and Indian and Colonial Governments, &c. Fcp. London, 1891.

Memorandum of the Secretary of State relating to the Army Estimates for 1891-92. Fcp. London, 1891.

Return of all Loans raised in India, chargeable on the Revenues of India, outstanding at the commencement of the half-year ended on the 30th September, 1890. Fcp. London, 1891.

Return of all Loans raised in England under the Provisions of any Acts of Parliament, chargeable on the Revenues of India, outstanding at the commencement of the half-year ended on the 30th September, 1890. Fcp. London, 1891.

Statement showing, approximately, the sums provided in the Army Estimates for 1891-92 for each Arm of the Service, and for various Miscellaneous Establishments, and the Estimated Cost of the Personnel of the Army. Fcp. London, 1891.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Epigraphia Indica and Records of the Archæological Survey of India, Part VII, June, 1891. Fcp. Calcutta, 1891.

GOVERNMENT OF INDIA, REV. AND AGR. DEPT.

Results of Observations of the Fixed Stars made with the Meridian Circle at the Government Observatory, Madras, in the year 1868, 1869 and 1870. 4to. Madras, 1890.

GOVERNMENT OF MADRAS.

Johns Hopkins University Studies in Historical and Political Science. Eighth Series, V—VI. The Study of History in Germany and France. By Paul Frédéricq. 8vo. Baltimore, 1890.

———. ————. VII—IX. Notes on the Progress of the Colored People of Maryland since the war. A Supplement to the Negro in Maryland. By Jeffrey R. Brackett, Ph. D. 8vo. Baltimore, 1890.

———. ————. X. The Study of History in Holland and Belgium. By Paul Frédéricq. 8vo. Baltimore, 1890.

———. ————. XI—XII. Seminary Notes on Recent Historical Literature. By Dr. H. B. Adams, &c. 8vo. Baltimore, 1890.

On Relations between the Lines of various Spectra, with Special Reference to those of Cadmium and Zinc, and a Redetermination of their Wave-lengths. By Joseph Sweetman Ames (Reprinted from the Philosophical Magazine for July, 1890). 8vo. London, 1890.

On some Gaseous Spectra:—Hydrogen, Nitrogen. By Joseph Sweetman Ames (Reprinted from the Philosophical Magazine for July, 1890). 8vo. London, 1891.

On the Morphology of the Compound Eyes of Arthropods. By S. Watase (Reprinted from the Studies from the Biological Laboratory, Johns Hopkins University, Vol. IV, No. 6). 8vo. Baltimore.

The Relationships of Arthropods. By H. T. Fernald, M. S. (Reprinted from the Studies from the Biological Laboratory, Johns Hopkins University, Vol. IV, No. 7). 8vo. Baltimore, 1890.

Dissertations presented to the Board of University Studies of the Johns Hopkins University for the degree of Doctor of Philosophy :—

A Study of Juvenous. By James Taft Hatfield. 8vo. Bonn, 1890.

Attention. A Historical Summary of the Discussions concerning the subject. By Lemon L. Uhl, Ph. D. 8vo. Baltimore, 1890.

Dioxybenzoyl-Benzene-Sulphonic Acid and Sulphon-Fluoresceïn. By Charles C. Blackshear. 8vo. Baltimore, 1890.

On the Reaction of Certain Alcohols with Para-Diazo-Meta-Toluene-Sulphonic Acid. By W. V. Metcalf. 8vo. Baltimore, 1890.

Stannous Double Halide Salts with a few notes upon the Cuprous Double Halide Salts. By George M. Richardson. 8vo. Baltimore, 1890.

The Double Halides of Lead and the Alkali Metals. By Charles H. Herty. 8vo. Baltimore, 1890.

The Monsee Fragments. By George Allison Hench. 8vo Strassburg, 1890.

Thesis Riemann's P-function. By Charles H. Chapman. 4to. Baltimore, 1890.

JOHNS HOPKINS UNIVERSITY, BALTIMORE.

Report of the Board of Governors of the Public Library, Museum, and Art Gallery of South Australia, with the Reports of the Standing Committees, for 1889-90. Fcp. Adelaide, 1890.

PUBLIC LIBRARY, MUSEUM, AND ART GALLERY OF SOUTH AUSTRALIA, ADELAIDE.

Briefe, Abhandlungen und Predigten aus den Zwei letzten Jahrhunderten des Kirchlichen alterthums und dem anfang des mittelalters. Von Dr. C. P. Caspari. 8vo. Christiania, 1890:

Etruskisch und Armenisch. Sprachvergleichende Forschungen von Dr. Sophus Bugge. Erste Reihe. 8vo. Christiania, 1890.

Tillæg til Viridarium norvegicum af Dr. F. C. Schübeler. I (Separattryk af "Nyt Magazin for Naturvidenskaberne" XXXII, 1891). 8vo. Christiania, 1891.

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Allahabad. North Indian Notes and Queries,—Vol. I, No. 3.

Berlin. Deutsche Litteraturzeitung,—Jahrgang XII, Nrn. 6-15, und Mitarbeiter an Jahrgang XI.

———. Zeitschrift für Ethnologie,—Heft VI, 1890; 1, 1891.



- Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 6.
- Cassel. Botanisches Centralblatt,—Band XLV, Heft 4-13.
- Geneva. Archives des Sciences Physiques et Naturelles,—Tome XXV, No. 5.
- Göttingen. Der Königl. Gesellschaft der Wissenschaften,—Göttin-  
gische Gelehrte Anzeigen, Nrn. 2-5, 1891.
- . ————. Nachrichten, Nrn. 15-16, 1890 und Register,  
1890.
- Leipzig. Annalen der Physik und Chemie,—Band XLIII, Heft 2.
- . ————. Beiblätter, Band XV, Stück 5.
- . Orientalische Bibliographie,—Band IV, Hefte 8.
- Leyden. Internationales Archiv-für Ethnographie,—Band IV, Heft 1  
und 2.
- London. The Annals and Magazine of Natural History,—Vol. VII (6th  
Series), Nos. 39 and 40.
- . The Chemical News,—Vol. LXIII, Nos. 1643-45.
- . The Entomologist,—Vol. XXIV, Nos. 334 and 335.
- . The Entomologist's Monthly Magazine,—Vol. II (2nd Series),  
Nos. 15 and 16.
- . The Ibis,—Vol. III (6th Series), No. 10.
- . The Journal of Botany,—Vol. XXIX, Nos. 339 and 340.
- . The London, Edinburgh and Dublin Philosophical Magazine,—  
Vol. XXXI (5th Series), Nos. 190 and 191.
- . The Messenger of Mathematics,—Vol. XX, No. 8.
- . The Numismatic Chronicle,—Vol. X (3rd Series), No. 40.
- . The Quarterly Journal of Microscopical Science,—Vol. XXXII,  
Part 2.
- . The Quarterly Journal of pure and applied Mathematics,—  
Vol. XXV, No. 98.
- . Rhopalocera Exotica,—Part 16.
- New Haven. The American Journal of Science,—Vol. XLI (3rd Series),  
Nos. 243 and 244.
- Paris. L' Academie des Sciences,—Comptes Rendus des Séances,—  
Tome CXII, Nos. 5-14.
- . Annales de Chimie et de Physique,—Tome XXII (6<sup>me</sup> Série),  
Mars et Avril, 1891.
- . Revue Scientifique,—Tome XLVII, Nos. 21-24.
- . Revue Critique d' Histoire et de Littérature,—Tome XXXI,  
Nos. 5-14 et Table, Tome XXX.

## BOOKS PURCHASED.

- BREARD CHARLES.** Histoire de Pierre Berthelot. 8vo. Paris, 1889.
- BUCKLER, WILLIAM.** The Larvæ of the British Butterflies and Moths edited by H. T. Stainton, F. R. S., Vol. IV. The first portion of the noctuæ (Ray Society, 1890). 8vo. London, 1891.
- DEGUIGNES, M.** Histoire Générale des Huns, Tome I, Partie 1; II, 1-2; III et IV. 4to. Paris, 1756-58.
- DELBRUCK, B.** Syntaktische Forschungen. Band V, Altindische Syntax. 8vo. Halle a. S., 1888.



**PROCEEDINGS**  
OF THE  
**ASIATIC SOCIETY OF BENGAL,**  
FOR AUGUST, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 5th August, 1891, at 9-15 P. M.

THE HON'BLE SIR A. W. CROFT, K. C. I. E., President, in the chair.

The following members were present :—

Dr. A. F. R. Hoernle, Rev. H. B. Hyde, W. H. Jobbins, Esq., Dr. W. King, C. Little, Esq., Bábú Asutosh Mukhopádhyaý, L. de Nicéville, Esq., W. L. Sclater, Esq., Pandit Hara Prasád Shástri, C. H. Tawney, Esq., Dr. J. H. Tull Walsh, C. R. Wilson, Esq.

Visitor :—Dr. E. Thurston.

The minutes of the last meeting were read and confirmed.

Forty-two presentations were announced, details of which are given in the Library List appended.

The following gentlemen are candidates for election at the next meeting :—

H. C. Mallik, Esq., Calcutta, proposed by Hon. Sir A. W. Croft, seconded by C. Little, Esq.

Dr. E. H. Brown, Civil Surgeon, Puri, proposed by Bábú Man Mohan Chakravarti, seconded by C. Little, Esq.

Dr. M. A. Stein, Principal, Government College, Lahore, proposed by Dr. A. F. R. Hoernle, seconded by C. Little, Esq.

Diego Ernst, Esq., Delhi, proposed by W. L. Sclater, Esq., seconded by Dr. W. King.

Dr. Edgar Thurston, Superintendent, Government Central Museum, Madras, proposed by Dr. W. King, seconded by W. L. Sclater, Esq.

The SECRETARY reported the death of the following member :—  
Rájá Rájendralála Mitra, LL. D., C. I. E.

The PRESIDENT observed :—It is with great regret that I have to make to the Society the formal announcement of the death of one of its most distinguished members, Rájá Rájendralála Mitra. It is not only within the walls of this Society, or even in Bengal, that his loss will be deplored ; it will be felt throughout Europe ; for wherever learning is cultivated, there the name of Rájendralála Mitra is held in honour. His connection with this Society, extending over nearly half a century, was of a quite exceptional character. Entering it, when a young man, as Assistant-Secretary and Librarian, his commanding abilities and untiring industry soon brought him into prominence ; and while we may congratulate ourselves that it was this Society which first gave him the opportunity of satisfying his inexhaustible craving for knowledge, we must gratefully admit that he has amply repaid the debt by the contributions that he has made to Oriental learning, and by the lustre that his name and attainments have shed upon the Society, of which he was one of the most distinguished in the long roll of Presidents.

I will only add that the Council at its last meeting passed the following Resolution :—

“The Council desire to place on record their deep sense of the very great loss the Asiatic Society of Bengal and Oriental Learning have sustained by the death of their former President and Vice-President, Rájá Rájendralála Mitra, and to express their great sorrow at the sad event that has deprived the Society of a most learned and distinguished supporter who has been closely connected with it for nearly half a century, and the Council of a much esteemed Colleague.”

The PRESIDENT read the following letter :—

No. 357.

To

THE SECRETARY, ASIATIC SOCIETY, BENGAL.

Home Department. }  
Book. }

Simla, the 26th June, 1891.

Sir,

I am directed to state for the information of the Bengal Asiatic Society that Lieutenant-Colonel H. H. Godwin-Austen's work on the land and fresh water Mollusca of India and surrounding countries, a

copy of which has already been forwarded for the use of the Society, was intended to be supplementary to Messrs. Theobald and Hanley's "*Conchologia Indica*," but it is unfortunately unfinished, though complete in itself so far as it goes. In connection with the publication of the "*Fauna of British India*" it has been suggested to the Government of India that, on completion of the present series of seven volumes relating to the *Vertebrata*, the work should be extended so as to comprise the *Invertebrata* as well, and this proposal has been recommended for the favourable consideration of the Secretary of State. As, however, the following up of Colonel Godwin-Austen's work must be a necessary preliminary to any adequate treatment of the subject in the proposed extension of the *Fauna Indica* series, I am to enquire whether any person connected with the Asiatic Society would be willing to continue the researches so ably begun by Colonel Godwin-Austen.

I have &c.,

(Signed) P. G. MELITUS,

*Under-Secy. to the Govt. of India.*

The PHILOLOGICAL SECRETARY read the following reports on finds of Treasure Trove Coins:—

I. Report on 232 Silver coins forwarded by the Deputy Commissioner of Jabalpur, with his No. 1941, dated 6th May, 1891.

The Deputy Commissioner's letter states that they were found buried, but no particulars as to where, when and how they were discovered are given.

All the coins are Moghuls, and belong to the following emperors of Delhi:—

|   |       |
|---|-------|
| 1, AKBAR, 963—1014 A. H. = 1556—1605 A. D.                |       |
| round <i>jal jalál</i> rupees of the Ahmadábád mint ..... | 2     |
| 2, JAHÁNGÍR, 1014—1037 A. H. = 1605—1627 A. D.            |       |
| round rupees of several varieties .....                   | 6     |
| 3, SHÁH JAHÁN, 1037—1068 A. H. = 1627—1658 A. D.          |       |
| <i>a</i> , type: square areas, 4 varieties .....          | = 55  |
| <i>b</i> , type: round areas, 4 varieties .....           | = 8   |
| <i>c</i> , type: lettered surfaces, 4 varieties .....     | = 12  |
|   | 75    |
| 4, AURANGZÍB, 1068—1118 A. H. = 1658—1707 A. D.           |       |
| <i>a</i> , type: <i>badr munír</i> , 3 varieties.....     | = 126 |
| <i>b</i> , type: <i>míhr munír</i> , .....                | 17    |
| <i>c</i> , type: <i>Abul Muzaffar</i> .....               | 4     |
| <i>d</i> , type: reversed writing .....                   | 2     |
|   | 149   |
| Total ...   | 232   |

The earliest of these coins is dated in the 40th year of Akbar, that is 1596 A. D., the latest is dated in the 30th year of Aurangzib, that is, 1687 A. D. They cover a period of nearly one century, and they must have been buried not long after the year 1687 A. D., in the place where they were dug up.

Among them there are several of considerable interest, especially among the rupees of Aurangzib; thus those of the *badr munir* type. Rupees of this description are not common; they appear to have been only minted in Akbarnagar, Zafarabad and Multan. I am not certain as to the identity of the two first-named places; but Akbarnagar is said to be an old name of Rajmahal. In the present collection there are 17 rupees of this description; 15 of these are of the Akbarnagar mint, of the following years 1071, 1072, 1079, 1082, 1084, 1090, 1093, 1095; both years, that of the Hijrah as well as that of the reign, are shown on the reverse; while the usual practice is, to give the Hijrah on the obverse, but the reign on the reverse. One rupee is of the Zafarabad and one of the Multan mint; both of the same year, viz., Hijrah 1080 on the obverse, and regnal 12 on the reverse. Another peculiar rupee of Aurangzib is that which gives the obverse legend: *Muhammad Aurangzib Bahadur 'Alamgir Badshah Ghazi* or *Muhammad Muhiu-d-din Abu-l-Muzaffar Bahadur 'Alamgir Badshah Ghazi*. Of this description there are four coins. Their mint is illegible; their dates are 1069 *ahad*, 1080-3, 1081-3, 1082-4; the years are disposed, as usual, on the obverse and reverse. Another curiosity are two rupees of Aurangzib which bear the usual legends but in inversed characters, so that they may be read if held against a mirror. The characters are rather crude; the mint is not legible, the year of the reign is either 22 or 27, that of the Hijrah is 109\*. Coins of this description, might of course, be struck from ordinary rupees.

II. Report on 116 old coins forwarded by the Deputy Commissioner of Sagar, with his No. 1708, dated the 14th May, 1891.

These coins are stated to have been found in the village waste of Raigawan, in the Rhurai Tahsil of the Sagar District, by boys who were tending cattle.

They are all silver coins and consist of 63 Pathan, 50 Gujarati and 3 other coins: distributed as follows:

I, Pathan Coins (Rupees):

of *SHER SHAH*, 947—952 A. H. = 1540—1545 A. D.

|  |    |
|--|----|
| a, type: square areas, single-lined, as in <i>Chronicles</i> , No. 351, two varieties .....        | 22 |
| b, type: square areas, single-lined as in <i>Chronicles</i> , Nos. 344, 352, three varieties ..... | 24 |

|  |   |
|--|---|
| <i>c</i> , type : square areas, single-lined, new variety .....  | 2 |
| <i>d</i> , type : square areas, double-lined, as in <i>Chronicles</i> ,<br>346, 354, two varieties.....                  | 6 |
| <i>e</i> , type : round areas, single-lined, as in <i>Indian Anti-</i><br><i>quary</i> , vol. XVII, pl. I, fig. 9 .....  | 5 |
| <i>f</i> , type : round areas, single-lined, as in <i>Indian Anti-</i><br><i>quary</i> , vol. XVII, pl. I, fig. 8.....   | 2 |
| <i>g</i> , type : round areas, single-lined, as in <i>Indian Anti-</i><br><i>quary</i> , vol. XVII, pl. I, fig. 10 ..... | 2 |

---

Total coins of Sher Sháh ... 63

## II, Gujaráti Coins :

|  |   |
|--|---|
| 1, MAHMÚD SHÁH I, 863—917 A. H. = 1458—1511 A. D.  |   |
| <i>a</i> , type : indented square area on obv., like <i>J. A. S. B.</i> ,<br>vol. LVIII, pl. I, fig. VIII. Mint Shádiyábád, date<br>913; weight $\frac{1}{2}$ tolá .....                 | 1 |
| <i>b</i> , type : square area on obv., unpublished, not in<br>British Museum Catalogue. Mint : Shahr .....,<br>date 903, weight $\frac{1}{2}$ tolá .....                                 | 1 |
| <i>c</i> , type : similar to above, but lighter, weight about $\frac{1}{2}$<br>tolá; unpublished, not in British Museum Cata-<br>logue. Mint : <i>Shahr 'Azam Mustafábád</i> ; date 906. | 1 |
| <i>d</i> , type : like <i>a</i> , but lighter; weight like <i>c</i> ; not in<br>British Museum Catalogue. Mint illegible; date<br>867.....   | 1 |
| <i>e</i> , type : like <i>a</i> , but lighter, weight like <i>d</i> , but smaller<br>and thicker size; not published, nor in British<br>Museum Catalogue; dates 902, 903 .....           | 2 |

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Total coins of Maḥmúd ... 6

|  |    |
|--|----|
| 2, MUZAFFAR SHÁH II, son of preceding, 917—932 A. H.<br>= 1511—1525 A. D.  |    |
| <i>a</i> , type : lettered surfaces, like British Museum Cata-<br>logue, No. 425, weight about $\frac{2}{3}$ tolá, date 930 on<br>reverse .....                                | 1  |
| <i>b</i> , type : lettered surfaces; similar to <i>a</i> , unpublished;<br>not in British Museum Catalogue; weight about<br>$\frac{2}{3}$ tolá; 926 <sup>bis</sup> , 929 ..... | 3  |
| <i>c</i> , type : indented square area on reverse; published<br>in British Museum Catalogue, No. 440; no mint<br>or date visible, weight about $\frac{1}{2}$ tolá each .....   | 12 |
| <i>d</i> , type : double indented square area on reverse; un-  |    |

|  |             |
|--|-------------|
| published, not in British Museum Catalogue, dates 920 <sup>bis</sup> , 921 <sup>bis</sup> , 922 <sup>c</sup> , 923 <sup>a</sup> , 924 <sup>l</sup> , 926 <sup>a</sup> , 928 <sup>l</sup> , 932 <sup>l</sup> , about $\frac{1}{2}$ tolá each, total ..... | 17          |
| e, type: indented square area within circle on reverse; date 926, mint <i>Shahr</i> ....., unpublished, not in British Museum Catalogue.....   | 1           |
| f, type: like <i>d</i> , but lighter, about $\frac{1}{4}$ tolá, dates 926, 930, 92* .....  | total ... 4 |
| g, type: like <i>c</i> , but lighter about $\frac{1}{4}$ tolá; mint and date not visible.....  | 6           |
| <hr/>  |             |
| Total coins of Muzaffar ...  | 44          |
| Grand total of Gujarátí coins...   | 50          |
| <br>   |             |
| III. Other coins; of uncertain attribution; very small; less than $\frac{1}{4}$ tolá each; marked on one side with <i>जौ</i> <i>jí</i> and a trisula or trident, which used to be the emblem of the Ságar mint .....                                     | 3           |
| <hr/>  |             |
| Grand total of all coins ...   | 116         |

This is a most interesting find. Most of the Gujarátí coins and some of Sher Sháh are new, hitherto not known or at least not published. Most of them, as shown by their catalogue, are not represented in the British Museum Collection.

III. Report on six old silver coins forwarded by the Deputy Commissioner of Jalandar, with his No. 752, dated 12th June, 1891.

The Deputy Commissioner's letter merely states that 39 coins were found buried in the Jalandar district, but no particulars are given as to the exact place and time of discovery.

Those 39 coins are stated to have comprised 4 of Aurangzib, 2 of Farrukh Siyar and 33 of Muhammad Sháh, all three Moghul emperors of Delhi, reigning between 1658 and 1748 A. D., a period of nearly one century. The coins accordingly were probably buried during the troubles of Nádir Sháh's invasion of India.

From among the 39 coins, 6 only were sent down to be examined and reported on, two of each kind. These were found to be of very common descriptions.

IV. Report on fifty old rupees forwarded by the Deputy Commissioner of Wardha, with his No. 3424, dated 3rd July 1891.



These old rupees are stated by the Deputy Commissioner to have been found buried in an earthen pot, when the foundations were being dug for additions to a small temple of Bálají at Waigaon, a village about ten miles south of Wardha. They are supposed to have been buried by the family of the Bhagat or attendant of that temple, because they were found on the site of a former dwelling-house of theirs, and the family have been Bhagats of the temple for three generations.

The find comprises rupees of the following emperors of Delhi :

|                                   |           |
|-----------------------------------|-----------|
| 1, SHÁH JEHÁN, A. D. 1627—1658    | 5 rupees. |
| 2, AURANGZÍB, A. D. 1658—1707     | 19 „      |
| 3, FARRUKH SIYAB, A. D. 1712—1719 | 3 „       |
| 4, MUHAMMAD SHÁH, A. D. 1719—1748 | 21 „      |
| 5, 'ĀLANGÍR ZĀNÍ, A. D. 1754—1769 | 2 „       |

Total ... 50 Rupees.

All these rupees are in a very bad condition and belong to very common descriptions. Possibly a few of the coins ascribed to Muhammad Sháh may belong to his successor Ahmad Sháh (A. D. 1748—1754).

The PHILOLOGICAL SECRETARY exhibited eight gold Gupta coins, belonging to Mr. Rivett-Carnac, and remarked as follows :

“ Four of these coins belong to Chandra Gupta II, who reigned from about 395—415 A. D., and four to Kumára Gupta I, who reigned from 415—454 A. D. (see in J. A. S. B., Vol. LVIII, Pt. I, my synchronistic table). Of the coins of Chandra Gupta one is of the *Oouch* type (see Smith's Catalogue in the *Journal R. A. S.*, p. 76). This is an extremely rare type. Hitherto only one specimen was known. The present (second) specimen affords some new information. The king's upraised right hand is not empty, but holds a flower (lotus ?), and he sits on a high-backed couch. The legend on the left margin (facing the king) is fully legible and reads देव श्री महाराजधिराज श्री च, and on the right margin (behind the king) it continues all round the rim, but unfortunately only च्च is just legible. Thus much was already known; it is *deva S'ri Mahárájádhirája S'ri Chandra Gupta*. The vowel-marks of the long *á* were probably originally on the coin, and are merely worn away. The (hitherto illegible) characters below the couch are quite distinct and read clearly च्चक्री *rúpa-kriti*, i. e., 'he who is clever in dramatic composition.' Above the *akshara* च *pa*, but quite detached from it, there is a small horizontal stroke. The meaning of it I do not know; but it is certainly not any vowel-mark; perhaps it owes its presence to a mere fault in the die. The word *rúpa* may mean either 'sculp-

ture, figure' or 'dramatic composition;' and the compound *rūpa-kṛití* may mean either 'who is clever in the making of figures' or 'who is clever in the making of dramas or dramatic representations.' I prefer taking the word in the latter sense, because it is not quite uncommon to hear of kings in ancient India being dramatic authors. The well-known drama, called the *Mṛichchhakatiká*, is ascribed by tradition to a king *Súdraka*. Still more to the point is the discovery by Prof. F. Kielhorn, of a drama composed by the *Chauhán* king *Vigrahará-jadeva* of *Sákambharí* (see *Indian Antiquary*, Vol. XX, p. 201), in the middle of the 12th century A. D. This drama was inscribed on a stone slab, which has been found in *Ajmír*; and Prof. Kielhorn rightly says with reference to it, that 'actual and undoubted proof is here afforded to us of the fact that powerful Hindú rulers of the past were eager to compete with *Kálidása* and *Bhavabhúti* for poetical fame.' It appears to me, that this coin of *Chandra Gupta's* shows that this king also laid claim to the honour of dramatic authorship. The reverse is rather poorly preserved; the legend is श्री विक्रमन *śrī Vikrama* with double *kk*.

"Another of the *Chandra Gupta* coins is of the *Lion Trampler* type. This is also a rare type; there are four varieties, of which the second and third varieties are known only by one specimen each; the first and fourth are not quite so rare. The present specimen belongs to the fourth variety. It is a poor specimen, the legends being almost entirely wanting on both sides.

The third coin of *Chandra Gupta* is of the *Horseman to Right* type. Its reverse is good, but the legend on the obverse is nearly gone; only *parama-bhaga* ..... *ndra-guptaḥ* being preserved; the legend commences in front of the king's head, running all round the rim and terminating behind his head.

The fourth coin of *Chandra Gupta* belongs to the *Horseman to Left* type. Of this type there exist two varieties; one, which is not very rare, has the reverse legend *ajita vikrama*; the present coin belongs to this variety. The obverse legend is entirely gone.

Of the *Kumára Gupta* coins one belongs to the *Archer* type and the Variety II, A. It is not an uncommon variety, and the present coin is a rather poor specimen, the legends on both sides being almost entirely gone.

The three other coins of *Kumára Gupta* are all of the *Horseman to Right* type. Of this type there exist three varieties, of which the first and third are not uncommon, while the second is very rare. Among the three coins there is one of the second variety, showing on the reverse a goddess sitting on a wicker-stool, stooping forward, with

her left hand resting on her hip, and holding an open flower in her right. The obverse legend on this variety has never been read; nor does the present specimen afford much help; only इषिनी नक्षत्र *prīhivitalām-para* can be read, apparently about one-third of the entire legend. The two other specimens belong to the third variety which shows the same goddess feeding a peacock with her right, while in her left she holds a lotus-flower. One is a rather poor specimen, with nearly the entire legend lost. The other is much better, and apparently preserves the entire legend, in the following, somewhat curious form: चनि (read चिति) पतिरजितो विजयकुमार नु *Kshitipatir ajito vi[jaya-Kumāra] Gu.* The portion enclosed in brackets is mutilated, the rest is perfect. The legend commences with *kshi* on the right hand margin, between the king's head and the horse's neck; it closes with *gu* close behind the king's head. There is no space for the complementary *aksharas* ऋ: *ptaḥ*. The form of the legend, therefore, is here shorter than usual.

The PHILOLOGICAL SECRETARY exhibited a Buddhist chaitya of bronze, which was purchased by the Society from its finder through Bábú Tarakhnáth Roy. It is said to have been found together with two inscribed copper-plates several years ago at the village of Ashrafpur, near Raipur, in the Dacca district, during the process of levelling a mound in the neighbourhood of a tank. One of the copper-plate inscriptions was published by Dr. Mitra, as long ago as 1885 (see *Proceedings* of that year, for March, p. 49). The other copper-plate was purchased by the Society last year from the finder, a villager named Mír Khán. It was also being prepared for publication by Dr. Mitra, and will now be published by myself. Both inscriptions are dated in the same year, *vis.*, *Samvat* 13; the first in *Vaisákha* 13, the other in *Paushadha* 25. There is nothing in the inscriptions to determine to which era the date 13 should be referred. From the shape of the characters, which is that of the so-called *Kuṭila*, the inscriptions may be referred to the eighth or ninth century or perhaps somewhat later. The *Newár* era of *Nepál*, which commences with 880 A. D., might fit the date; and it would then be equivalent to 893 A. D. But this may be left to further determination, hereafter, when the copper-plates are published. It may be noted, however, that the date was wrongly read by Dr. Mitra in 1885, as being *Samvat* 713. What he read as the numeral 7, is really the final consonant *t* of *Samvat*; and the two other symbols are not those for 1 and 3, but for 10 and 3. The symbols are those of the older numeral system of notation, which had separate signs for the units, tens, hundreds, etc., and which was still employed in India for epigraphical purposes as late as the eighth and ninth centuries of the

Christian era. In Nepál it held its ground for a much longer time. The chaitya having been found with the inscriptions is of undoubtedly the same age, and may date from the ninth century. The mound in which the objects were found would seem to mark the ruined site of a Buddhist's shrine. The chaitya is of bronze, and fairly well preserved; it is made of three stories, built up in pyramidal form, consisting of a high, slightly sloping, square basement, on which rises a tall cylindrical dome, surmounted by a small square turret with projecting roof. See Plate III. The whole was originally surmounted by two, or perhaps three, umbrellas of which, however, only the lowermost is preserved. Under this umbrella, attached to its pole, is a minute plate inscribed with the Buddhist creed in (now) illegible characters. The four sides of the turret are adorned with four sitting figures of Buddha, projecting from the walls. Three are in the witnessing and one in the meditating posture. Four other figures are placed round the body of the dome, exactly below the upper figures, within ornamental niches, which are connected with one another with bands and festoons. The basement bears, on each of its four sides, three sitting figures (twelve in all); each triad consisting of one male between two female figures. The figures round the dome probably represent Boddhisattvas, while the basement figures appear to be Buddhist devas and saktis. The chaitya, therefore, already represents Buddhism in the much depraved Tantrik form, in which it was current in Bengal at the time of its extinction.

MR. C. H. TAWNEY called attention to Plate XXXIII, fig. 4, in General Cunningham's *Bharhut Sculptures*, and said, I think that this scene represents the story contained in the 407th *Jātaka*, Fausböll's edition.

It is called the *Mahākapijātaka*, and the story is as follows:

When Brahmadatta was king in Benares, the Bodhisattva was at the head of a troop of eighty thousand monkeys. They used to eat the fruits of a mango-tree on the banks of the Ganges. The Bodhisattva took particular care to prevent the fruits of one branch that overhung the Ganges, from falling into the river. In spite of all his precautions one fruit came into the hands of king Brahmadatta, when enjoying himself in the Ganges, and he asked the foresters whence it came. They at once said, that the tree that bore this fruit was to be found in the neighbourhood of the Himálayas. The king took them as guides, and with a large retinue, ascended the river in rafts, and after disembarking, and eating to his fill of the fruits of the tree, he lay down to rest.

In the night the eighty thousand monkeys came and began to

plunder the tree. The king woke up and saw them. He then stationed archers all round the tree with their arrows ready on the string, and told them to let none of the monkeys escape, asserting his intention of breakfasting the next morning off monkey-flesh and mangoes. The monkeys, being terrified, came trembling to the Bodhisattva their king. He told them not to be afraid, as he would save their lives. He then sprang across the Ganges, alighted in a thicket, picked out a creeper, made it smooth, and fastened it to his body. Unfortunately he miscalculated the length of the creeper, not allowing for the portion, that was to pass round his own body. He then made one end of the creeper fast to a tree, and sprang towards the other bank, where he had left his subjects terrified on the mango-tree. Owing to his having miscalculated the required length, he had to catch hold of the mango-tree with his arms. In this position he made a sign to the monkeys to pass over his body, and escape to the other bank. They did so, but Devadatta, who was among the monkeys, and saw an opportunity of injuring his enemy, climbed up to a lofty branch, and sprang with all his force on to the Bodhisattva's back, thus injuring his heart, which is said to have been "split."

It appears to me that so much of the story is clearly represented in the Bharhut Sculpture. The king of the monkeys is seen holding on to the mango-tree. A monkey has just crossed his body, and is crossing the creeper. Another is descending the tree on the other bank. Between the two trees flows a river containing three fish and one tortoise. Many monkeys are seen on the mango-tree. At the top of the mango-tree is seen a monkey with his paws so placed as to make his spring on to the back of the monkey-king as harmful as possible.

This monkey I take to be Devadatta, and I think a comparison of his face with the faces of the other monkeys will show that the artist has succeeded in imparting a particularly malignant expression to it.

The latter part of the story is not clearly represented in the picture. According to the *Jātaka*, the king, after taking most tender care of the monkey-king, made him lie down, and sitting himself on a low seat, listened to his sermon on the duty of a good king. But in General Cunningham's photograph, the monkey-king appears to be sitting on a stool a little higher than that of the human king. I take it, that the artist has followed a slightly different version of the tale. The king appears to be expressing his admiration for the courage and self-devotion of the monkey-king. The rectangular object brought by two men is supposed by General Cunningham to be a mat. It may be intended for the monkey-king to lie down on. As soon as the monkey-king had finished his sermon on the duty of a king, he died of the blow given by the monkey Devadatta.

After his death the king sent for his ministers, and had a pyre prepared containing a hundred cart-loads of wood. He ordered his wives to attend the funeral clad in red garments, with dishevelled hair, and torches in their hands. After the body was buried, he preserved the skull, and had it worshipped for seven days by the people of Benares on his return. He then erected a *chaitya* over it, and honoured it with perfumes and garlands as long as he lived.

The following papers were read:—

1. *Lamaic Rosaries: their Kinds and Uses.*—By L. A. WADDELL, M. B.
2. *On the date of the Bower Manuscript exhibited at the meetings of November 1890, and April 1891.*—By DR. A. F. RUDOLF HOENLE.  
The papers will be published in the Journal, Part I.
3. *Notes on the Snakes in the Collection of the Indian Museum with descriptions of several new species.*—By W. L. SCLATER, M. A., Deputy Superintendent, Indian Museum.  
The paper will be published in the Journal, Part II.

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## LIBRARY.

The following additions have been made to the Library since the meeting held in July last.

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### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

- Baltimore. Johns Hopkins University,—Circulars, Vol. X, Nos. 89-91.
- Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Notulen, Deel XXIX Aflevering 1.
- . Tijdschrift voor Indische Taal-, Land-en Volkenkunde, Deel XXXIV, Aflevering 5.
- Bordeaux. La Société Linnéenne de Bordeaux,—Actes, Vol. XLIII.
- Calcutta. Indian Engineering,—Vol. X, Nos. 1-5.
- . Photographic Society of India,—Journal, Vol. IV, No. 7.
- Copenhagen. K. Nordiske Oldskrift-Selskab,—Aarboger, Raekke II, Bind VI, Hefte 1-2.

- Danzig. Der Naturforschenden Gesellschaft in Danzig,—Schriften, Neue Folge, Bandes VII, Heft 4.
- Dorpat. Der Naturforscher-Gesellschaft bei der Universität Dörpat,—Sitzungsberichte, Band IX, Heft 2.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Mai-Juin, 1891.
- Jassy. Societații Științifice Și Literare din Iași,—Arhiva, Anno II, No. 9.
- Leipzig. Der Deutschen Morgenländischen Gesellschaft,—Zeitschrift, Band XLV, Heft 1.
- London. Institution of Electrical Engineers,—Journal, Vol. XX, No. 94.
- . Nature,—Vol. XLIV, Nos. 1129-33.
- . The Academy,—Nos. 998-1002.
- . The Athenæum,—Nos. 3321-25.
- . Zoological Society of London,—Proceedings, Part 1, 1891.
- . —————. Transactions, Vol. XIII, Parts 1 and 2.
- Mendon, Illinois. The American Antiquarian and Oriental Journal, Vol. XIII, No. 2.
- New York. The Journal of Comparative Medicine and Veterinary Archives,—Vol. XII, No. 6.
- Paris. La Société de Géographie,—Compte Rendu des Séances, Nos. 13-15, 1891.
- Pisa. La Società Toscana di Scienze Naturali,—Atti, Memorie, Tome XI.
- Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno VI, No. 5.
- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XX, No. 5.
- Taiping. Perak Government,—Perak Government Gazette, Vol. IV, Nos. 17-19.
- Turin. La R. Accademia delle Scienze di Torino,—Atti, Vol. XXVI, Nos. 9-11.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- BÜHLER, G. The new Sanskrit MS. from Mingai (Reprinted from Vienna Oriental Journal, Vol. V, No. 2.) 8vo. Vienna, 1891.
- KIELHORN, F. Die Vikrama Aera. 8vo.
- NUBSINGBOW, A. V., F. R. A. S., F. R. G. S. Results of Meteorological

- Observations at G. V. Juggarow Observatory, Daba Gardens, Vizagapatam, for 1890, with an introduction. 8vo. Calcutta, 1891.
- SARMA, PANDIT BHIMA SEN. *Manavadharma Sástra*, Vol. VII, Part 4. 8vo. Allahabad, 1891.
- WOOD-MASON, J., and ALCOCK, A. On the Uterine Villiform Papillæ of *Pteroplatea Micrura*, and their Relation to the Embryo, being Natural History Notes from H. M. Indian Marine Survey Steamer 'Investigator,' Commander R. F. Hoskyn, R. N. commanding. No. 22. (Reprinted from the Proceedings of the Royal Society, Vol. XLIX). 8vo. London.

### MISCELLANEOUS PRESENTATIONS.

Mélanges Asiatiques tirés du Bulletin de L'Académie Impériale des Sciences de St. Pétersbourg, Tome X, Livraison 1. 4to. St. Pétersbourg, 1890.

L'ACADEMIE IMPERIALE DES SCIENCES DE ST. PETERSBOURG.

Proceedings of an Ordinary General Meeting of the Agricultural Society of Burma, held at the Phayre Museum, on Monday, the 29th June, 1891. 8vo.

AGRICULTURAL SOCIETY OF BURMA.

The Bústán of Shaikh Muşlihu-d-dín Sa'adí. 8vo. London, 1891.

MESSRS. W. H. ALLEN AND CO., LONDON.

Nederlandsch-Indisch Plakaatboek, 1602—1811, door Mr. J. A. Van der Chijs, Deel VIII, 1765—1775. 8vo. Batavia, 1891.

BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN.

The Thirty-third Annual Report of the Trade and Commerce of Chicago for the year ending December 31st, 1890. 8vo. Chicago, 1891.

BOARD OF TRADE, CHICAGO.

Annual Report of the Sanitary Commissioner of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Notes of the Annual Statements of the Government Charitable Dispensaries in the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Report on the Jails of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Report on the Judicial Administration (Criminal) of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Report on the Lunatic Asylums of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Report on the Police Administration of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Resolution on the Management by Government of Private Estates in



the Central Provinces for the year ending the 30th September, 1890.  
Fcp. Nagpur, 1891.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Contributions to Canadian Palæontology, Vol. I, Part 3. By J. F. Whiteaves. 8vo. Montreal, 1891.

GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA.

Annual Report on Inland Emigration for the year 1890. Fcp. Calcutta, 1891.

Annual Report on the Police Administration of the Town of Calcutta and its Suburbs for the year 1890. Fcp. Calcutta, 1891.

Reports on the Alipore and Hazaribagh Reformatory Schools for the year 1890. Fcp. Calcutta, 1891.

GOVERNMENT OF BENGAL.

Copies of Despatches from the Secretary of State in Council to the Government of India, dated the 13th day of May and the 3rd day of July, 1890, relating to "the Amendment of the Indian Factory Act, 1879." Fcp. London, 1891.

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GOVERNMENT OF INDIA, HOME DEPARTMENT.

Dr. E. Hultzsch's progress report of the Archæological Survey, Madras from October, 1890 to March, 1891. Fcp. Madras, 1891.

GOVERNMENT OF MADRAS.

Final Report on the Revision of Settlement of the Sirsá District in the Punjab, 1879-83, and maps to accompany the Report. 8vo. Lahore, 1891.

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Report of the Commissioners appointed to inquire into the origin, nature, etc. of Indian Cattle Plagues, with Appendices, 1871. Fcp. Calcutta, 1891.

Reports on the Settlement Operations in the District of Azamgarh: as also in Parganas Sikandarpur and Bhadaon. Fcp. Allahabad, 1881.

DR. A. F. RUDOLF HOERNLE.

Catalogue of Mammalia in the Indian Museum, Calcutta, Part II. By W. L. Selater. 8vo. Calcutta, 1891.

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INDIAN MUSEUM.

Administration Report of the Marine Survey of India for the official year 1890-91. Fcp. Bombay, 1891.

MARINE SURVEY OF INDIA.

Memorandum on the snowfall in the mountain districts bordering Northern India and the abnormal features of the weather in India during the past five months, with a forecast of the probable character of the south-west monsoon rains of 1891. By John Eliot. Fcp. Simla, 1891.

METEOROLOGICAL REPORTER TO THE GOVERNMENT OF INDIA.

Bulletin of the Microscopical Society of Calcutta, Vol. I, No. 7.

MICROSCOPICAL SOCIETY OF CALCUTTA.

Esboço de uma Climatologia Do Brazil por H. Morize. 8vo. Rio de Janeiro, 1891.

OBSERVATORIO DO RIO DE JANEIRO.

Annual Report of the Provincial Museum Committee, Lucknow, for 1890-91. Fcp. 1891.

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SMITHSONIAN INSTITUTION, WASHINGTON.

Account of the Operations of the Great Trigonometrical Survey of India. Vol. XIV. 4to. Dehra Dun, 1890.

SURVEYOR GENERAL OF INDIA.

Obituary Record of Graduates of Yale University, deceased during the academical year ending in June, 1891. 8vo.

Report of the Yale University for the year 1890-91.

YALE UNIVERSITY.

PERIODICALS PURCHASED,

Allahabad. North Indian Notes and Queries,—Vol. I, No. 4.

Braunschweig. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften, Heft III, 1888.

Calcutta. Calcutta Review,—Vol. XCIII, No. 185.

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- Geneva. *Archives des Sciences Physiques et Naturelles*,—Tome XXV,  
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- Leipzig. *Annalen der Physik und Chemie*,—Band XLIII, Heft 3.  
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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR NOVEMBER, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th November, 1891, at 9 P. M.

DR. W. KING, B. A., in the chair.

The following members were present :—

Bábu Sarat Chandra Dás, The Most Rev. Dr. Paul Goethals, Rev. H. B. Hyde, C. Little, Esq., Kumár Rameswár Maliáh, T. R. Munro, Esq., J. D. Nimmo, Esq., W. L. Sclater, Esq., C. H. Tawney, Esq., C. R. Wilson, Esq.

Visitor :—Dr. W. W. Sheppard.

The minutes of the last meeting were read and confirmed.

One Hundred and Thirty-seven presentations were announced, details of which are given in the Library List appended.

The SECRETARY reported that the following gentlemen had been elected Ordinary Members of the Society during the recess, in accordance with Rule 7 :—

H. C. Mallik, Esq.  
Dr. E. H. Brown.  
Dr. M. A. Stein.  
Diego Ernst, Esq.  
Edgar Thurston, Esq.

The following gentleman is a candidate for election at the next meeting :—

A. Mervyn Smith, Esq., C. E., F. S. A., proposed by W. H. Miles, Esq., seconded by Dr. W. King.

The following gentleman has expressed a wish to withdraw from the Society :—

W. H. Lee, Esq., C. S.

The SECRETARY reported the death of the following member :—  
Surgeon-Major A. Barclay, I. M. S.

The PRESIDENT read the following obituary notice :—

Surgeon-Major A. Barclay, an active member of this Society, died of typhoid fever at Simla on the 2nd August. He was only 39 years of age. His loss is deeply regretted by his own service and it is intended to perpetuate his memory by means of some permanent monument. In a public letter the present Surgeon General with the Government of India says of Dr. Barclay, who was his Secretary :—" No one can know as I do how much the service is indebted to Barclay. On all occasions, when questions affecting its welfare came up for discussion, his first thought was for the preservation of the honor and dignity of it as a body, and for the safe-guarding of the interests of individual members. In this, for a man ordinarily kindly, gentle and dispassionate, he was fearless in giving expression to his views and never hesitated to put them forward in forcible language." This is high but well deserved praise. To us Dr. Barclay's work as a member of this Society is of the greatest interest. His general knowledge was wide, but his leisure time was specially devoted to the study of parasitic fungi of the order *Uredineæ*. Upon subjects connected with these fungi Dr. Barclay published eight papers in the *Scientific Memoirs* by officers of the Indian Medical Service ; seven papers in the *Journal of the Asiatic Society of Bengal* and others in the *Annals of Botany*, *The Journal of Botany*, *The Transactions of the Linnean Society* and in the *Journal of the Bombay Natural History Society*. He was a good draughtsman and photo-micrographer and most of his papers were accompanied by excellent plates. It will be seen therefore that Dr. Barclay was an untiring worker and apart from the purely scientific interest attached to his writings he will be remembered as one who has done well by shewing the public the nature of fungi destructive to crops and by suggesting remedies. It was intended to send Dr. Barclay to the South of India to investigate the *Coffee disease*, an undertaking which would have been full of interest to him and to the scientific world and of benefit to the coffee planters. His last scientific work, before his death, was connected with the Leprosy Commission, whose report will soon appear and we may rest assured that his contributions to the work will be found marked by that energy and honesty which was so characteristic of the man.



The PHILOLOGICAL SECRETARY read the following reports on finds of Treasure Trove Coins :—

I. Report on 213 old Rupees forwarded by the Deputy Commissioner of Multán, with his No. 550, dated the 13th August, 1890.

The Deputy Commissioner's letter states that at the end of August 1889 a vessel containing 400 rupees of some ancient mintage was found by two men in a field. Of these 187 rupees were melted down by the finders, before proceedings could be taken under the Treasure Trove Act. The balance of 213 rupees was forwarded to me for identification and report. Their value is stated to be Rs. 217 according to the current coinage.

Of these 213 rupees, 178 are Mughal, and 33 Affghan, one is a Persian and one a Sikh coin. They are mostly in fair condition.

They are classified as follows :

I. MUGHAL RUPEES.

|   |       |
|---|-------|
| 1, <i>Aurangzib</i> : 1068—1118 A. H. = A. D. 1658—1707.                                  |       |
| Usual type ; mints : Lahor, Etáwah, Multán, Tattah,<br>Súrat, Ajmír, Sháhjahánábád, ..... | 22    |
| 2, <i>Bahádur Sháh 'Alam</i> , 1118—1124 A. H. = 1707—<br>1712 A. D. ....                 | 11    |
| 3, <i>Farrokh Siyar</i> , 1124—1131 A. H. = 1712—1719 A. D.                               |       |
| Usual type : .....  | 11    |
| 4, <i>Rafu-d-darjât</i> , 1131 A. H. = 1719 A. D. ....                                    | 2     |
| 5, <i>Sháh Jahán II.</i> , 1131 A. H. = 1719 A. D. ....                                   | 1     |
| 6, <i>Muhammad Sháh</i> , 1131—1161 A. H. = 1719—1748<br>A. D.                            |       |
| Type I : "Şáhib Airán" ; mint : Sháhjahánábád....   | 63    |
| Type II : "Bádsháh Ghází" ; several varieties : ...                                       | 51    |
| 7, <i>Ahmad Sháh Bahádur</i> , 1161—1167 A. H. = 1748—<br>1754 A. D.                      |       |
| Usual type .....  | 14    |
| 8, <i>'Alamgír Zání</i> , 1167—1173 A. H. = 1754—1769 A. D.                               | 3     |
|   | <hr/> |
| Total Mughals ...   | 178   |
| II. AFFGHÁN RUPEES : (Durrání Dynasty) :  |       |
| 1, <i>Ahmad Sháh</i> , 1160—1182 A. H. = 1747—1772 A. D.                                  |       |
| as in Jour., As. Beng., vol. LIV, p. 67 .....   | 18    |
| 2, <i>Tímúr Sháh</i> , 1187—1207 A. H. = 1773—1783 A. D.                                  |       |
| as in Numism. Chronicle, vol. VIII, p. 336, .....   | 15    |
|   | <hr/> |
| Total of Durranis ...   | 33    |

## III. Persian coin :

*Nádir Sháh*, 1148—1160 A. H. = 1736—1747 A. D.

As in Numism. Chron., vol. II, p. 322. Mint :  
Sháhjahánábád, date 1152 ..... 1

## IV. Sikh Rupee :

*Ranjit Singh*, 1799—1839 A. D.

As in Journal A. S. B., vol. L, p. 85. Mint : Amritsar,  
date 1869 Samvat ..... 1

Grand total of all coins ... 213

II. Report on 142 old sicca coins forwarded by the Deputy Collector of Chittagong, with his No.  $\frac{2194}{xix-56}$  G, dated 27th January, 1891.

The Offg. Collector of Chittagong in his report on these coins to the Commissioner of the Chittagong division states they were found somewhere in the village of 'Joogkhalla,' in Thannah 'Fattickaury.' The date of the finding could not be ascertained.

All the coins are rupees of English mintage, such as were coined between 1793 and 1818, under the Regulations of 1793, in Calcutta and the subordinate mints of the Bengal Presidency. They are known as "19th san" Rupees, nominally from the Murshidábád, but really from the Calcutta mint, recognisable by their oblique milling.

III. Report on 15 old silver coins, forwarded by the Deputy Commissioner of Rawalpindi, with his No. 913G, dated 1st June 1891.

The coins are stated by the Deputy Commissioner to have been found in the Fateh Jang Tahsil; no further particulars are given.

They comprise 5 Mughal, 9 Durrání and one Sikh rupees, and are classified as follows :

## I, Mughal Rupees :—

1, FARROKH SIYAR, ordinary type, ..... 1  
2, MUHAMMAD SHÁH, *Sahib Qirán* type, ..... 4

Total Mughal ... 5

## II, Durrání Rupees :—

1, TAIMÚR SHÁH, 1187—1207 A. H. = 1773—1793 A. D.  
a, ordinary type of Mughal rupee, mint *Atak* ..... 1  
b, Kábulí type; mint *Kábul* and *Hirát* (Num. Chr. VIII, 3)..... 2  
2, ZAMÁN SHÁH, 1207—1216 A. H. = 1793—1801.  
a, Kábulí type, one variety, as in Num. Chron. VIII, No. 59, mint Pesháwar ..... 1  
b, Kábulí type, another variety, as in Num. Chron. VIII, No. 70, mint Pesháwar, date 1211 ..... 2

|   |                        |       |
|---|------------------------|-------|
| 3, SHUJÁ'U-L-MULK, 1216—1258 A. H. = 1801—1842 A. D.<br>Kábulí type, mint Pesháwar .....                        | 1                      |       |
| 4, MAHMÚD SHÁH, 1216—1245 A. H. = 1801—1829 A. D.   |                        |       |
| <i>a</i> , Kábulí type, one variety, as in Num. Chron. VIII,<br>No. 82, mint Aḥmadsháhi, date 1217 .....        | 1                      |       |
| <i>b</i> , Kábulí type, another variety, as in Num. Chron.<br>VIII, No. 85, mint Dáru-s-Saltanat Hirát, 1218... | 1                      |       |
|   |                        | <hr/> |
|   | Total Durránís ...     | 9     |
| III, Sikh Rupee :   |                        |       |
| RANJIT SINGH, mint Amritsar, Samvat 1868 .....  | 1                      | 1     |
|   |                        | <hr/> |
|   | Grand total Rupees ... | 15    |

IV. Report on 29 old silver coins, forwarded by the Offg. Collector of Pubna, with his No. 372, dated 15th June 1891, and No. 561, dated 28th July 1891.

The exact locality of the find of these coins is not stated in the Collector's letter; they are supposed to have been found sometime in February or March 1891. Some more coins appear to have been found, but broken and melted into bars by the finders. Their value is stated to be about Rs. 32-8.

The coins include 4 of Paṭhán Sultáns of Delhi and 24 of the so-called Independent Sultáns of Bengal. They may be classified as follows:—

I, Paṭhán Rupees:

|  |                  |       |
|--|------------------|-------|
| 1, SHER SHÁH, 947—952 A. H. = 1540—1545 A. D.<br>Type: square areas, date 946 .....  | 1                |       |
| 2, ISLÁM SHÁH, 952—960 A. H. = 1545—1552 A. D.<br>Type <i>a</i> : circular areas; a new variety of No. 361 <i>a</i><br>in <i>Thomas' Chronicles</i> ; date 952 to be read<br>from within; no mint..... | 1                |       |
| Type <i>b</i> : square areas, dates 956, 960, two inferior<br>specimens .....  | 2                |       |
|  |                  | <hr/> |
|  | Total Paṭhán ... | 4     |

II, Independent Sultán's of Bengal:

|  |   |  |
|--|---|--|
| 1, 'ALÁU-D-DÍN ḤUSAIN SHÁH, 899—925 A. H. = 1493—<br>1518. |   |  |
| <i>a</i> , Type, as in Brit. Mus. Cat., Nos. 123—130 ...   | 3 |  |
| <i>b</i> , Type, as in Marsden DCCLXXIX .....              | 3 |  |
| <i>c</i> , Type, unpublished .....                         | 1 |  |

|  |    |
|--|----|
| 2, NAṢIRU-D-DÍN NAṢRAT SHÁH, 925—939 A. H. = 1518—1532 A. D.   |    |
| <i>a</i> , Type, as in Brit. Mus. Cat., No. 137 .....  | 1  |
| <i>b</i> , Type, as in Brit. Mus. Cat., Nos. 139, date 925   | 8  |
| 3, GHİYÁṢU-D-DÍN MAḤMÚD SHÁH III, 933—944 A. H. = 1532—1537 A. D.  |    |
| Type as in Brit. Mus. Cat., No. 147 .....  | 3  |
| 4, GHİYÁṢU-D-DÍN BAHÁDUR SHÁH, 962—968 A. H. = 1554—1560 A. D., type: square areas, as in Brit. Mus. Cat., No. 155 ..... | 4  |
| 5, GHİYÁṢU-D-DÍN JALÁL SHÁH, 968—971 A. H. = 1560—1563 A. D., as in Brit. Mus. Cat., No. 153, dated 970                  | 1  |
|  | 24 |
| Total Bengal   |    |
| III, Mughal Rupee:   |    |
| 1, SHÁH JAḤÁN, 1037—1068 A. H. = 1627—1658 A. D., type: two square areas, ordinary, date 1047, 10, mint illegible .....  | 1  |
|  | 29 |
| Grand total coins ...  |    |

V. Report on 792 old copper coins forwarded by the Offg. Collector of Monghyr, with his No. 721R, dated the 1st August 1891.

The coins are stated to have been found in January 1889, buried in the garden of Hazari Shahú of Mouza Bargazar, Parganá Salimábád, outpost Lakhí Sarai.

A very large number of the coins are not in a sufficiently good state of preservation to be fully identified; but they all belong to the coinage of the Sultáns of Jaunpur, and to the so-called "second size" of their copper coins, as described in the Catalogue of the British Museum on the *Coins of the Muhammadan States of India*, p. 89. Of these copper coins, there are two types: one with simple lettered surfaces, the other with a circular area on the reverse. The former is a very common type; the latter is rather rare. The coins, under review, all belong to the common type. Four of them together weigh  $1\frac{1}{2}$  tolá, and six of them are equal to one anna, or each of them is equal to 2 pice (1 pice =  $\frac{1}{12}$  anna).

Those specimens, that I have been able to identify, are thus distributed:

|   |    |
|---|----|
| 1, IBRÁHÍM SHÁH, called <i>Sharqí</i> , A. H. 803—844 = A. D. 1400—1440; like B. M. Cat., Nos. 238, ... | 86 |
| 2, MAḤMÚD SHÁH, bin Ibráhím, A. H. 844—861 = A. D. 1440—1456; like B. M. Cat., No. 273, ...             | 98 |

|                        |  |                     |
|------------------------|--|---------------------|
| 3,                     | MUHAMMAD SHÁH, bin Maḥmúd, A. H. 861—863 = A. D.<br>1456—1458; like B. M. Cat., No. 301, | ... 37              |
| 4,                     | HUSAIN SHÁH, bin Maḥmúd, A. H. 863—900 = A. D.<br>1458—1500; like B. M. Cat. No. 327,    | ... 59              |
|                        | Total ...  | 280                 |
| Unserviceable coins :— |  | 512                 |
|                        |  | Grand total ... 792 |

MR. C. H. TAWNEY read the following note :—

I do not think attention has ever been drawn to the fact that in Indian tales the royal dignity is often described as bestowed by lot. At any rate this appears to have frequently taken place, when a king died without leaving male issue. In the Kathá Sarit Ságara, Taranga 65, we read that it was the custom in a certain country, when the king died, to turn loose an elephant, and any man that he took up with his trunk, and placed on his back, was anointed king.

In the Kathá Kośa, a collection of edifying tales written in Jaina Sanskrit, an excellent manuscript of which has been kindly lent to me by the Principal of the Sanskrit College, a slightly different method is described. We read in the story of Devapála, the second story in this work, that the king of a certain city died of cholera, and left no male issue. "As there was no son to succeed him, the ministers appointed an elephant, and fastened to its temples a pitcher of water, and let it go. It found the servant, named Devapála, asleep under a *pípal*-tree, and emptied the pitcher on his head. They bestowed on him the kingdom."

In this way the servant was rewarded for showing devotion to a stone image of the Jina, that he found in a river.

In the story of Amaradatta and Mitránanda, the 20th story in the Kathá Kośa, we find the following account given of the election of a king at Pátaliputra :

"Now it happened that the king of that city died in the course of the night, without leaving issue. Then the ministers had recourse to the five ordeals, (*divyóni*). The mighty elephant came into the garden outside the city. There the elephant sprinkled prince Amaradatta and put him on his back. Then the horse neighed. The two chowries fanned the prince. An umbrella was held over his head. A divine voice was heard in the air, 'Long live king Amaradatta.'"

It happens that in this particular case the person chosen was by birth a prince, and was roaming about *incognito*. But this is merely a piece of folk-lore justice.

The above extract may be supported by another from the tale of Virāngada and Sumitra, which is an episode in the tale of Ratnaśikha, the 69th in the Kathá Kośa. It runs as follows :—

“The king of the city of Mahásála died without a son. Then the barons had recourse to the five ordeals of the elephant, the horse, and so on. The elephant came into the city park trumpeting. Then he sprinkled the prince, named Virāngada, with the water of inauguration, and taking him up in his trunk, placed him on his forehead, (*kumbha-sthala*). All the barons, and the chief ministers, and the other ministers, and the crowd with them bowed before the king, and exclaimed ‘Long live the king!’”

The five ordeals are described even more clearly in a passage in the story of Múladeva, the eighth in Professor Jacobi’s “Erzählungen in Maháráshtrí,” or “Tales in Maháráshtrí Prákrít.”

The story is said by the editor to be taken from Devendra’s Commentary on the Uttarádhyaana Súra. The passage may be thus translated :—

“At this juncture the king of the city died without leaving a son. They then had recourse to the five ordeals, (or instruments of selection, Prákrít *divváni*). These roamed about in the city, and went outside it. They came to Múladeva. He was found sleeping in the shade of the *champaka*-tree. On seeing him the elephant trumpeted, and the horse neighed : he was sprinkled by the pitcher and fanned by the chowries, and the umbrella stood over him.”

It is remarkable in this connexion that Darius, son of Hystaspes, is said to have been chosen king of the Persians owing to the neighing of his horse, it having been agreed by the seven conspirators who destroyed the usurper Smerdis, that the one of them, whose horse neighed first, should become king.\*

It seems probable that this story points to a Persian custom resembling that which prevailed in India.

Indeed it appears that even in the latter country it was the custom occasionally, to dispense with the elephant, and to rely upon the horse as the sole instrument of selection.

This is proved by the following passage taken from another story in Dr. Jacobi’s collection, the story of the Pratyeka Buddha Karakaṇḍu :

“The three fled and reached Kánchanapura. There the king died without male issue. A horse was let loose, and came near Karakaṇḍu,

\* Herodotus (Book III, cc. 83—87) tells us that the success of Darius was due to an artifice of his groom ; but at the same time he asserts that the neighing of the horse was accompanied by thunder and lightning from a clear sky. It is possible that artifice was not always absent in similar cases in India.

as he was sleeping outside the city. The horse circumambulated him and stood still. The citizens observed with awe that he possessed the auspicious marks of a king. They raised a shout of triumph and beat drums of rejoicing. He rose up yawning."

It is worthy of note that according to Herodotus, the seven conspirators agreed to decide the question of succession, by observing whose horse neighed first in the suburb, (*προάστειον*) at sunrise. This constitutes a further similarity between the Indian custom, and the custom which I suppose to have existed in Persia. It seems natural that both horses and elephants should be employed in India in choosing kings, as Strabo tells us (Book XV, c. 41) that "no private person is allowed to keep a horse or an elephant. The possession of one or the other is a royal privilege, and persons are appointed to take care of them."

The passages which I have quoted are taken with one exception from Jaina works. But I find a trace of a similar custom in the Darímukhajátaka, (Fausböll, Vol. III, p. 238). In this Játaka we read that on the seventh day after the death of the king of Benares without male issue, the *purohita* sent out the *phussaratho*. The word *phussaratho* is explained in Childers's Pali Dictionary as meaning simply "chariot." In Sanskrit the word *pushyaratha* is said to mean a pleasure-chariot, as opposed to a war-chariot. We are told in the Pali text that the custom of the *phussaratho* will be explained in the Mahájana-játaka, but I have not been able to find this Játaka in the three volumes published by Fausböll. The *phussaratho* left the city of Benares surrounded by an army of elephants, cavalry, chariots and infantry, and with the beating of many drums, arrived at the gate of the king's garden, in which the two heroes of the tale, the Bodhisattva and his friend Darímukha were sitting. Darímukha knew, as soon as he heard the sound of the drums, that his friend the Bodhisattva would shortly be elevated to the royal dignity, and as he preferred the life of a wandering religious mendicant, he immediately left the garden, for fear that his friend might appoint him commander-in-chief. The *purohita* entered the garden, and finding the Bodhisattva sitting on the auspicious stone, and seeing that he possessed the auspicious marks which entitled him to govern even the four *dvípas*, and being satisfied with certain indications of his character, informed him that the crown had fallen to his lot. The Bodhisattva, when he had satisfied himself that the late king had died without male issue, accepted the throne, and his coronation (or rather sprinkling) took place then and there. I own that in this last case the appeal to divination seems to have degenerated into a mere formality.

Of course the collections of Indian tales, from which I have made extracts, contain incidents and plots common to the folk-lore of many

countries. But I think that the institution of the five ordeals must have been a custom widely recognised in this country, as otherwise no narrator would have introduced such a minute account of it into tales intended for Indian readers.

No doubt scholars whose acquaintance with ancient Indian literature is wider than my own, will be able to throw fresh light on the subject.

The following papers were read :—

1. *Natural History notes from H. M's. Indian Marine Survey Steamer "Investigator,"* Commander R. F. HOSKYN, R. N., commanding. No. 25. *The Vegetation of the Coco Group.*—By D. PRAIN.

[Abstract.]

The Cocos consist of three islands extending over a space of 15 miles, lying 30—45 miles north of Landfall, the northmost island of the Andaman main group. These islands were visited by the writer when the "Investigator" was surveying there in December 1889 and in November 1890. All three islands were visited and a collection of plants made. This paper describes the collection. It consists of three parts;

1. A sketch of the vegetation of the group with an account of the relationship this bears to the physiographical features of the group.

2. A list of the species collected; with notes on their habitat, distribution, and, occasionally, their systematic position.

3. An enquiry into the nature, distribution and probable origin of the Flora.

The plants collected comprise 358 species distributed among 268 genera and 95 natural orders, 297 species being Phanerogams and 61 Cryptogams—a proportion of 4·85 to 1.

Among the Phanerogams 238 are Dicots and 59 are Monocots—a proportion of 4 to 1.

Among the Dicots the *Polypetalæ* equal the rest of the groups in number, a somewhat unusual circumstance. The most extensively represented natural order is *Leguminosæ* (34 sp.); after a long interval come *Euphorbiaceæ* and *Gramineæ* (15 sp. each); *Convolvulaceæ* (14 sp.); *Rubiaceæ*, (13 sp.); *Urticaceæ*, (11 sp.); *Cyperaceæ*, (10 sp.). No other natural order, except *Filices*, (10 sp.), has more than 8 sp. and 24 of the natural orders have but one species each.

The non-vascular species (Lower cryptogams—*Algæ*, *Fungi*, and *Lichens*) number 46; of the remaining 312 sp., 234 are erect and 78 are climbers—a proportion of 3 to 1.

Of erect species 142 are woody, 92 are herbaceous; among climbers 35 are woody, 43 are herbaceous—a proportion in the first case of 3 to 2 and in the second of 4 to 5. Of the climbing species 20, or 25%, are armed.



As regards distribution:—70 are cosmopolitan in the tropics, 10 more are present in the tropics of both hemispheres, but are scarcely cosmopolitan; 49 are widely distributed in the eastern hemisphere; 41 are confined to Asia and Australasia; and 183 are confined to South-eastern Asia.

As regards more local distribution: 252 species extend to India, or Ceylon, or both; 153 species extend to Australia; 140 species to China.

The islands lie so to speak intermediate between the Indo-Chinese and Malayan phytogeographic districts and the following is the occurrence of species within these:—confined, so far as is yet known, to the Cocos Group, 13; occurring in the Andamans, 324 (90%); occurring in Malaya, 275 (76%); in Tenasserim, 259 (72%); in Indo-China, 256 (71%). We conclude therefore that the group forms phytogeographically part of the Andamans and that in its flora a Malayan influence predominates slightly over the Indo-Chinese.

Examined with a view to ascertaining more precisely the probable origin of the flora we find that of species which may possibly have been introduced (not thereby necessarily implying that they are *not* indigenous but simply pointing out that it is not *essential*, in order to account for their presence, to postulate a connection of the islands with neighbouring land) the list contains 283, as opposed to 70 that seem to require the conception some former land-connection in order to explain their occurrence. The proportion of *Migrant* (possibly introduced) species to *Remanent* (certainly indigenous) species is therefore 4 to 1. The remanent species indicate that the most recent former land-connection may have been with Indo-China.

Of the introduced species 33 are “civilized” plants, cultivated plants or weeds, introduced voluntarily or involuntarily by man; 94 have been perhaps introduced by birds (assisted perhaps slightly by frugivorous bats); 60 have been introduced by winds; 101 by the sea.

Of the sea-introduced species 21 are marine plants, 80 are littoral species; they appear to have come wholly from Malayan seas. The wind-introduced species indicate that it is the north-east (not the south-west) monsoon which is the more important factor. This might be expected since the latter blows over a wide expanse of ocean to these islands, while the former, though not so strong, blows steadily for some months each year from the direction of the nearest land. The bird-introduced species are of two kinds:—Those attached externally to the bodies of birds and those carried in the crops of birds. Of the first kind there are two sub-groups: *a.* those attached immediately to their bodies by reason of the fruits being viscous or being provided with barbs or

hooklets to their seeds or fruits; of this kind there are possibly 9 species : *b.* by means of other substances, *e. g.*, spiders-webs, or mud, as in the case of swimming and wading birds; of this kind there are 16.

Those carried in the crops of birds are also of two different kind : *a.* those introduced by frugivorous birds (perhaps also partly by bats), where the fruits are eaten on account of their pulp and the seeds, though swallowed, are voided uninjured; of this kind there are 55. This mode of introduction is an every-day result of the mode of life of the creatures concerned : *b.* those introduced by grain- and seed-eating birds, where introduction can only happen when the bird that brings the seed or grain falls a victim, on arrival, to some bird or beast of prey; this may happen in the case of any migrating bird when it arrives fatigued after a lengthened flight, and must also happen to a certain proportion of the birds that are driven, numbed or injured, to the land by storms. Of this kind there are perhaps 14 species.

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

2. *List of Diptera of the Oriental region*, Part II,—By MONS. J. M. F. BIGOT. *Communicated by* THE NATURAL HISTORY SECRETARY.

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

3. *On a symbolical coin of the Wethdli dynasty of Arakan*,—By W. THEOBALD, M. R. A. S. *Communicated by* DR. W. KING.

4. *Græco-Roman Influence on the Civilization of Ancient India (Second Paper)*,—By VINCENT A. SMITH, M. R. A. S., *Bengal Civil Service*.

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

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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR DECEMBER, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 2nd December, 1891, at 9 P. M.

J. WOOD-MASON, Esq., Vice-President, in the chair.

The following members were present:—

Bábu Gaurdás Bysack, Hon. Sir A. W. Croft, Bábu Saratchandra Dás, G. C. Dudgeon, Esq., The Most Rev. Dr. Paul Goethals, Dr. A. F. R. Hoernle, T. H. Holland, Esq., Rev. H. B. Hyde, C. Little, Esq., C. J. Lyall, Esq., Kumár Rameswár Maliáh, W. H. Miles, Esq., Bábu Asutosh Mukhopádhyáy, T. R. Munro, Esq., L. de Nicéville, Esq., R. D. Oldham, Esq., Pandit Haraprasád Shástri, C. H. Tawney, Esq., Dr. E. Thurston, Col. J. Waterhouse, C. R. Wilson, Esq.

Visitor:—Rev. Dr. K. S. Macdonald.

The minutes of the last meeting were read and confirmed.

Forty-four presentations were announced, details of which are given in the Library List appended.

The following gentleman duly proposed and seconded at the last meeting of the Society, was balloted for and elected an Ordinary Member:—

A. Mervyn Smith, Esq., C. E., F. S. A.

The following gentlemen are candidates for election at the next meeting:—

Lieutenant Wolseley Haig, Benares, proposed by Col. H. S. Jarrett, seconded by C. Little, Esq.

J. Woodburn, Esq., C. S., Allahabad, proposed by C. H. Tawney, Esq., seconded by C. Little, Esq.

Bábu Gerindranath Dutt, Hutwa Raj, proposed by Pandit Mahes-chandra Nyáyaratna, seconded by C. Little, Esq.

H. K. W. Arnold, Esq., Calcutta (for re-election), proposed by L. de Nicéville, Esq., seconded by C. Little Esq.

H. N. Thompson, Esq., Monywa, proposed by W. L. Sclater, Esq., seconded by Dr. W. King.

The following gentleman has expressed a wish to withdraw from the Society:—

Denzil Ibbetson, Esq., C. S.

The following papers were read:—

1. *The Antiquities of Belwa-Sirsea*,—By GERINDRANATH DUTT, SUPERINTENDENT OF THE HUTWA RAJ. Communicated by the PHILOLOGICAL SECRETARY.

Ever since my lot was cast to serve this Ráj, I have been labouring under the impression that this very ancient Ráj is replete with objects worthy of an antiquarian's research. The situation of the temple and forest at Thaway and the site of the Hosseypore forts (old capital of the Hutwa Mahárájas), and the winter tour diary of my predecessor, the former Superintendent of the Hutwa Ráj, who is now the Manager, framed this belief into a conviction which was strengthened by learning of the Lauriya-Araraaj and Lauriya-Navandgarh pillars in the neighbouring Ráj of Bettiah from Cunningham's *Corpus Inscriptionum Indicarum* (Vol. I, p. 4). Only the other day I issued orders to all native Thikadárs and Putwaries of the villages to inform me at once if they know or hear of the existence of any relic of antiquity; and the reports received from various quarters of this extensive estate made me sanguine of success. The most interesting of these reports is the one received from the Putwary of Belwa Bhaya, a village in lease to the Moniarah Factory, about 6 miles north-west of the sub-division of Gopalgunge and 18 miles from the Hutwa Palace. I could not make time to see the place through press of work till the 3rd instant, when I set out for the place having previously sent a sowar to catch hold of the Putwary and keep him waiting at the Gopalgunge road to lead me to the place.

As we neared the place the existence of very old *Bar* and *Pípal* trees on the sides of the road led me to conclude that we were entering a place of some antiquity. Our camp was pitched at some distance from the spot, but without halting there for rest, notwithstanding the fatigue of a drive over 18 miles of road only partly metalled, we drove direct to



the spot, which is a small jungle of about a bighá, circumscribed by cultivated fields. There under a Pipal tree (which does not appear to be as old as the antiquities themselves) stands a big image of Buddha Gautama, which was formerly buried under a mound of earth and is not yet wholly dug out. Although the Putwary in his report had stated this to be a *Bhairoji's Murti*, as called by the ignorant villagers, from the description given in it I was at once convinced, even before seeing the spot, that the antiquities must be of a Buddhistic and not Brahmanical period. The length of the whole image, excluding the pedestal and including the arched top which much resembles a *chalchitra* (चालचित्र), is 6', 5" and breadth 3', 4". The figure itself measures 3', 10" from the feet to the mutilated head. It is in a standing posture, having its head cut off down to the chin and both hands mutilated, showing the vandalism of fanatics on the revival of Brahmanism. On both sides of the figure are carved figures of lions and elephants ridden by male human forms measuring 1', 2". Below this are figures of two women about 2 feet in length, having their hands and heads mutilated. The arched top is finely ornamented with decorations. In its middle is the half mutilated face of some form much resembling that of a dragon or *Nṛsiṃha*, having on its both sides the forms of two fairies flying with folded hands but with mutilated faces. The pedestal on which the image stands has got in its cornice finely carved male human figures in kneeling postures with folded hands. The whole image is carved out of a single block of black marble, and stands on a block reported to have taken root deep in the ground.

Besides this image of Buddha we found, lying on the ground, door-frames, said to have been excavated by some Sádhu. The two door jambs measure 5' 2" × 10' × 7', having eight human figures, all in different postures, and beautifully interlacing cornices. The biggest of these figures is 7 inches and others 5 inches. The two jambs correspond to each other in every particular. The top sill measures 5' 1" (broken) × 1' 2" × 8½", and shows the figure of Buddha in *Padmasan* under an arcade. The face and right hand of the figure are mutilated, and the left hand is counting *mantras*. It has very beautifully carved cornices with mouldings. There are several human figures in the uppermost cornice, which is divided into ten little columns each containing two human figures playing musical instruments. On both the extremities are two large figures with mutilated faces.

The bottom sill measures 6' 10" in length of which 5 feet 1 inch is covered with ornaments, and 10 inches on each side appear to bear traces of some inscriptions. This sill measures 10 by 7½ inches. The ornamental part contains beautifully interlacing foliage.

The villagers asserted that images, &c. are found wherever the spot is dug, and on digging out a little I found three large stones, two running at right angles and one horizontal, containing mutilated figures, some riding on a bull, a lion and a tiger, and two other hopelessly mutilated animal figures. Another slab was partially dug out, lying just in front of Buddha's image, bearing some marks which may be those of inscriptions. Hard by the image of Buddha, under the Pípal tree, is a choked up well, which is said to contain a good many images and also the severed limbs of these figures.

We were then led a few yards further out of this jungle to a Pípal tree with shrub-grown pile at its foot, under which the villagers asserted the image of *Sivjí* was buried. I only discovered a slab lying there, but cannot say what could be discovered on removing the mound of earth.

Thence we drove to the adjacent village of Sirsea to see the fort of the *Cheroos*. Who these *Cheroos* were, the villagers could not tell; but on questioning the Manager of the Hutwa Ráj I learnt that they were the ancient (aboriginal?) inhabitants now extinct, and that relics of their time were also being found in some other parts of the Ráj. We found no sort of fortification at Sirsea but only a high level *charida* (pastural) ground, of about 25 or 30 bighás, perforated with pits of porcupines. We found there a number of small wells, only 3 feet square, strongly built with small bricks none of which had given way. I saw one of these wells still used by the villagers to water their fields by means of a *Dhenkúl*, and I was informed of the existence of one more almost choked up, but they asserted there were 52 in former times.

The villagers then spoke of the existence of some *ghát* where the *Cheroo* Rájá used to bathe; but as it was too dark I had to return without seeing it.

2. *On the Dinájjpur Copper Plate Inscription of Maháipála*.—By PROF. F. KIELHORN, C. I. E., Göttingen. Communicated by the PHILOLOGICAL SECRETARY.

3. *First Instalment of the Bower Manuscript, transcript, translation and notes*.—By DR. A. F. R. HOERNLE.

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

4. *On a Botanical visit to Little Andaman and the Nicobars*.—By D. PRAIN.

While awaiting the arrival of the "*Investigator*" at Port Blair in November 1890, the writer was invited by Col. Cadell, v. c., Chief Commissioner of the Andamans, to visit, in connection with the Botanical Survey of India, the islands of Narcondam and Barren Island, two places

rarely visited and not previously botanically explored. Having obtained the permission of Dr. G. King, F. R. S., the writer was enabled to make this visit in the "*Nancowry*" during March and April 1891. After visiting Narcondam the steamer was required at Port Blair in order to proceed to Little Andaman and Car Nicobar, and Col. Cadell not only permitted the writer to accompany the vessel there, but also, at the suggestion of Mr E. H. Man, kindly directed her to proceed to Batti Malv, a small island without inhabitants and very difficult of access, lying 18 miles south of Car Nicobar. After returning from Batti Malv the steamer took the writer to Barren Island.

The botanical results of the visits to Narcondam and Barren Island, which together formed the central feature of the tour, and the botanical exploration of which was the writer's main purpose, will, it is hoped, soon be made public. The results of the visits to the islands of Little Andaman, Car Nicobar and Batti Malv have been dealt with separately and are now laid before the Society. They have been treated in this fashion, partly because these visits formed an episode in the tour apart from its main object, but chiefly because the lists are less exhaustive, owing to the short time available for collection in each place, than the corresponding lists for Barren Island and Narcondam will be.

The details of the visits are as follows:—the "*Nancowry*" left Port Blair on the morning of Good-Friday, reaching Bomliya Creek, where two natives of Little Andaman, who had been visiting Port Blair, were to be landed, about 2 P. M. As the state of the tidal currents made it inadmissible to leave again till 5-30, the writer had an opportunity of spending three hours in collecting at the mouth of the creek and for a mile or two along the north coast of the island to the east of this. The jungle behind the beach forest was too dense and the time available too short to admit of his penetrating any distance into the interior.

The island of Little Andaman, as seen from the sea, presents a somewhat different appearance from Great Andaman. Instead of being diversified by ridges and valleys and isolated hills, it has a long, low uniform rounded outline similar to that of Sentinel Island as seen from the top of Mount Harriet near Port Blair, and to that of Car Nicobar. It appears, however, to be uniformly covered with forest and to have none of the bare grass-heaths that characterise Car Nicobar. The creek at which the writer landed is the principal one on the north coast of the island. It derives its name from an Andamanese word meaning "flies," and certainly these insects abound there in great numbers and are very troublesome. There is nothing in the mangrove-swamp vegetation to distinguish this from similar places in the Andamans and very little in the beach-forest to characterise the island except that *Casu-*

*arina equisetifolia* is here very plentiful immediately behind the beach. This species, the writer was informed at Port Blair, is equally plentiful in the whole circuit of the coast, so much so that the Andamanese name for the island is Wirra-Maru, *Anglicé* "Casuarina-sand." In Great Andaman this tree, as an indigenous species, is confined to a single bay on the west side of North Island. As in Great Andaman there are no Coco-nut trees on the coast. On the reefs the chief distinctive features are the presence of beds of *Halophila ovalis* and considerable quantities of *Halimeda discoidea*. The visit took place between half-tide and full-tide and no exposed rocks were seen in the vicinity at the time.

Leaving about 6 P. M. the "*Nancowry*" steamed to Car Nicobar to land some men belonging to Kimiós village, who had been in prison at Port Blair. Sáwi Bay was reached on Saturday morning and two men of Moos village, with their canoe, were taken on board to assist in landing on Batti Malv. Owing to the heavy surf running it was found that landing in Kimiós Bay would be very difficult; the vessel therefore, about 2 P. M., anchored off another village 5 miles to the north and the writer was able to land, and walk to Kimiós and back, along two jungle paths, collecting by the way and getting on board again at dusk. Owing to the short time available attention could only be directed to the sea-fence, the beach-forest, the under-growth of the Coco-nut zone, and the mere outskirts of the interior jungle. Car Nicobar is so well-known that no particular notice of its appearance is necessary. There is the usual fringing-reef with a sandy beach, behind this the sea-fence, and within that a zone of beach-forest, of which the area under Coco-nut trees forms an integral portion. The indigenous species are very much like those of the Andamans in similar places—the great distinguishing feature being, of course, the wide Coco-nut zone. The Coco-nuts themselves are particularly fine, and though at Port Blair the finest sorts of Nicobarese and Ceylonese Coco-nuts are carefully cultivated they do not equal those of Car Nicobar either in flavour or size. Yet those of Car Nicobar are said to be by no means the best that the Nicobars can produce. The true interior forest and the grass heaths the writer had no opportunity of examining.

In the night the "*Nancowry*" proceeded to Batti Malv, which was reached at dawn on Easter-day, and the writer, going on shore at once, spent the greater part of the day there, collecting. Landing, even with the assistance of the Nicobarese and their canoe, was effected with considerable difficulty at the north-west corner of the island, where alone it is said to be possible to go on shore. At this point the shore is precipitous, sinking into deep water without any coral fringing-reef and rising into a jagged wall broken somewhat by gullies and small caverns, nearly

everywhere overhanging, and occasionally with tunnelled projecting points. This wall is here on an average from 10–15 feet above high-water-mark. There was no time to circumnavigate the island, but the coast is said to present similar features in its whole circuit, the cliff being highest at the south-west corner of the island and being there about 50 feet high.

The difficulty of landing is largely due to this feature of overhanging cliff and is much increased by the strength of the tidal currents which, even in calm weather, cause a heavy swell to surge into the caverns and along the cliff-face. On reaching the edge of the cliff we find, at this part of the coast, a rocky platform over which the waves evidently wash in the monsoon. The rock is a limestone, and is, by weathering and wave-action, worn into the most fantastic spikes and pinnacles and ridges,\* the sharp edges of which make walking extremely difficult. This platform slopes backwards rather rapidly to a height of about 10 feet more when the jungle commences with the ordinary sea-fence of *Pandanus*, etc.; the platform itself is almost destitute of vegetation, the only species present in it being tufts of *Oldenlandia corymbosa*, *Boerhaavia repens* and *Fimbristylis diphylla*. Within the sea-fence the surface of the island is even and almost flat from side to side of the island.†

The commonest tall tree is *Mimusops littoralis*, which is not here confined to the coast-zone, but extends from side to side of the island. The jungle is less dense than Andamans and Nicobar forests usually are. There is a wonderful absence of climbing species, especially of the class of armed climbers, and there is a remarkably large number of species with edible fruits, a feature that doubtless owes its existence

\* This fantastically-weathered limestone so much resembles the bottom of a coral-pool that the rock has actually been described as a raised coral-reef. (See Hume: *The Islands of the Bay of Bengal*, in *Stray Feathers*, vol. ii, p. 95).

† The Admiralty maps give the island a "landmark-height" of 130 feet which is doubtless correct, and in some maps it will be seen that a hill is indicated in the centre of the island; this, however, is quite incorrect. The height at the north-east corner is, as has been said in the text, about 30 feet; at the south-west corner the height is said to be about 60 feet; assuming that the whole island has an even surface the middle of the island cannot exceed 45 feet. Here, as in all other islands exposed to strong monsoons, the trees immediately on the coast are stunted and dwarfed, becoming progressively taller as we pass inland. The principal tree is *Mimusops littoralis*, and even near the shore this often reaches a height of 60 feet, while trees a few hundred yards inland reach 80 feet; this is the common height of the tree and one which it rarely exceeds. The height obtained by angular measurement from the sea thus not only does not require us to suppose that there is a hill in the middle, but shows that there cannot be anything of the sort and the newer maps correctly indicate that the island has a flat surface.

to the fact that the island, being so remote and so inaccessible, is largely frequented by fruit-eating pigeons and is one, (it has been even said, is the only), known locality in which the large Nicobars pigeon (*Caloenas nicobarica*) breeds. Fruit-eating bats too are abundant in the island and are perhaps partly responsible for the introduction of some of these species. Among the more interesting species of this kind is the *Datura*, which in most localities is considered, and probably correctly considered, a species introduced by man but which here undoubtedly must be a bird-introduced plant. Not only is it an exceedingly rare thing for the Nicobarese to visit the island, *Datura* is not a plant with which they are acquainted. The writer, who collected all the possibly introduced species to be found in the neighbourhood of the two villages on Car Nicobar visited by him did not find it present. Moreover it was apparently not found either by Mr. Jelinek during the visit of the frigate "*Novara*" or by Mr. Kurz during his visit to the Nicobars, and no *Solanaceæ* are enumerated in Mr. Kurz's list of Nicobars plants in the Society's *Journal*, vol. xlv, part 2, p. 115 *et seq.* Though uninhabited and apparently very rarely visited there are some Coco-nut trees; the nuts are, however, small and their flavour is rather poor. The few trees that occur are just within the *Pandanus* fence, and there is nothing like a Coco-nut zone. There is no water on the island; still, besides the bats, there occur, of mammalia, both rats and pigs; the traces of the latter were very common and one pig's skull was found in the jungle. The great feature of the island, however, is the enormous multitude of Nicobar pigeons. These swarm everywhere, in the trees and on the ground, and remind one by their numbers of an English "rookery."\* No snakes were seen, but the number and variety of the lizards was very remarkable.

One of the most striking features of the island was the freshness and greenness of the foliage, even in March; a circumstance that, considering the nature of the soil, must be altogether explained by the remarkably heavy dews that are deposited in these latitudes. Landing as the writer did, at day-break, he found the leaves quite as heavily laden with water as they could possibly have been after a thunder-shower, and on the side of the island away from the sun the dews had not yet become completely dissipated at 10 A. M.

After spending eight hours on shore the writer, himself, but not the island, exhausted, had reluctantly to return to the "*Nancowry*" which at once steamed off to Andamans, reaching Port Blair on Monday at noon.

\* For an interesting account of the appearance of the island see Mr. Hume's paper already referred to; *Stray Feathers*, vol. ii, pp. 94—97.

In the two subjoined lists the plants obtained during this short tour are enumerated. The first list gives, for the sake of convenience, those collected in Little Andaman. Species for which their occurrence here is the first indication of their presence in the Andaman group are distinguished by an asterisk.

The second list gives the plants obtained in Car Nicobar and in Batti Malv. Those for which this is the first record of their occurrence in the Nicobars and which are not given in the *Enumeration of the plants of the Nicobar Islands* by Mr. Kurz (*Journ. As. Soc. Beng.*, xlv, pt. 2, p. 115—164) are similarly distinguished.

I. LIST OF PLANTS COLLECTED AT BOMLIYA CREEK, NORTH END OF LITTLE ANDAMAN.

GUTTIFERÆ.

CALOPHYLLUM INOPHYLLUM Linn.

MALVACEÆ.

HIBISCUS TILIACEUS Linn.

THESPIA POPULNEA Linn.

STERCULIACEÆ.

STERCULIA RUBIGINOSA Vent., var. GLABRESCENS King. (*Sterculia mollis* Kurz in *Jour. As. Soc. Beng.*, xlv, pt. 2, 120 not of Wallich.)

MELIACEÆ.

5. CARAPA OBOVATA Blume.

Having seen both *C. obovata* Bl., and *C. malaccensis* Lamk. *in situ* and examined them as they grow, it is very difficult for the writer to give his assent to the proposition that treats the two as conspecific. *C. moluccensis* is common on rocky coasts, while *C. obovata* is confined to muddy flats, in which it is common, and to mangrove-swamps, of the vegetation of which it forms an integral portion. There is no difficulty with the large suites of specimens that are preserved in the Calcutta Herbarium in distinguishing the one plant from the other, and the residents of Port Blair who know both find it impossible to understand why botanists should wish to believe them to be the same. It may be that their differences, so palpable to the untrained eye, are altogether due to the environment of the two being so different; this, however, if it be a fact, can only be demonstrated by experiment and the *onus probandi*

obviously rests with those who would unite, not with those who can distinguish, the trees; till the point is settled the writer feels compelled to follow Blume in treating them as distinct. In the Andamans *Carapa moluccensis* flowers in November and December, *C. obovata* flowers in March and April.

#### LEGUMINOSÆ.

DESMODIUM UMBELLATUM DC.

ABRUS PRECATORIUS Linn.

ERYTHRINA INDICA Lamk.

CANAVALIA TURGIDA Grah. in Wall. Cat.

This is the common sea-shore *Canavalia* of the Andaman, Nicobar and Malayan coasts and is undoubtedly the plant intended by Graham as *C. turgida* Wall. Cat. n. 5534 A, a plant collected by Wallich in Penang. Cat. n. 5534 B, from Siam (*Herb. Finlayson*), is not represented at Calcutta but most probably is, since Graham and Wallich thought so, the same plant. *C. turgida* is certainly not identical with *C. ensiformis*, even if we admit that the *Canavalia gladiata*, cultivated in the Eastern Hemisphere, is conspecific with the American cultivated plant; nor is it the same as *C. virosa* W. & A., with which Mr. Kurz has identified it (*Journ. As. Soc. Beng.* xlv, pt. 2, p. 127) and which the writer agrees with Mr. Baker in considering the wild form of *Canavalia ensiformis* (*C. gladiata*). The interior of the pod, even more than the different shape, makes the proposal to treat *C. turgida* and *C. virosa* as conspecific quite impossible. Perhaps the confusion of *C. turgida* with *C. virosa* may have arisen from the fact that Wall. Cat. 5534 C, from Ava, is true *C. virosa*. A reference, however, to the Lithographed Catalogue itself shews that Dr. Wallich only doubtfully refers the Ava plant to Graham's species. Mr. Baker doubtfully refers *C. Stocksii* Dalz. & Gibs., Bomb. Fl. 69, to *C. turgida*; this is, in the writer's opinion, highly improbable because 1., *C. turgida* seems always strictly confined to sea-shores and to the banks of muddy estuaries and never has been collected inland; and 2., though it extends from the Salt-lakes near Calcutta and from the Sunderbuns at the top of the Bay of Bengal to the Indo-Chinese and Malayan Coasts generally, it has not yet been found anywhere on the coasts of India proper, of Ceylon, or of the Laccadives.

Though a characteristic sea-shore species, *C. turgida* is not conspecific with the *C. obtusifolia* of the coasts of India proper, which apparently does not occur in the Andamans, the Nicobars, or the Malay Peninsula—on the shores of the Andaman sea, though it does occur in Java (as pointed out by Prof. Miquel) to which island *C. turgida* also extends.



The writer has not seen fruiting specimens of a Japanese sea-coast species identified by Mr. Maximowicz and others with *C. obtusifolia* DC. (*C. lineata* DC.; *Dolichos lineatus* Thunbg.) but from a flowering specimens in Herb. Calcutta, it is apparently not specifically identical with the Indian *C. obtusifolia* figured by Dr. Cleghorn (*Madr. Lit. Soc. Journ.*, n. s., i, t. 4). On the other hand there is no apparent difference in flowers, leaves or habit, between the Japanese *Dolichos lineatus* and the Indo-Chinese and Malayan *Canavalia turgida*. If the fruits are also found to agree, and if *Dolichos lineatus* is the true *Canavalia obtusifolia*, *C. turgida* will have to be reduced to *C. obtusifolia*. If the fruits differ *C. turgida* undoubtedly deserves the specific rank assigned to it by Graham, Wallich and Miquel. The name "*C. obtusifolia*," it may be remarked, is as appropriate to the Indian seashore plant, as it is unsuitable to the Japanese littoral *C. lineata* and to the Indo-Chinese and Malayan littoral *C. turgida*.

10. VIGNA LUTEA A. Gray.  
 MUCUNA GIGANTEA DC.  
 DERRIS SCANDENS Benth.  
 DERRIS ULIGINOSA Benth.  
 PONGAMIA GLABRA Vent.
15. CÆSALPINIA BONDUCELLA Flem.  
 CYNOMETRA RAMIFLORA Linn.

#### RHIZOPHOREÆ.

- CERIOPS CANDOLLEANA Arn.  
 BRUGUIERA GYMNO RHIZA Lamk.

#### COMBRETACEÆ.

- TERMINALIA CATAPPA Linn.

#### MYRTACEÆ.

20. BARRINGTONIA SPECIOSA Forst.

#### RUBIACEÆ.

- HYDNOPHYTUM ANDAMANENSE Becc., *Malesia* ii, 156, t. 48, fig. 8—13.  
 WEBERA KURZII Hook. f.  
 GUETTARDA SPECIOSA Linn. f.  
 IXORA BRUNNESCENS Kurz.

Add to previous descriptions:—Flowers white, sweet smelling, corolla tube  $\frac{1}{2}$  in. long, teeth  $\frac{1}{2}$  in. long; berries creamy white with purple meridional elongated blotches.

25. MOBINDA CITRIFOLIA Linn., var. BRACTEATA Hook. f. (*M. bracteata* Roxb.)

## COMPOSITÆ.

WEDELIA SCANDENS C. B. Clarke.

## MYRSINEÆ.

ARDISIA HUMILIS Vahl. (*A. littoralis* Andr.).

## SAPOTACEÆ.

MIMUSOPS LITTORALIS Kurz.

Common here, as elsewhere in the Andamans and Nicobars, in the beach forest. Three or four lofty trees recently blown down yielded from among their topmost branches, the species n. 30, n. 31, n. 43, n. 44, n. 45, n. 46, n. 47, n. 53, n. 54, and n. 55 of this list.

## APOCYNEÆ.

OCHROSIA BORBONICA Gmel.

This species is much more frequent in the Andamans than *Cerbera Odollam*, and the fruits, especially when the outer skin is removed and only the stringy endocarp is seen, are not distinguishable from those of the latter species.

## ASCLEPIADACEÆ.

30. DISCHIDIA NUMMULARIA R. Br.

\* DISCHIDIA RAFFLESIANA Wall.

Not previously recorded from the Andamans. The ants present here in the ascidial leaves were not 'harmless' as Dr. Wallich found those at Singapur to be.

## BORAGINEÆ.

CORDIA SUBCORDATA Lamk.

Very common.

TOURNEFORTIA ARGENTEA Linn.

## CONVOLVULACEÆ.

IPOMÆA DENTICULATA Choisy.

35. IPOMÆA BILOBA Forst.

## VERBENACEÆ.

PREMNA INTEGRIFOLIA Linn.

CLEODENDRON INERME Gærtn.

## LAURINEÆ.

HERNANDIA PELTATA Linn.

Very common.

## SANTALACEÆ.

CHAMPEREIA GRIFFITHIANA Baill.

A very common tree in the coast-zone, 30—50 feet high.

## CASUARINEÆ.

40. CASUARINA EQUISETIFOLIA Forst.

One of the commonest trees in the coast-zone just within the *Pandanus* sea-fence. In Great Andaman this species only occurs in one spot, Casuarina Bay, on the west coast of North Andaman.

## CYCADACEÆ.

CYCAS RUMPHII Miq.

## HYDROCHARIDÆ.

\* HALOPHILA OVALIS R. Br.

Very common; this has not previously been met with on Andaman reefs.

## ORCHIDACEÆ.

\* DENDROBIUM SECUNDUM Lindl.

This occurs in South Andaman and in the Coco group also.

DENDROBIUM TENUICAULE Hook. f.

Also common at Port Blair in South Andaman.

45. DENDROBIUM ANCEPS Roxb.

\* DENDROBIUM TERMINALE Par. &amp; Reichb. f.

This is also common, along with the preceding, at Port Blair in South Andaman.

AERIDES MULTIFLORUM Roxb.

## AMARYLLIDACEÆ.

CRINUM ASIATICUM Linn.

## LILIACEÆ.

DRACENA ANGUSTIFOLIA Roxb.

## FLAGELLARIEÆ.

50. FLAGELLARIA INDICA Linn.

## PANDANACEÆ.

PANDANUS ODORATISSIMUS Linn. f.

## NAIADACEÆ.

CYMODOCEA CILIATA Ehrenb.

## FILICES.

- DAYALLIA SOLIDA Sw.  
 POLYPODIUM QUERCIFOLIUM Linn.  
 55. POLYPODIUM ADNASCENS Sw.  
 ACROSTICHUM SCANDENS J. Sm.

## ALGÆ.

- SARGASSUM ILICIFOLIUM Agardh.  
 TURBINARIA ORNATA Lamk.  
 HALIMEDA OPUNTIA Lamk.  
 60.\* HALIMEDA DISCOIDEA Dcne.  
 PADINA PAVONIA Gail.

## II. LIST OF THE PLANTS COLLECTED IN CAR NICOBAR AND BATTI MALV.

## ANONACEÆ.

- POPOWIA PARVIFOLIA Kurz.  
 Car Nicobar; Batti Malv.

## MENISPERMACEÆ.

- CYCLEA PELTATA H. f. & T.  
 Batti Malv.

## CAPPARIDEÆ.

- GYNANDROPSIS PENTAPHYLLA DC.  
 Car Nicobar; a weed round the huts of natives at Kimiós.  
 \* CAPPARIS AMBIGUA Kurz.  
 Batti Malv; a common unarmed climber; previously only known  
 from the Andaman group.

## GUTTIFERÆ.

5. CALOPHYLLUM INOPHYLLUM Linn.  
 Car Nicobar and Batti Malv.

## MALVACEÆ.

- SIDA ACUTA Burm.  
 Car Nicobar; a weed near Kimiós village.  
 URENA LOBATA Linn.  
 Car Nicobar; a weed near villages.  
 HIBISCUS TILICEUS Linn.  
 Car Nicobar and Batti Malv.  
 THESPESIA POPULNEA Linn.  
 Car Nicobar and Batti Malv.

## STERCULIACÆ.

10. STERCULIA RUBIGINOSA Vent., var. GLABRESCENS King. (*S. mollis* Kurz, not of Wallich.)

Car Nicobar and Batti Malv.

MELOCHIA VELUTINA Bedd.

Car Nicobar.

## RUTACEÆ.

GLYCOSMIS PENTAPHYLLA Corr.

Car Nicobar.

TRIPHASIA TRIFOLIOLATA DC.

Car Nicobar.

## AMPELIDEÆ.

VITIS PEDATA Vahl.

Batti Malv.

15. LEEA SAMBUCINA Willd.

Car Nicobar.

LEEa GRANDIFOLIA Kurz.

Batti Malv, very common.

## SAPINDACEÆ.

LEPIDOPETALUM JACKIANUM Radlk. (*Cupania Jackiana* Hiern.)

Car Nicobar, flowering specimens; Batti Malv; fruiting specimens. There is now no doubt that this species is correctly referred to *Lepidopetalum* by Prof. Radlkofer. The flower-buds are oval, pointed; the 4 green, lanceolate calyx-segments alternate with 4 extremely small, white cordate-acute petals attached to the face of each of which is a single large scale, connate by its margins with the edges of the corresponding petal and forming along with it a small, peltate-infundibuliform pouch; the stamens are 8 in number with glabrous, slender, short filaments and oblong, pilose anthers; the ovary is 2-celled; the fruit, reddish-brown externally, is bright scarlet within, usually the seed of one of the two cells is abortive; the ripe seeds are black, covered with a mucilaginous substance and embraced, as to their lower third, in a pink, cup-shaped, thick, fleshy arillus. It is one of the favourite fruits with *Calenas nicobarica* and the other frugivorous pigeons. Even if, with Bentham and Hooker, (*Gen. Plantar.* i, 399), generic rank is not accorded to *Lepidopetalum*, Hiern's location of the species in *Cupania* (*Flor. Brit. Ind.* i, 678) is not valid, since, as these authors show, *Lepidopetalum* is more nearly related to *Batonia*, as understood by them, than to *Cupania*.

ALLOPHYLUS COBBE Blume.

Batti Malv; the specimens agree exactly with authentic specimens of *A. littoralis* Blume.

ERIOGLOSSUM EDULE Blume.

Batti Malv.

#### ANACARDIACEÆ.

20. SEMECARPUS HETEROPHYLLA Blume.

Batti Malv.

#### CONNARACEÆ.

\* CONNARUS sp.

Batti Malv; the specimens are in leaf only, but agree well with specimens of an undescribed *Connarus* from the Nicobars about to be published by Dr. G. King in the *Annals of the Roy. Bot. Garden, Calcutta.*

#### LEGUMINOSÆ.

DESMODIUM UMBELLATUM DC.

Batti Malv.

ABRUS PRECATORIUS Linn.

Car Nicobar and Batti Malv.

ERYTHRINA INDICA Lamk.

Car Nicobar.

25. CANAVALIA TURGIDA Grah.

Batti Malv.

DERRIS SCANDENS Bth.

Batti Malv.

DERRIS ULIGINOSA Bth.

Batti Malv.

SOPHORA TOMENTOSA Linn.

Car Nicobar.

CESALPINIA BONDUCELLA Flem. (*C. Bonduc* Kurz, not of Linn.)

Batti Malv.

30. CASSIA OCCIDENTALIS Linn.

Car Nicobar, a weed near Kimiós village.

#### COMBRETACEÆ.

TERMINALIA CATAPPA Lamk.

Car Nicobar, Batti Malv.

GYROCARPUS JACQUINII Roxb.

Batti Malv.

## MYRTACEÆ.

BARRINGTONIA SPECIOSA Forst.  
Batti Malv.

## MELASTOMACEÆ.

MEMECYLON EDULE Roxb. var. ?—  
Batti Malv.

## CUCURBITACEÆ.

35. \* TRICHOSANTHES PALMATA Roxb.  
Car Nicobar, Batti Malv.  
\* MUKIA SCABRELLA Arn.  
Batti Malv.

## CORNACEÆ.

ALANGIUM SUNDANUM Miq.  
Batti Malv, a very common large climber.

## RUBIACEÆ.

- \* OLDENLANDIA CORYMBOSA Linn., var.—  
Batti Malv, on the bare limestone rocks between the sea and the *Pandanus* fence. The specimens are exactly like those of *Hedyotis alsinæfolia* R. Br. in Wall. Cat. n. 873.  
WEBERA KUEZII Hook. f.  
Car Nicobar.
40. OPHIORHIZA MUNGOS Linn.  
Car Nicobar.  
GUETTARDA SPECIOSA Linn.  
Batti Malv.  
IXORA BRUNNESCENS Kurz.  
Car Nicobar, Batti Malv.  
IXORA CUNEIFOLIA Roxb.  
Car Nicobar.  
IXORA CUNEIFOLIA Roxb., var. MACROCARPA Kurz.  
Batti Malv.
45. MORINDA CITRIFOLIA Linn., var. BRACTEATA Hook. f. (*M bracteata* Roxb.)  
Car Nicobar, Batti Malv.  
MUSSENDA MACROPHYLLA Wall.  
Car Nicobar.  
PÆDERIA FETIDA Linn.  
Batti Malv.

## COMPOSITÆ.

WEDELIA SCANDENS C.B. Clarke.

Car Nicobar, Batti Malv.

## GOODENOVIÆ.

SCÆVOLA KÆNIGH Vahl.

Batti Malv.

## MYRSINÆ.

50. ARDISIA HUMILIS Vahl. (
- A. littoralis*
- Andr.)

Car Nicobar, Batti Malv.

## SAPOTACEÆ.

MIMUSOPS LITTORALIS Kurz.

Car Nicobar, Batti Malv.

## EBENACEÆ.

DIOSPYROS KURZII Heirn.

Batti Malv.

## APOCYNÆ.

OCHROSIA BORBONICA Gmel.

Car Nicobar.

TABERNÆMONTANA CRISPA Roxb.

Car Nicobar, Batti Malv.

55. PARSONSIA SPIRALIS R. Br.

Car Nicobar.

## ASOLEPIADACEÆ.

DISCHIDIA GRIFFITHII Hook. f. ? (*D. bengalensis* Kurz, not of Colebr.)

Car Nicobar. There are no authentic examples of *D. Griffithii* at Calcutta, with which to compare the plant obtained by the writer in Car Nicobar, and by Mr. Jelinek in Kamorta and Katschall. There are specimens of Novara n. 115 at Calcutta, and an examination of these shows that they are precisely the same as the present Car Nicobar plant and that they have been erroneously referred by Mr. Kurz to *D. bengalensis*. The Nicobars plant has a hirsute corolla throat, the corolla-throat in *D. bengalensis* is glabrous.

## LOGANIACEÆ.

STRECHNOS ACUMINATA Wall.

Batti Malv.



## BORAGINEÆ.

CORDIA SUBCORDATA Lamk.

Batti Malv.

TOURNEFORTIA ARGENTEA Linn.

Car Nicobar.

## CONVOLVULACEÆ.

60. IPOMŒA DENTICULATA Choisy.

Car Nicobar, Batti Malv.

IPOMŒA CYMOSA Roem. & Schult.

Car Nicobar.

IPOMŒA BILOBA Forsk.

Car Nicobar, Batti Malv.

CONVOLVULUS PARVIFLORUS Vahl.

Batti Malv.

## SOLANACEÆ.

\* SOLANUM MELONGENA Linn.

Car Nicobar; near huts of natives at Kimiós.

65. \* DATURA FASTUOSA Linn.

Batti Malv; interesting as an addition to the Nicobar Flora and as proving from its presence in this island that human agency is not always necessary to account for the dispersal of the species.

## ACANTHACEÆ.

ERANTHEMUM CINNABARINUM Nees, *var.* SUCCISIFOLIUM Clarke. (*E succifolium* Kurz).

Car Nicobar, Batti Malv.

PERISTROPHE ACUMINATA Nees.

Car Nicobar.

## VERBENACEÆ.

PREMNA INTEGRIFOLIA Linn.

Batti Malv.

CLERODENDRON INERME Gaertn.

Car Nicobar, Batti Malv.

70. CLERODENDRON PANICULATUM Linn.

Car Nicobar.

CALLICARPA LONGIFOLIA Lamk.

Car Nicobar.

## LABIATÆ.

## \* OCIMUM BASILICUM Linn.

Car Nicobar ; a weed near Kimiós village.

The dispersal of the species of this genus—the *Tulsi* plants—is somewhat curious. In Kamorta, Katschall and Nancowry, where Hindu convicts have been stationed, it is the true or sacred *Tulsi* [*O. sanctum*] that has become naturalised. Here, where no Hindus have lived, it is *O. Basilicum* that is grown by the natives, to whom one *Tulsi* is as good as another. In the Laccadives, where the people are Mussalmans, and to whom the sacred *Tulsi* does not specially appeal, it is the *Ram Tulsi* (*O. gratissimum*) that occurs.

## NYCTAGINEÆ.

## BOERHAAVIA REPENS Linn.

Batti Malv, on the rocks outside the *Pandanus* sea-fence.

## \* PISONIA ACULEATA Linn.

Batti Malv.

## 75. \* PISONIA ALBA Spanoghe.

Batti Malv.

## \* PISONIA EXCELSA Blume.

Batti Malv.

## AMARANTACEÆ.

## \* AMARANTUS SPINOSUS Linn.

Car Nicobar, near Kimiós village.

## \* ACHYRANTHES ASPERA Linn.

Car Nicobar, a weed near Kimiós village. Only the sea-shore variety, (*A. porphyristachya* Wall.), has hitherto been known to occur in the Nicobars ; this was obtained by Mr. Jelinek of the "*Novara*."

## ÆRUA LANATA Juss.

Car Nicobar, Batti Malv.

## LAURINEÆ.

## 80. HERNANDIA PELTATA Linn.

Car Nicobar.

## ARISTOLOCHIACEÆ.

## \* ARISTOLOCHIA TAGALA Cham. &amp; Schlecht.

Batti Malv.

## EUPHORBIACEÆ.

## EUPHOBIA ATOTO Linn.

Car Nicobar.

GLOCHIDION CALOCARPUM Kurz.

Car Nicobar.

FLUEGGEA MICROCARPA Blume.

Car Nicobar, Batti Malv.

85. BREYNIA OBLONGIFOLIA Muell.-Arg.

Car Nicobar.

BRIDELIA TOMENTOSA Blume.

Car Nicobar.

ALCHORNEA RUGOSA Muell.-Arg.

Car Nicobar. The specimens agree exactly with authentic examples of *A. javensis* Muell.-Arg.

CLAOXYLON LONGIFOLIUM Muell.-Arg.

Car Nicobar.

CLAOXYLON MOLLE Endl.

Batti Malv.

90. \* GELONIUM ? sp.

Batti Malv. The specimens are without fruit and perhaps do not belong to this genus. They differ from anything hitherto reported from the Nicobars.

URTICACEÆ.

PIPTURUS VELUTINUS Wedd.

Car Nicobar.

FIGUS HISPIDA Linn., var. DÆMONUM Kœnig.

Car Nicobar, Batti Malv.

FIGUS RUMPHII Vahl.

Batti Malv.

CYCADACEÆ.

CYCAS RUMPHII Miq.

Car Nicobar, Batti Malv.

PALMEÆ.

95. COCOS NUCIFERA Linn.

Car Nicobar, Batti Malv.

ARECA CATECHU Linn.

Car Nicobar.

PANDANACEÆ.

PANDANUS ODORATISSIMUS Linn. f.

Car Nicobar, Batti Malv.

## LILIACEÆ.

DRACENA ANGUSTIFOLIA Roxb.  
Car Nicobar, Batti Malv.

## AMARAYLLIDACEÆ.

CRINUM ASIATICUM Linn.  
Batti Malv.

## FLAGELLARIÆ.

100. FLAGELLARIA INDICA Linn.  
Batti Malv.

## ORCHIDACEÆ.

SARCANTHUS ? sp.  
Batti Malv. The specimen is in fruit only.  
EULOPHIA DECIPIENS Kurz.  
Car Nicobar.

## NAIADACEÆ.

CYMODOCEA CILIATA Ehrenb.  
Car Nicobar.

## CYPERACEÆ.

CYPERUS PENNATUS Lamk.  
Batti Malv.  
105. FIMBRISTYLIS DIPHYLLA Vahl.  
Batti Malv, on rocks between the sea and the *Pandanus* belt.

## GRAMINEÆ.

PANICUM FILIPES Nees.  
Car Nicobar.  
ISCHÆMUM MUTICUM Retz.  
Car Nicobar, Batti Malv.  
ERAGROTIS PLUMOSA Linn.  
Car Nicobar.

## FILICES.

POLYPODIUM QUERCIFOLIUM Linn.  
Car Nicobar, Batti Malv.  
110. POLYPODIUM ADNASCENS Swartz.  
Car Nicobar, Batti Malv.  
POLYPODIUM PHYMATODES Linn.

Car Nicobar.

LYGODIUM FLEXUOSUM Swartz.

Car Nicobar.

#### ALGÆ.

SARGASSUM ILICIFOLIUM Agardh was the only seaweed seen on Batti Malv. About a dozen seaweeds were obtained on Car Nicobar; they have not yet been determined.

5. *Notes on some native Ephemeridae in the Indian Museum*,—By REV. A. E. EATON, M. A. Communicated by the SUPERINTENDENT, INDIAN MUSEUM.

6. *Catalogue of the Diptera of the Oriental Region, Part III*,—By MONS. J. M. F. BIGOT. Communicated by the SUPERINTENDENT, INDIAN MUSEUM.

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



#### LIBRARY.

The following additions have been made to the Library since the meeting held in November last.

#### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Notulen, Deel XXIX, Aflevering 2.

———. Tijdschrift voor Indische Taal-, Land-en Volkenkunde, Deel XXXIV, Aflevering 6.

Calcutta. Indian Engineering,—Vol. X, Nos. 20-23.

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Colombo. Ceylon Branch, Royal Asiatic Society,—Journal, 1889.

Edinburgh. Royal Society of Edinburgh,—Proceedings, Vol. XVII.

———. Transactions, Vols. XXXIV; and XXXVI, Part I.

Leipzig. Der Deutschen Morgenländischen Gesellschaft,—Zeitschrift, Band XLV, Heft 3.

London. Geological Society,—Quarterly Journal, Vol. XLVII, Part 4.

———. List of Fellows, November 2nd, 1891.

———. Institution of Mechanical Engineers,—Proceedings, No. 2, 1891.

- London. *Nature*,—Vols. XLIV, Nos. 1147-48; XLV, 1149.  
 ———. Royal Geographical Society,—Proceedings, Vol. XIII, No. 9.  
 ———. Royal Microscopical Society,—Journal, Part 4, 1891.  
 ———. Royal Society,—Proceedings, Vol. L, No. 2.  
 ———. ———. Philosophical Transactions, Vol. CLXXXI (A and B).  
 ———. ———. List of Fellows, 1st December, 1890.  
 ———. The Academy,—Nos. 1016-18.  
 ———. The Athenæum,—Nos. 3339-41.
- Mendon, Ill. *American Antiquarian and Oriental Journal*,—Vol. XIII, No. 5.
- Mussoorie. *The Indian Forester*,—Vol. XVII, No. 10.
- Paris. *La Société Zoologique de France*,—Bulletin, Tome XVI, No. 7.
- Prague. *Der K. K. Sternwarte zu Prag*,—Magnetische und Meteorologische Beobachtungen, 1890.
- Rome. *La Società Degli Spettroscopisti Italiani*,—Memorie, Vol. XX, No. 9.
- Vienna. *Der K. K. Geologischen Reichsanstalt*,—Verhandlungen, 8-13, 1891.  
 ———. *Des K. K. Naturhistorischen Hofmuseums*,—Annalen, Band VI, No. 2.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- EDGEEN, A. H. *En Blick På Hennes Uppkomst Och Ordnande med anledning af högskolans högtidliga öppnande tisdagen den, 15 September 1891.* 8vo. Gothenburg, 1891.
- . *On the Propriety of Retaining the Eighth Verb-class in Sanskrit.* 8vo.
- MITRA, SARAT CHANDRA. *The Uses and Advantages of an Insectarium.* 8vo.
- NIGAM, GIRIJA DAYAL. *The Pilgrim Route to Shri Badri Nath and Kedar Nath in Garhwal District.* 8vo. Lucknow, 1891.
- SARMA, PANDIT BHIMA SEN. *Manavadharma Sástra*, Vol. I, Part 7. 8vo. Allahabad, 1891.

### MISCELLANEOUS PRESENTATIONS.

- DAGH-Register gehonden int Easteel Batavia vant passerende daer ter plaetse als over geheel Nederlandts.-India anno 1663, van Mr. J. A. Van der Chijs. 4to. Batavia, 1891.
- Nederlandsch-Indisch Plakaatboek, 1602—1811, door Mr. J. A. Van der Chijs. Deel IX. 8vo. Batavia, 1891.
- BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN.

- Catalogue of the Birds in the British Museum, Vol. XIX. 8vo. London, 1891.
- Catalogue of the Fossil Birds in the British Museum. 8vo. London, 1891.
- Illustrations of Typical Specimens of Lepidoptera Heterocera in the collection of the British Museum, Part VIII. 4to. London, 1891.
- Systematic List of the Frederick E. Edward's collection of British Oligocene and Eocene Mollusca in the British Museum. 8vo. London, 1891.

## BRITISH MUSEUM, LONDON.

Report on the Nagpur Experimental Farm in the Central Provinces for the year 1890-91.

## CHIEF COMMISSIONER, CENTRAL PROVINCES.

Suggestions for Building a Cool Dairy (Bulletin, Department of Agriculture, Brisbane, No. 11). 8vo. Brisbane, 1891.

## DEPARTMENT OF AGRICULTURE, BRISBANE.

Annual Statistical Returns and Brief Notes on Vaccination in Bengal for the year 1890-91. Fcp. Calcutta, 1891.

Notes on the Administration of the Registration Department in Bengal for the year 1890-91. Fcp. Calcutta, 1891.

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LIST OF MEMBERS  
OF THE  
ASIATIC SOCIETY OF BENGAL.  
ON THE 31ST DECEMBER 1890.

LIST OF OFFICE-BEARERS AND MEMBERS OF  
COUNCIL FOR THE YEAR 1890.

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*Vice-Presidents.*

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Rájá Rájendralála Mitra, C. I. E., LL. D.

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*Other Members of Council.*

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Pandit Haraprasád Shástri, M. A.

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Hon. Sir A. W. Croft, K. C. I. E., M. A.

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## LIST OF ORDINARY MEMBERS.

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R. = Resident. N. R. = Non-Resident. A. = Absent. N. S = Non-Subscribing  
L. M. = Life Member. F. M. = Foreign Member.

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N. B.—Members who have changed their residence since the list was drawn up are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alteration may be made in the subsequent edition. Errors or omissions in the following list should also be communicated to the *Secretaries*.

Members who are about to leave India and do not intend to return are particularly requested to notify to the *Secretaries* whether it is their desire to continue Members of the Society; otherwise, in accordance with Rule 40 of the *Bye-Laws*, their names will be removed from the list at the expiration of three years from the time of their leaving India.

| Date of Election. |      |  |
|-------------------|------|--|
| 1860 Dec. 5.      | R.   | Abdul-Latif, Nawáb Bahádur, C. I. E. <i>Calcutta</i> .   |
| 1888 Feb. 1.      | N.R. | Adamson, Major Charles Henry Ellison, M. S. C.,<br>Deputy Commissioner. <i>Rangoon</i> .                             |
| 1889 Nov. 6.      | R.   | Adie, J. R., M. B., Surgeon, Eden Hospital. <i>Calcutta</i> .  |
| 1860 July 4.      | N.R. | Ahmad Khán, Bahádur, Hon. Maulvi Sir Sayid,<br>K. C. S. I. <i>Aligarh</i> .  |
| 1888 April 4.     | R.   | Ahmud, Maulvi, Khán Bahádur, Arabic Professor,<br>Presidency College. <i>Calcutta</i> .                              |
| 1872 April 3.     | N.R. | Ashán-ullah, Khán Bahádur, Nawáb. <i>Dacca</i> .   |
| 1888 Feb. 1.      | N.R. | Alcock, Alfred William, M. B., Surgeon Naturalist,<br>Marine Survey Department.                                      |
| 1884 Mar. 5.      | L.M. | Ali, Sir Ali Qadr Syud Hassan, Nawáb Bahádur,<br>K. C. I. E. <i>Murshedabad</i> .                                    |
| 1874 June 3.      | R.   | Amír Ali, Hon. C. I. E., M. A. Barrister-at-Law,<br>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> .  |
| 1887 June 1.      | R.   | Apjohn, J. H., M. I. C. E., P. W. Dept. <i>Calcutta</i> .  |
| 1890 July 2.      | N.R. | Arnold, Thomas Walker, B. A., M. R. A. S., Pro-<br>fessor, Muhammadan Anglo-Oriental College.<br><i>Aligarh</i> .    |
| 1869 Feb. 3.      | N.R. | Attar Singh, Bahádur, Mahámahopádhyaýa Sirdár,<br>Sir, K., C. I. E., M. U. F., Chief of Bhadour.<br><i>Ludiana</i> . |
| 1889 Aug. 29.     | N.R. | Aziz-ud-din Ahmad, Deputy Collector and Magis-<br>trate. <i>Jaunpur</i> .  |

| Date of Election. |      |   |
|-------------------|------|---|
| 1870 Feb. 2.      | L.M. | Baden-Powell, Baden Henry, C. I. E., C. S. <i>Europe.</i>   |
| 1865 Nov. 7.      | N.S. | Ball, Valentine, M. A., F. R. S., F. G. S. <i>Europe.</i>   |
| 1889 May 1.       | R.   | Banerji, Hon. Dr. Gurudás, M. A., D. L., Judge, High Court. <i>Calcutta.</i>  |
| 1862 Aug. 1.      | N.R. | Barclay, Arthur, M. B., Surgeon Major, Sec. to Surgeon General and Sanitary Commissioner with the Govt. of India. <i>Simla.</i> |
| 1869 Dec. 1.      | L.M. | Barker, R. A., M. D., Civil Surgeon. <i>Serampore.</i>  |
| 1877 Jan. 17.     | N.R. | Barman, Kishor Kumár Rádhá Dev, Juvráj of Hill Tipperah. <i>Tipperah.</i>   |
| 1885 Nov. 4.      | R.   | Barman, Dámudar Dás. <i>Calcutta.</i>   |
| 1887 Aug. 3.      | R.   | Basu, Haricharan. <i>Calcutta.</i>  |
| 1886 June 2.      | F.M. | Baumgarten, Casper Wilhelm. <i>Batavia.</i>   |
| 1864 Sept. 7.     | N.R. | Beames, John, C. S., Commissioner, Bhaugulpore Division.  |
| 1878 Sept. 25.    | N.R. | Beighton, T. D., C. S., Judge. <i>Dacca.</i>  |
| 1876 Nov. 15.     | R.   | Beveridge, Henry, C. S., District and Sessions Judge. <i>Alipur.</i>  |
| 1878 Oct. 4.      | R.   | Bhakta, Krishna Gopál. <i>Calcutta.</i>   |
| 1879 Mar. 5.      | N.R. | Biddulph, Col. J., B. S. C. <i>Ajmere.</i>  |
| 1884 Jan. 2.      | A.   | Bidie, G., Surgeon-General C. I. E., F. L. S., M. B., <i>Europe.</i>  |
| 1884 Feb. 6.      | N.R. | Bigg-Wither, Major A. C, B. A., A. I. C. E. <i>Quetta.</i>  |
| 1885 Mar. 4.      | N.R. | Bilgrámi, Syud Ali, B. A., A. R. S. M., F. G. S. <i>Hyderabad.</i>  |
| 1886 Aug. 4.      | N.R. | Bingham, Major Charles Thomas, B. S. C., Deputy Conservator of Forests. <i>Burma.</i>   |
| 1857 Mar. 4.      | L.M. | Blanford, H. F., A. R. S. M., F. R. S., F. G. S. <i>England.</i>  |
| 1859 Aug. 3.      | L.M. | Blanford, W. T., A. R. S. M., F. R. S., F. G. S., F. E. G. S., F. Z. S. <i>London.</i>  |
| 1885 Mar. 4.      | R.   | Bolton, C. W., C. S., 24- <i>Pergunnahs.</i>  |
| 1890 July 2.      | R.   | Bonnerjee, Womes Chunder, Barrister, Middle Temple. <i>Calcutta.</i>  |
| 1880 Nov. 3.      | N.R. | Bose, Pramatha Náth, B. SC., F. G. S., Geological Survey of India.  |
| 1890 Dec. 3.      | N.R. | Bose, Rai Nali Naksha, Bahádur, Chairman Burdwan Municipality. <i>Burdwan.</i>  |
| 1876 Nov. 15.     | N.R. | Bowie, Colonel, M. M. Inspector General of Police C. P. <i>Nagpur.</i>  |
| 1868 Jan. 15.     | N.R. | Boxwell, John, C. S., Commissioner, Patna Division.   |
| 1876 May 4.       | N.R. | Bradshaw, Deputy Surgeon-General A. F., Honorary Surgeon to the Viceroy, M. D. <i>Rawal Pindi.</i>                              |
| 1890 Dec. 3.      | R.   | Brame, Captain A. <i>Calcutta.</i>  |
| 1860 Mar. 7.      | L.M. | Brandis, Sir Dietrich, K. C. I. E., C. I. E., PH. D., F. L. S., F. R. S. <i>Europe.</i>   |

| Date of Election. |      |   |
|-------------------|------|---|
| 1887 May 4.       | R.   | Burál, Nobinchánd, Solicitor. <i>Calcutta.</i>  |
| 1862 Feb. 5.      | L.M. | Bysack, Gaurdás. <i>Calcutta.</i>   |
| 1879 April 2.     | R.   | Calcutta, The Rt. Rev. the Lord Bishop of. <i>Calcutta.</i>   |
| 1830 Mar. 3.      | A.   | Carlleyle, A. C., Archæological Survey of India. <i>Europe.</i>   |
| 1881 Feb. 2.      | N.R. | Carter, Philip John, Deputy Conservator of Forests. <i>Burmah.</i>                                      |
| 1890 June 4.      | N.R. | Chakravartí, Man Mohan, M. A., B. L., Deputy Magistrate. <i>Puri.</i>                                   |
| 1889 April 3.     | R.   | Chandra, Goneschandra, Solicitor. <i>Calcutta.</i>  |
| 1881 Mar. 2.      | N.R. | Channing, Francis Chorley, c. s. <i>Hoshiarpur.</i>   |
| 1880 Jan. 7.      | R.   | Chaudhuri, Govinda Kumár. <i>Calcutta.</i>  |
| 1861 Mar. 1.      | N.R. | Chaudhuri, Harachandra, Zemindar. <i>Sherpur Mymensingh.</i>  |
| 1880 Nov. 3.      | N.R. | Chaudhuri, Rái Khirod Chandra. Deputy Inspector of Schools, Sonthal Pergunnahs. <i>Dumka.</i>           |
| 1886 April 7.     | N.R. | Chaudhuri, Rádhaballabha. <i>Sherpur, Mymensingh.</i>   |
| 1885 Feb. 4.      | N.R. | Chaudhuri, Rájá Suryakánta, Bahádur. <i>Mymensingh.</i>   |
| 1890 Feb. 5.      | A.   | Chuckerbutty, A. Goodeve, B. C. S. <i>Europe.</i>   |
| 1889 Sept. 26.    | N.R. | Chuckerbutty, Rájá Ramranjan, Bahádur. <i>Hitampur, Beerbhoom.</i>                                      |
| 1885 April 1.     | N.R. | Clark, H. Martyn, M. B. <i>Amritsar.</i>  |
| 1877 Aug. 30.     | R.   | Clarke, Lieut.-Col. Henry Wilberforce, R. E. <i>Calcutta.</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>Karwi, Banda, N.-W. P.</i>                             |
| 1888 Nov. 1.      | N.R. | Collett, Brigadier General, Henry, C. B., F. L. S. <i>Shillong, Assam.</i>                              |
| 1889 Nov. 6.      | R.   | Colville, William Brown. <i>Calcutta.</i>   |
| 1886 Aug. 26.     | F.M. | Condanhove, Count H., Attaché Austro-Hungarian Legation. <i>Constantinople.</i>                         |
| 1890 Dec. 3.      | R.   | Connan, William, C. E., Public Works Department. <i>Calcutta.</i>                                       |
| 1874 Nov. 4.      | F.M. | Constable, Archibald, M. I. C. E. <i>England.</i>   |
| 1884 Aug. 6.      | R.   | Cotes, Everard Charles, Indian Museum. <i>Calcutta.</i>   |
| 1876 Mar. 1.      | R.   | Crawfurd, James, B. A., C. S., Barrister-at-Law, Offg. District and Sessions Judge. <i>Hughli.</i>      |
| 1887 Aug. 25.     | R.   | Criper, William Risdon, F. C. S., F. I. C., A. R. S. M. <i>Kasipur.</i>                                 |
| 1877 June 6.      | R.   | Croft, The Hon. Sir A. W., K. C. I. E., M. A., Director of Public Instruction, Bengal. <i>Calcutta.</i> |
| 1874 Mar. 4.      | R.   | Crombie, Alexander, M. D., Surgeon Major, Presidency General Hospital. <i>Calcutta.</i>                 |
| 1888 Dec. 5.      | N.R. | Crooke, William, B. A., C. S., Magistrate and Collector. <i>Mirzapur.</i>                               |

| Date of Election. |      |   |
|-------------------|------|---|
| 1873 Aug. 6.      | R.   | Cunningham, David Douglas, Surgeon-Major. Honorary Surgeon to the Viceroy. <i>Calcutta.</i>                 |
| 1873 Dec. 3.      | N.R. | Dames, Mansel Longworth, c. s., Asst. Commissioner. <i>Dera Ghazi Khan.</i>                                 |
| 1877 June 6.      | N.R. | Darbhangha, Sir Luchmessur Sing, Bahádur, K. C. I. E., Mahárajá of. <i>Darbhangha.</i>                      |
| 1865 June 7.      | N.R. | Dás, Rájá Jaykrishna, Bahádur, c. s. I. <i>Bijnor.</i>  |
| 1879 April 7.     | N.R. | Dás, Rám Saran, M. A., Secy., Oudh Commercial Bank, Limited. <i>Fyzabad, Oudh.</i>                          |
| 1885 May 6.       | N.R. | Dé, Rájá Baikuntánáth, Bahádur. <i>Balasore.</i>  |
| 1889 May 1.       | N.R. | Delawar Hosaen Ahmed, Meerza. <i>Gya.</i>   |
| 1862 May 7.       | N.R. | Dhanapati Singh Dughar, Rai Bahádur. <i>Azimganj.</i>   |
| 1877 July 4.      | R.   | Diler Jang, Nawáb Syad Ashgar Ali, Khán Bahádur, c. s. I. <i>Calcutta.</i>                                  |
| 1890 July 2.      | R.   | Donaldson, P. <i>Calcutta.</i>  |
| 1886 June 2.      | R.   | Doyle, Patrick, C. E., F. G. S., M. R. A. S. <i>Calcutta.</i>   |
| 1887 Nov. 2.      | N.R. | Driver, Walter Henry Parker. <i>Ranchi, Lohardugga.</i>   |
| 1889 Jan. 2.      | N.R. | Dudgeon, Gerald Cecil, Lebong Tea Company. <i>Darjeeling.</i>   |
| 1879 Feb. 5.      | N.R. | Duthie, J. F., Director, Government Botanical Survey, Northern India. <i>Saharanpur.</i>                    |
| 1877 Aug. 30.     | N.R. | Dutt, Kedarnáth, Depy. Collector. <i>Cuttack.</i>   |
| 1890 Sept. 25.    | N.R. | Dutt, Romesh Chunder, B. C. S., Barrister at-Law, Middle Temple, Magistrate and Collector. <i>Dinajpur.</i> |
| 1870 Mar. 9.      | L.M. | Edinburgh, H. R. H. The Duke of. <i>Europe.</i>   |
| 1871 Dec. 2.      | N.R. | Eliot, J., M. A., Meteorological Reporter to the Govt. of India. <i>Simla.</i>                              |
| 1886 Jan. 6.      | R.   | Elson, Samuel R. Bengal Pilot Service. <i>Calcutta.</i>   |
| 1876 Jan. 5.      | F.M. | Feistmantel, Ottokar, M. D. <i>Europe.</i>  |
| 1879 July 2.      | R.   | Finucane, M. C. S., Director of Agriculture, Bengal. <i>Calcutta.</i>                                       |
| 1869 Sept. 1.     | A.   | Fisher, John Hadden, C. S. <i>Europe.</i>   |
| 1886 April 7.     | N.R. | Fleet, John Faithfull, C. I. E., C. S. <i>Bijapur, Bombay.</i>  |
| 1876 July 5.      | N.R. | Foulkes, The Rev. Thos., F. L. S., M. R. A. S., F. R. G. S. <i>Salem, Madras Presidency.</i>                |
| 1880 April 7.     | N.R. | Gajapati, Ananda Rám, K. C. I. E., Rájá of Vizianagram. <i>Vizianagram.</i>                                 |
| 1873 Dec. 3.      | N.R. | Gamble, J. S., M. A., Conservator of Forests. <i>Dehra Dún.</i>   |
| 1859 Aug. 3.      | LM.  | Gastrell, General James Eardley. <i>Europe.</i>   |
| 1867 Dec. 4.      | A.   | Gay, E., M. A., F. R. A. S. <i>Europe.</i>  |
| 1889 Jan. 2.      | R.   | Ghose, Jogendrachandra, M. A., B. L. <i>Calcutta.</i>   |
| 1883 Aug. 30.     | R.   | Ghose, Manmohan. <i>Calcutta.</i>   |

| Date of Election. |      |  |
|-------------------|------|--|
| 1889 Mar. 6.      | R.   | Ghosha, Bhupendra Sri. <i>Calcutta.</i>  |
| 1869 Feb. 3.      | R.   | Ghosha, Pratápchandra, B. A. <i>Calcutta.</i>  |
| 1884 Dec. 3.      | N.R. | Giles, George, M. J., M. B., F. R. C. S., Civil Medical Officer, Lawrence Military Asylum. <i>Sanawar.</i>   |
| 1886 Sept. 30.    | N.R. | Gimlette, George Hart Desmond, Surgeon, Bengal Medical Service, M. D., M. CH., M. R. C. S., L. S. A. Goona Political Agency. <i>Central India.</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, S. J., The Most Rev. Dr. Paul, Archbishop of Calcutta.   |
| 1882 May 3.       | R.   | Golám Sarwar, Maulavi. <i>Calcutta.</i>  |
| 1881 Mar. 2.      | R.   | Gosáin, Hem Chunder. <i>Calcutta.</i>  |
| 1876 Nov. 15.     | N.R. | Grierson, George Abraham, C. S. <i>Gya.</i>  |
| 1885 Dec. 2.      | N.R. | Griesbach, C. L., C. I. E., F. G. S., Deputy Superintendent, Geological Survey of India.   |
| 1861 Feb. 6.      | N.R. | Growse, Frederick Salmon, C. I. E., M. A., C. S., Magistrate and Collector. <i>Farukhabad, N.-W. P.</i>  |
| 1886 Mar. 3.      | N.R. | Gupta, Asutosh, C. S., Assistant Magistrate and Collector. <i>Mymensing.</i>   |
| 1888 July 4.      | R.   | Gupta, Rajanikánta. <i>Calcutta.</i>   |
| 1889 June 5.      | F.M. | Hamilton, Rev. Walter A., Chaplain, Bengal Establishment. <i>Europe.</i>   |
| 1883 Jan. 3.      | A.   | Harding, Francis Henry, B. A., C. S. <i>Europe.</i>  |
| 1890 June 4.      | R.   | Heilgers, Robert Philip, Consul for H. I. M. the Emperor of Austria and Hungary, Knight of the Imperial Order of the Iron Crown, Commandeur Ordre Impériale de Medjidié, F. R. G. S., F. R. S. S. <i>Calcutta.</i> |
| 1875 Mar. 3.      | N.R. | Hendley, Surgeon Major Thomas Holbein, C. I. E. <i>Jeyapore.</i>   |
| 1890 April 2.     | R.   | Hickson, F. G. <i>Calcutta.</i>  |
| 1872 Dec. 5.      | A.   | Hoernle, A. F. R., PH. D., Principal of the Calcutta Madrasa. <i>Europe.</i>   |
| 1878 Mar. 6.      | N.R. | Hoey, W., C. S. <i>Banda.</i>  |
| 1886 June 2.      | A.   | Hogg, Alexander. <i>Europe.</i>  |
| 1884 Mar. 5.      | N.R. | Hooper, John, C. S., Settlement Officer. <i>Basti, N.-W. P.</i>  |
| 1873 Jan. 2.      | L.M. | Houstoun, G. L., F. G. S. <i>Europe.</i>   |
| 1863 Jan. 15.     | N.R. | Howell, Mortimer Sloper, C. S., C. I. E. <i>Shahjahanpur.</i>  |
| 1878 Sept. 25.    | N.R. | Hughes, G., C. S., Deputy Commissioner. <i>Ludhiana.</i>   |
| 1867 Aug. 7.      | N.R. | Hughes, T. W. H., A. B. S. M., F. G. S., Superintendent, Geological Survey of India.   |
| 1870 Jan. 5.      | N.R. | Hume, Allan Octavian, C. B., C. S. <i>Simla.</i>   |
| 1884 May 2.       | N.R. | Hussein, Syud, B. A., Secy. to Nizam of Hyderabad's Council. <i>Hyderabad.</i>   |
| 1890 Dec. 3.      | R.   | Hyde, Rev. Henry Barry, M. A., Bengal Ecclesiastical Establishment. <i>Calcutta.</i>   |

| Date of Election. |          |      |   |
|-------------------|----------|------|---|
| 1872              | Dec. 4.  | N.R. | Ibbetson, Denzil Charles Jelf, c. s. Deputy Commissioner. <i>Gujranwala, Panjab.</i>  |
| 1866              | Mar. 7.  | F.M. | Irvine, William c. s. <i>Europe.</i>  |
| 1884              | May 2.   | N.R. | Iskander Ali Mirza, Prince. <i>Murshedabad.</i>   |
| 1880              | Dec. 1.  | A.   | Jackson, William Grierson, c. s. <i>Europe.</i>   |
| 1869              | Aug. 4.  | R.   | Jahán Qadr Muhammad Wahid Ali, Bahádur, Prince. <i>Garden Reach, Calcutta.</i>  |
| 1879              | Mar. 5.  | R.   | Jarrett, Lt.-Col. H. S., B. S. C., Secy. to the Board of Examiners. <i>Calcutta.</i>  |
| 1881              | Feb. 2.  | N.R. | Jenkins, Major Thomas Morris, M. S. C. Deputy Commissioner. <i>Tatoy.</i>   |
| 1889              | Mar. 6.  | R.   | Jobbins, William Henry, Principal, Government School of Art. <i>Calcutta.</i>   |
| 1873              | Dec. 3.  | N.R. | Johore, H. H. the Maharájá of, K. C. S. I. <i>New Johore, Singapore.</i>  |
| 1882              | Mar. 1.  | N.R. | Kennedy, Pringle, M. A. <i>Mozufferpur.</i>   |
| 1874              | Dec. 2.  | N.R. | Khudá Baksh, Khán Bahádur, Maulavi. <i>Bankipur.</i>  |
| 1884              | Nov. 5.  | N.R. | Kitts, Eustace John, c. s. <i>Moradabad.</i>  |
| 1867              | Dec. 4.  | R.   | King, Brigade Surgeon G. C. I. E., M. B., F. L. S., Supdt., Royal Botanic Garden. <i>Sibpur.</i>  |
| 1881              | Mar. 2.  | N.R. | King, Lucas White, B. A., LL. B., C. S., Deputy Commissioner. <i>Dehra Ismail Khan.</i>   |
| 1862              | Jan. 15. | R.   | King, W., B. A., D. Sc., Director, Geological Survey of India. <i>Calcutta.</i>   |
| 1889              | Mar. 6.  | R.   | Khunnah, Jagánath. <i>Calcutta.</i>   |
| 1890              | April 2. | N.R. | Lake, Philip, B. A., (Cantab.), Geological Survey of India.   |
| 1880              | July 3.  | N.R. | Lal, Pandit Brij Bukhan. Public Works Department. <i>Kurnal, Punjab.</i>  |
| 1887              | May 4.   | L.M. | Lanman, Charles R. Corresponding Secretary of the American Oriental Society, Professor of Sanskrit in Harvard College. <i>Cambridge, Mass. U. S. America.</i> |
| 1877              | Sep. 27. | N.R. | La Touche, James John Digges, B. A., C. S., Collector and Magistrate. <i>Aligarh.</i>   |
| 1889              | Mar. 6.  | N.R. | La Touche, Thomas Henry Digges, M. A. Deputy Superintendent, Geological Survey of India.  |
| 1889              | Nov. 6.  | R.   | Lee, W. A. <i>Calcutta.</i>   |
| 1881              | Mar. 2.  | N.R. | Lee, J. Bridges, M. A., F. G. S., F. C. S., F. Z. S., Barrister-at-Law. <i>Lahore.</i>  |
| 1888              | Feb. 1.  | N.R. | Lee, William Herbert, c. s. <i>Sylhet.</i>  |
| 1880              | July 7.  | A.   | Lewis, Rev. Arthur, B. A. <i>Europe.</i>  |
| 1889              | Feb. 6.  | R.   | Little, C., M. A., Bengal Education Department. <i>Calcutta.</i>  |
| 1886              | Sep. 30. | R.   | Luson, Hewling, c. s., Under Secretary Government of Bengal. <i>Calcutta.</i>   |

| Date of Election. |      |  |
|-------------------|------|--|
| 1869 July 7.      | R.   | Lyall, Charles James, B. A., c. s., Secretary Government of India, H. D. <i>Calcutta.</i>          |
| 1870 April 7.     | L.M. | Lyman, B. Smith. <i>Philadelphia, Pa., U. S., America.</i>   |
| 1884 Dec. 3.      | N.R. | McCabe, R. B., c. s., Deputy Commissioner. <i>Tezpur, Assam.</i>                                   |
| 1868 Dec. 2.      | N.R. | Macauliffe, Michael, B. A., c. s., Divisional Judge. <i>Sialkot.</i>                               |
| 1879 Feb. 5.      | N.R. | Macgregor, Lieut.-Col. C. R., F. R. G. S., 1st Burma Infantry. <i>Mandalay.</i>                    |
| 1848 April 5.     | L.M. | Maclagan, General Robert, R. E., LL. D., F. R. S. E., F. B. G. S. <i>Europe.</i>                   |
| 1873 Dec. 3.      | R.   | MacLeod, Kenneth, M. D., Brigade Surgeon. <i>Calcutta.</i>   |
| 1880 May 5.       | N.R. | MacLeod, Roderick Henry, c. s. Asst. Magte. <i>Kasia, Gorakhpur, N.-W. P.</i>                      |
| 1881 July 6.      | R.   | Mahomed Firukh Sháh, Prince. <i>Calcutta.</i>  |
| 1886 Jan. 6.      | N.R. | Mahomed Latif Khán, Sayyid, Khán Bahádur. <i>Jhang, Panjab.</i>                                    |
| 1882 Aug. 2.      | R.   | Mahomed Yusoof, Hon. Maulavi. <i>Calcutta.</i>   |
| 1888 July 4.      | N.R. | Mahomed Zainool Abideen Khán Bahádur Feroze Jung, Nawab Syud (Nizamut Family). <i>Murshedabad.</i> |
| 1867 April 3.     | R.   | Mainwaring, Lieutenant-General George Byres, s. c. <i>Serampur.</i>                                |
| 1889 Jan. 2.      | R.   | Maliáh, Kumár Rameswár. <i>Calcutta.</i>   |
| 1869 Sept. 1.     | R.   | Mallik, Yadulál. <i>Calcutta.</i>  |
| 1889 Mar. 6.      | R.   | Mann, John, M. A. Bengal Education Department. <i>Hnghli.</i>                                      |
| 1869 July 7.      | N.R. | Markham, Alexander Macaulay, c. s., F. R. G. S., Divisional Judge. <i>Meerut.</i>                  |
| 1886 Aug. 26.     | N.R. | Meade, Capt. Malcolm John, s. c., Political Agent. <i>Bhopawar.</i>                                |
| 1860 Mar. 7.      | A.   | Medlicott, H. B., M. A., F. R. S., F. G. S. <i>England.</i>  |
| 1886 Mar. 3.      | L.M. | Mehtá, Rustomjee Dhunjeebhoy. <i>Calcutta.</i>   |
| 1884 Nov. 5.      | N.R. | Middlemiss, C. S., A. B., Assistant Superintendent, Geological Survey of India.                    |
| 1871 Sept. 6.     | N.R. | Miles, Colonel S. B., B. O. S. C., Political Agent. <i>Oodeypur.</i>                               |
| 1884 Sept. 3.     | R.   | Miles, William Harry. <i>Calcutta.</i>   |
| 1870 July 6.      | R.   | Miller, A. B., B.A., Barrister-at-Law, Official Trustee. <i>Calcutta.</i>                          |
| 1874 May 6.       | N.R. | Minchin, F. J. V. <i>Aska, Ganjam.</i>   |
| 1856 Mar. 5.      | R.   | Mitra, Rájá Rájendralála, LL. D., C. I. E. <i>Calcutta.</i>  |
| 1890 Dec. 3.      | N.R. | Mitra, Varana Charana. Joint Magistrate. <i>Begusserai, Monghyr.</i>                               |
| 1876 Dec. 6.      | N.R. | Mockler, Col. E., Political Agent. <i>Muscat.</i>  |
| 1886 May 5.       | A.   | Molesworth, Capt. E. H. Commandant, Police Levy, <i>Debrugarh. Europe.</i>                         |

| Date of Election. |      |   |
|-------------------|------|---|
| 1881 May 4.       | A.   | Molloy, Lieut.-Col. Edward, 5th Goorkhas. <i>Europe.</i>  |
| 1864 Nov. 2.      | N.R. | Muir, J. W., M. A., C. S. <i>Azimgarh.</i>  |
| 1879 May 7.       | R.   | Mukerjea, Bhudeva, C. I. E. <i>Calcutta.</i>  |
| 1867 Mar. 6.      | R.   | Mukerjea, Rájá, The Hon. Pearimohan, C. S. I., M. A. <i>Uttarpara.</i>                                  |
| 1885 July 1.      | R.   | Mukerjea, Nilmani, Professor, Sanskrit College. <i>Calcutta.</i>  |
| 1890 July 2.      | R.   | Mukharji, T. N. <i>Calcutta.</i>  |
| 1886 May 5.       | R.   | Mukhopádhyaýa, Asutosh, M. A., F. R. A. S., F. R. S. E. <i>Calcutta.</i>                                |
| 1887 May 4.       | R.   | Munro, Thomas R., Port Commissioners Department. <i>Calcutta.</i>                                       |
| 1885 June 3.      | N.R. | Naemwoollah, Maulaví, Depy. Magte. <i>Bulandshahr.</i>  |
| 1887 June 1.      | N.R. | Narain, Ráo Govind Ráo. <i>Allahabad.</i>   |
| 1876 May 4.       | R.   | Nash, A. M., M. A., Inspector of European Schools, Bengal. <i>Calcutta.</i>                             |
| 1881 Nov. 2.      | R.   | Nicéville, L. de., F. E. S. <i>Calcutta.</i>  |
| 1889 Aug. 29.     | L.M. | Nimmo, John Duncan. <i>Calcutta.</i>  |
| 1887 April 6.     | R.   | Noetling, Fritz, Ph. D. Palaeontologist to the Geological Survey of India. <i>Calcutta.</i>             |
| 1869 July 7.      | N.R. | Nursing Ráo, A. V., Ráo Bahádur, F. R. A. S. <i>Vizagapatam.</i>  |
| 1885 Feb. 4.      | R.   | Nyáyaratna, Pandit Mahámahopádhyaýa Maheshchandra, C. I. E. <i>Calcutta.</i>                            |
| 1879 Aug. 28.     | F.M. | Oldham, Brigade-Surgeon, C. F., F. R. G. S. <i>Europe.</i>  |
| 1883 Dec. 1.      | N.R. | Oldham, R. D., A. R. S. M., F. G. S., Deputy Superintendent, Geological Survey of India.                |
| 1883 Aug. 30.     | N.R. | Oliver, Edw. Emmerson, M. I. C. E. <i>Lahore.</i>   |
| 1885 Feb. 4.      | N.R. | Oliver, James William, Forest Dept. <i>Burma.</i>   |
| 1887 July 6.      | R.   | Oung, Moungh Hla, Financial Department, Government of India. <i>Calcutta.</i>                           |
| 1880 Aug. 4.      | L.M. | Pandia, Pandit Mohanlál Vishnulál, F. T. S., Member and Secy., Royal Council of Meywar. <i>Udaipur.</i> |
| 1888 Feb. 1.      | L.M. | Pandit, Hon. Ajodhianath. <i>Allahabad.</i>   |
| 1880 Jan. 7.      | N.R. | Pargiter, Frederick, E., B. A., C. S. <i>Rajshahye.</i>   |
| 1862 May 7.       | L.M. | Partridge, Samuel Bowen, M. D., Surgeon-Major. <i>Europe.</i>   |
| 1871 Dec. 6.      | N.R. | Peal, S. E. <i>Sibsagar, Assam.</i>   |
| 1873 Aug. 6.      | R.   | Pedler, Alexander, F. C. S., Professor of Chemistry, Presidency College. <i>Calcutta.</i>               |
| 1888 June 6.      | L.M. | Pennell, Aubray Percival, B. A., C. S. <i>Burma.</i>  |
| 1865 Sept. 6.     | N.R. | Peppé, T. F. Tiril Tea Estate. <i>Ranchi, Lohardugga.</i>   |



| Date of Election. |      |  |
|-------------------|------|--|
| 1881 Aug. 25.     | R.   | Percival, Hugh Melville, M. A., Professor, Presidency College. <i>Calcutta.</i>                      |
| 1877 Aug. 1.      | N.R. | Peters, C. T., M. B., Surgeon Major. <i>Bijapur, Bombay.</i>   |
| 1889 Nov. 6.      | N.R. | Phillott, Capt. D. C., Adjutant 3rd Panjab Cavalry. <i>Dera Ismail Khan.</i>                         |
| 1890 Mar. 5.      | N.R. | Pilcher, Jesse Griggs, Deputy Surgeon General. <i>Nagpur.</i>  |
| 1889 Mar. 6.      | R.   | Prain, David, M. A., M. B., L. R. C. S., I. R. S. E., I. L. S., Royal Botanic Garden. <i>Sibpur.</i> |
| 1889 Mar. 6.      | N.R. | Prasad, Hanuman, Raes and Zemindar. <i>Ohunar.</i>   |
| 1889 Nov. 6.      | N.R. | Prasada, Pandit Jwála, M. A., Assistant Commissioner. <i>Rai Bareli.</i>                             |
| 1881 Feb. 2.      | N.R. | Prideaux, Colonel William Francis, B. S. C., Resident. <i>Kashmir.</i>                               |
| 1880 April 7.     | N.R. | Rai, Bipina Chandra, B. L. <i>Rannaghat, Nuddea.</i>   |
| 1887 May 4.       | A.   | Ráy, Prasannakumár, D. Sc., (Lond. and Edin.) Professor, Presidency College. <i>Europe.</i>          |
| 1889 June 5.      | R.   | Raye, Brigade Surgeon Daniel O'Connell, M. D. <i>Calcutta.</i>                                       |
| 1880 Aug. 4.      | N.R. | Reynolds, Herbert William Ward, C. S. <i>Mirzapur.</i>   |
| 1884 Mar. 5.      | R.   | Risley, H. H., B. A., C. S. <i>Calcutta.</i>   |
| 1860 Jan. 3.      | N.R. | Rivett-Carnac, John Henry, C. I. E., F. S. A., C. S., Opium Agent. <i>Ghazipur.</i>                  |
| 1889 June 5.      | A.   | Rowe, F. J., M. A., Bengal Education Department. <i>Europe.</i>                                      |
| 1888 July 4.      | N.R. | Roy, Kirán Chándra, Zemindar. <i>Narail, Jessore.</i>  |
| 1888 June 6.      | R.   | Roy, Kumár Denendro Nárayán. <i>Calcutta.</i>  |
| 1890 Mar. 5.      | N.R. | Roy, Mahárájá Girjanath. <i>Dinajpur.</i>  |
| 1888 June 6.      | R.   | Roy, Peary Mohun. <i>Calcutta.</i>   |
| 1888 Sep. 27.     | N.R. | Roy, Upendra Chándra, Zemindar. <i>Narail, Jessore.</i>  |
| 1885 Mar. 4.      | R.   | Rustomjee, H. M. <i>Calcutta.</i>  |
| 1889 June 5.      | N.R. | Sadler, Major J. Hayes, B. S. C. <i>Baroda.</i>  |
| 1880 Sep. 30.     | A.   | Sage, E. M., Ex. Engineer, P. W. D. <i>Europe.</i>   |
| 1890 Dec. 3.      | N.R. | Samuells, C. A., C. S. <i>Maldah.</i>  |
| 1887 June 1.      | A.   | Sandberg, Rev. Graham, B. A., Barrister-at-Law, Inner Temple. Chaplain. <i>Europe.</i>               |
| 1872 Dec. 4.      | R.   | Sarasvati, Pandit, Pránnáth, M. A., B. L. <i>Bhowanipur.</i>   |
| 1867 April 3.     | R.   | Sarkár, the Hon. Dr. Mahendralál, C. I. E. <i>Calcutta.</i>  |
| 1885 Mar. 4.      | R.   | Sarvadhikári, Rájumár, Rai Bahádur. <i>Calcutta.</i>   |
| 1885 Feb. 4.      | R.   | Sástri, Pandit Haraprasád, M. A. <i>Calcutta.</i>  |
| 1888 Feb. 1.      | R.   | Sclater, William Lutley, Deputy Superintendent, Indian Museum. <i>Calcutta.</i>                      |
| 1884 April 2.     | N.R. | Scotland, John Parry, C. E., Ex. Engineer. <i>Midnapur.</i>  |

| Date of Election. |      |  |
|-------------------|------|--|
| 1874 July 1.      | R.   | Scully, Dr. John. <i>Calcutta.</i>   |
| 1888 Sept.27.     | R.   | Sen, Gupta, Kali Prasanna. <i>Calcutta.</i>  |
| 1886 Mar. 3.      | N.R. | Sen, Hirálal, Excise Department. <i>Gya.</i>   |
| 1885 April 1.     | N.R. | Sen, Yadunáth. <i>Khurda, Puri.</i>  |
| 1885 April 1.     | R.   | Sen, Narendranáth. <i>Calcutta.</i>  |
| 1879 Jan. 8.      | N.R. | Sewell, R., M. C. S. <i>Madras.</i>  |
| 1879 May 7.       | A.   | Sheridan, C. J., C. E. <i>Europe.</i>  |
| 1888 April 4.     | N.R. | Shástri, Haridas Bhattáchárya, Sankhya Shastri, M. A. Director of Public Instruction, Jaypur State. <i>Jaypur.</i>       |
| 1882 May 3.       | N.R. | Shyamadá, Mahámahopadhyáya Kaviráj, Private Secy. to H. H. the Mahárájá of Udaipur. <i>Udaipur.</i>                      |
| 1878 April 3.     | R.   | Simson, A. <i>Calcutta.</i>  |
| 1887 April 6.     | R.   | Simpson, Dr. W. J., Health Officer to the Municipal Corporation. <i>Calcutta.</i>  |
| 1889 Nov. 6.      | N.R. | Simpson, Edmund James, L. R. C. P. E., F. L. P. S. G., L. M. G. E., Civil Surgeon. <i>Rai Bareili.</i>                   |
| 1884 Sept. 3.     | R.   | Singh, Kumár Indrachandra, of Paikparah. <i>Calcutta.</i>  |
| 1882 June 7.      | N.R. | Singh, Mahárájá Sir Harendra Kishore, K. C. I. E. <i>Bettiah.</i>  |
| 1890 Sept.25.     | R.   | Singh, Kumar Sarat Chandra. <i>Calcutta.</i>   |
| 1878 Oct. 4.      | N.R. | Singh, Rájá Lachman. <i>Agra.</i>  |
| 1882 Aug. 2.      | N.R. | Singh, Narain, Rájá Rám. <i>Khyrah, Monghyr.</i>   |
| 1880 June 2.      | N.R. | Singh, Thákur Garuradhawaya Prasád, Rájá of Beswan, Beswan Fort. <i>Aligarh.</i>   |
| 1890 Jan. 1.      | N.R. | Singh, Thakur Soorj Bakhsh, Zemindar. <i>Sitapur, Oudh.</i>  |
| 1889 Aug.29.      | N.R. | Singh, H. H. Prabhunarain, Bahádur, Mahárájá of Benares.   |
| 1889 Nov. 6.      | N.R. | Singh, Hon. Rájá Rameshwara, Bahádur. <i>Darbhanga.</i>  |
| 1859 Aug. 3.      | R.   | Sin̄ha, Baláichánd. <i>Calcutta.</i>   |
| 1872 Aug. 5.      | N.R. | Skrefsrud, Rev. L. O., Indian Home Mission to the Santháls. <i>Rampur Hát.</i>   |
| 1885 Nov. 4.      | A.   | Smith, N. F. F. <i>England.</i>  |
| 1874 June 3.      | N.R. | Smith, Vincent Arthur, C. S., Collector. <i>Mozuffarnagar.</i>   |
| 1890 April 2.     | A.   | Solf, Dr. W. H., German Consulate General. <i>Europe.</i>  |
| 1872 July 3.      | N.R. | Stephen, Carr, B. L. <i>Lahore.</i>  |
| 1876 Aug. 2.      | N.R. | St. John, Lieut.-Col. Sir Oliver Beauchamp, R. E., K. C. S. I., Resident in Mysore and Chief Commissioner. <i>Coorg.</i> |
| 1880 Nov. 8.      | A.   | Sturt, Lieut. Robert Ramsay Napier, B. S. C., Panjab Frontier Force. <i>Europe.</i>                                      |
| 1884 Mar. 5.      | A.   | Swinhoe, Lieut.-Col. C., B. S. C. <i>Europe.</i>   |
| 1864 Aug.11.      | R.   | Swinhoe, W., Attorney-at-Law. <i>Calcutta.</i>   |

| Date of Election. |      |  |
|-------------------|------|--|
| 1880 Nov. 3.      | A.   | Swynnerton, Rev. Charles. <i>England.</i>  |
| 1868 June 3.      | R.   | Tagore, The Hon. Mahārājā Sir Jotendra Mohun, Bahádur, K. C. S. I. <i>Calcutta.</i>  |
| 1865 Sept. 6.     | R.   | Tawney, C. H., C. I. E., M. A., Principal, Presidency College. <i>Calcutta.</i>  |
| 1884 May 5.       | N.R. | Taylor, W. C., Settlement Officer. <i>Khurda.</i>  |
| 1878 June 5.      | N.R. | Temple, Capt. R. C., s. c. <i>Palace, Mandalay, Burma.</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>  |
| 1886 Jan. 6.      | A.   | Thompson, Colonel, W. B., B. S. C. <i>Europe.</i>  |
| 1847 June 2.      | L.M. | Thuillier, Major-Genl. Sir Henry Edward Landor, E. A., C. S. I., F. R. S. <i>Europe.</i>   |
| 1889 Mar. 6.      | R.   | Thuillier, Colonel H. R., E. E., Surveyor General of India. <i>Calcutta.</i>   |
| 1871 April 5.     | F.M. | Treffitz, Oscar. <i>Europe.</i>  |
| 1861 June 5.      | L.M. | Tremlett, James Dyer, M. A., C. S., Judge, Chief Court. <i>Lahore.</i>   |
| 1890 Feb. 5.      | N.R. | Venis, Arthur, M. A., Former Boden Sanskrit scholar, Oxford, Principal, Sanskrit College, Benares. Professor, Queen's College. <i>Benares.</i> |
| 1885 May 6.       | R.   | Verdeau, Ivan. <i>Calcutta.</i>  |
| 1886 Sep. 30.     | N.R. | Waddell, Dr. Laurence Austine, M. B., Superintendent of Vaccination. <i>Darjeeling.</i>  |
| 1889 Nov. 6.      | R.   | Walsh, J. H. Tull, Indian Medical Service. General Hospital. <i>Calcutta.</i>  |
| 1865 May 3.       | R.   | Waterhouse, Col. James, B. S. C., Dy. Supdt., Survey of India. <i>Calcutta.</i>  |
| 1887 Oct. 6.      | N.R. | Watson, Lieut. Edward Yerbury, Deputy Assistant Commissary General. <i>Burma.</i>  |
| 1874 July 1.      | N.R. | Watt, Dr. George, C. I. E., Reporter on Economic Products. <i>Simla.</i>   |
| 1869 Sept. 1.     | A.   | Westland, Hon. James, C. S. <i>Europe.</i>   |
| 1880 Feb. 4.      | R.   | Wilson, The Hon. Arthur, Judge High Court. <i>Calcutta.</i>  |
| 1870 Jan. 5.      | R.   | Wood-Mason, James. Superintendent, Indian Museum. <i>Calcutta.</i>   |
| 1873 Aug. 6.      | N.R. | Woodthorpe, Col. Robert Gossett, C. B., E. E., Deputy Quarter-Master-General. <i>Simla.</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.     | M. Emile Senart, Member of the Institute of France.<br><i>Paris</i> .   |
| 1884 Jan. 15.     | Sir Monier Monier-Williams, <i>Knt.</i> , K. C. I. E., C. I. E., M. A.,<br>D. C. L., LL. D., Boden Prof. of Sanskrit. <i>Oxford</i> . |

## HONORARY MEMBERS.

|               |   |
|---------------|---|
| 1848 Feb. 2.  | Sir J. D. Hooker, K. C. S. L., C. B., M. D., D. C. L., F. R. S.,<br>F. G. S. <i>Kew</i> .     |
| 1853 April 6. | Major-General H. C. Rawlinson, K. C. B., D. C. L., F. R. S.,<br><i>London</i> .               |
| 1858 July 6.  | B. H. Hodgson. <i>Europe</i> .  |
| 1860 Mar. 7.  | Professor Max Müller. <i>Oxford</i> .   |
| 1860 Nov. 7.  | Dr. Aloys Sprenger. <i>Heidelberg</i> .   |
| 1860 Nov. 7.  | Dr. Albrecht Weber. <i>Berlin</i> .   |
| 1868 Feb. 5.  | Major-General Sir A. Cunningham, R. E., K. C. I. E., C. S. I.,<br>C. I. E. <i>Europe</i> .    |
| 1872 May 1.   | Sir G. B. Airy, K. C. B., M. A., D. C. L., LL. D., F. R. S. <i>London</i> .                   |
| 1872 June 5.  | Prof. T. H. Huxley, LL. D., PH. D., F. R. S., F. G. S., F. Z. S.,<br>F. L. S. <i>London</i> . |
| 1875 Nov. 3.  | Dr. O. Böttlingk. <i>Leipzig</i> .  |
| 1875 Nov. 3.  | Prof. J. O. Westwood. <i>Oxford</i> .   |
| 1876 April 5. | Dr. Warner Siemens. <i>Berlin</i> .   |
| 1879 June 4.  | Prof. E. B. Cowell, D. C. L. <i>Cambridge</i> .   |
| 1879 June 4.  | Dr. A. Günther, V. P. R. S. <i>London</i> .   |
| 1879 June 4.  | Dr. J. Janssen. <i>Paris</i> .  |
| 1879 June 4.  | Prof. H. Milne-Edwards. <i>Paris</i> .  |
| 1879 June 4.  | Prof. P. Regnaud. <i>Lyons</i> .  |
| 1879 June 4.  | E. Renan. <i>Paris</i> .  |
| 1881 Dec. 7.  | Professor Hermann L. E. Helmholtz. <i>Berlin</i> .  |
| 1881 Dec. 7.  | Dr. Rudolph v. Roth. <i>Tübingen</i> .  |
| 1881 Dec. 7.  | Sir William Thompson, <i>Knt.</i> , LL. D., F. R. S., F. R. S. E.,<br><i>Glasgow</i> .        |
| 1883 Feb. 7.  | W. T. Blanford, A. R. S. M., F. R. S., F. G. S., F. E. G. S.,<br>F. Z. S. <i>London</i> .     |
| 1883 Feb. 7.  | Alfred Russell Wallace, F. L. S., F. R. G. S. <i>Parkstone</i> ,<br><i>Dorsetshire</i> .      |
| 1883 Feb. 7.  | Prof. William Dwight Whitney. <i>Newhaven, Connecticut</i> ,<br>U. S. A.                      |

## CORRESPONDING MEMBERS.

| Date of Election. |         |   |
|-------------------|---------|---|
| 1844              | Oct. 2. | Macgowan, Dr. J. <i>Europe.</i>             |
| 1856              | July 2. | Krämer, A. von. <i>Alexandria.</i>          |
| 1856              | „ 2.    | Porter, Rev. J. <i>Belfast.</i>             |
| 1860              | Feb. 1. | Baker, The Rev. H. <i>E. Malabar.</i>       |
| 1861              | July 3. | Gösche, Dr. R. <i>Berlin.</i>               |
| 1862              | Mar. 3. | Murray, A., Esq. <i>London.</i>             |
| 1866              | May 7.  | Schlagintweit, Prof. E. von. <i>Berlin.</i> |

## ASSOCIATE MEMBERS.

|      |          |   |
|------|----------|---|
| 1874 | April 1. | Lafont, Rev. Fr. E., s. J., c. i. e. <i>Calcutta.</i> |
| 1875 | Dec. 1.  | Bate, Rev. J. D. <i>Allahabad.</i>                    |
| 1875 | „ 1.     | Maulavi Abdul Hai, Madrasah. <i>Calcutta.</i>         |
| 1882 | June 7.  | Giles, Herbert, Esq. <i>Europe.</i>                   |
| 1883 | Feb. 7.  | Rodgers, C. J. <i>Amritsar.</i>                       |
| 1884 | Aug. 6.  | Moore, F., F. R. S., F. L. S. <i>London.</i>          |
| 1885 | Dec. 2.  | Führer, Dr. A. <i>Lucknow.</i>                        |
| 1886 | Dec. 1.  | Bábú Saratchandra Dás, c. i. e. <i>Darjeeling.</i>    |

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.

The following members will be removed from the next member list of the Society under the operation of the above Rule :

A. C. Carlleyle, Esq.  
H. B. Medlicott, Esq.  
E. M. Sage, Esq.  
C. J. Sheridan, Esq.  
Colonel W. B. Thompson, B. S. C.  
Hon. J. Westland, c. s.

## LOSS OF MEMBERS DURING 1890.

## BY RETIREMENT.

A. F. M. Abdur Rahmán.  
 H. H. Anderson, Esq.  
 Rev. A. W. Atkinson.  
 R. R. Bayne, B. A., M. R. I.  
 I. C. Bose.  
 J. W. Chambers, Esq.  
 Sir J. W. Edgar, K. C. I. E., C. S. I., B. C. S.  
 Káliprasanna Ghosha.  
 Rev. J. M. Hamilton.  
 A. Macdonald, Esq.  
 J. W. Parry, Esq, C. E.  
 Lieut. E. W. Petley, B. N., F. R. C. S.  
 T. A. Pope, Esq.  
 Lieut.-Col. A. C. Toker, C. B.

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## BY DEATH.

*Ordinary Members.*

E. F. T. Atkinson, Esq., C. I. E.  
 Kumár Isvariprasad Garga.  
 Alexander Grant, Esq., M. I. C. E.  
 S. A. Hill, Esq., B. SC., A. R. S. M., F. C. S.  
 Nanda Kumár Roy.

*Honorary Member.*

Professor Bápu Deva Sástri.

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## BY REMOVAL.

*Under Rule 40.*

Dr. J. E. T. Aitchison, C. I. E.  
 J. Barnett, Esq.  
 H. C. Barstow, Esq., C. S.  
 Sir C. E. Barnard, K. C. S. I., C. S.  
 T. F. Bignold, Esq.  
 Hon. Sir R. E. Egerton, K. C. S. I., C. I. E., C. S.  
 Sir Lepel H. Griffin, K. C. S. I., C. S.  
 Major W. G. Hughes, M. S. C.

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[APPENDIX.]

ABSTRACT STATEMENT  
OF  
RECEIPTS AND DISBURSEMENTS  
OF THE  
ASIATIC SOCIETY OF BENGAL  
FOR  
THE YEAR 1890.

# STATEMENT

## *Asiatic Society*

### Dr.

| To ESTABLISHMENT.                                    |     |       |                             |
|--|-----|-------|-----------------------------|
| Salaries   | ..  | ...   | Rs. 4,356 6 11              |
| Commission   | ..  | ...   | 405 15 8                    |
|  |     |       | 4,762 6 7                   |
| To CONTINGENCIES.                                    |     |       |                             |
| Stationery   | ... | ...   | 86 14 0                     |
| Lighting   | ... | ...   | 48 0 0                      |
| Building   | ... | ...   | 193 5 9                     |
| Taxes  | ... | ...   | 819 0 0                     |
| Postage  | ... | ...   | 625 0 3                     |
| Freight  | ... | ...   | 10 0 0                      |
| Meeting  | ... | ...   | 91 12 0                     |
| Miscellaneous  | ... | ...   | 192 10 3                    |
|  |     |       | 2,066 10 3                  |
| To LIBRARY AND COLLECTIONS.                          |     |       |                             |
| Books  | ... | ...   | 1,889 3 5                   |
| Local Periodicals                                    | ... | ...   | 31 0 0                      |
| Binding  | ... | ...   | 435 9 6                     |
| Coins  | ... | ...   | 1 8 0                       |
| Purchase of Copper plates                            | ... | ...   | 35 0 0                      |
| Catalogue of Tibetan MSS.                            | ... | ...   | 66 4 0                      |
|  |     |       | 2,458 8 11                  |
| To PUBLICATIONS.                                     |     |       |                             |
| Journal, Part I                                      | ... | ...   | 3,205 12 7                  |
| Journal, Part II                                     | ... | ...   | 6,364 4 3                   |
| Proceedings  | ..  | ...   | 2,052 15 6                  |
|  |     |       | 11,623 0 4                  |
| To Printing charges of Circulars, Receipt-forms, &c. |     |       | 222 10 0                    |
| To Personal Account (Writes off and Miscellaneous)   |     |       | .....                       |
|  |     |       | 21,193 4 1                  |
|  |     |       | 610 12 0                    |
| To EXTRAORDINARY EXPENDITURE.                        |     |       |                             |
| Auditor's fee  | ... | ...   | 100 0 0                     |
| Barisál Guns   | ... | ...   | 6 0 0                       |
|  |     |       | 106 0 0                     |
| To Balance   | ... | ..... | 187,611 14 10               |
|  |     |       | Total Rs. ... 159,461 14 11 |



**NO. 1.**  
*of Bengal.*

Cr.

|   |        |                  |
|---|--------|------------------|
| By Balance from last report ...                                     | ...    | Rs. 139,211 13 7 |
| <b>BY CASH RECEIPTS.</b>  |        |                  |
| Publications sold for cash ...                                      | ... Rs | 396 15 11        |
| Interest on Investments ...   | ...    | 9,469 9 2        |
| Rent of two rooms on the ground floor of the Society's premises ... | ...    | 300 0 0          |
| Advances recovered ...  | ...    | 3 14 6           |
| Miscellaneous ...   | ...    | 57 5 9           |
|   |        | 10,227 13 4      |
| <b>BY PERSONAL ACCOUNT.</b>   |        |                  |
| Admission Fees ...  | ...    | 736 0 0          |
| Subscriptions ...   | ...    | 8,109 0 0        |
| Sales on credit ...   | ...    | 995 14 0         |
| Miscellaneous ...   | ...    | 181 6 0          |
|   |        | 10,022 4 0       |
| Total Income ...  | .....  | 20,250 1 4       |

Total Rs. ... 159,461 14 11

WILL. KING,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Examined and found correct.  
MEUGENS & KING,  
*Public Accountants,*  
*The 20th March, 1891.*

**STATEMENT**  
*Oriental Publication Fund in Account*

---

Dr.

To CASH EXPENDITURE.

|  |     |     |     |                          |    |    |
|--|-----|-----|-----|--------------------------|----|----|
| Printing charges ...                               | ... | ... | Rs. | 8,699                    | 13 | 6  |
| Editing charges ...                                | ... | ... | ... | 3,613                    | 8  | 0  |
| Binding ...  | ... | ... | ... | 7                        | 0  | 0  |
| Salaries ...                                       | ... | ... | ... | 1,766                    | 0  | 0  |
| Advertising ...                                    | ... | ... | ... | 90                       | 0  | 0  |
| Freight ...  | ... | ... | ... | 15                       | 0  | 0  |
| Stationery ...                                     | ... | ... | ... | 54                       | 1  | 0  |
| Copying ...  | ... | ... | ... | 25                       | 0  | 0  |
| Postage ...  | ... | ... | ... | 819                      | 13 | 6  |
| Purchase of MSS. ...                               | ... | ... | ... | 22                       | 0  | 0  |
| Contingencies ...                                  | ... | ... | ... | 65                       | 11 | 1  |
| Commission on collecting bills ...                 | ... | ... | ... | 56                       | 15 | 11 |
|  |     |     |     | 15,234 15 0              |    |    |
| To PERSONAL ACCOUNT (Writes off and Miscellaneous) |     |     |     | 5 4 0                    |    |    |
|  |     |     |     | 15,240 3 0               |    |    |
|  |     |     |     | 469 2 9                  |    |    |
| To Balance ...                                     | ... | ... | ... | 15,709 5 9               |    |    |
|  |     |     |     | Total Rs. ... 15,709 5 9 |    |    |

## NO. 2.

*with the Asiatic Society of Bengal.***Cr.**

|                          |     |     |     |       |     |       |   |   |
|--------------------------|-----|-----|-----|-------|-----|-------|---|---|
| Balance from last report | ... | ... | ... | ..... | Rs. | 3,695 | 7 | 6 |
|--------------------------|-----|-----|-----|-------|-----|-------|---|---|

**BY CASH RECEIPTS.**

|                            |     |     |     |              |          |          |
|----------------------------|-----|-----|-----|--------------|----------|----------|
| Government allowance       | ... | ... | Rs. | 9,000        | 0        | 0        |
| Publications sold for cash | ... | ... | ... | 711          | 8        | 0        |
| Advances recovered         | ... | ... | ... | 85           | 15       | 0        |
|                            |     |     |     | <u>9,797</u> | <u>7</u> | <u>0</u> |

**BY PERSONAL ACCOUNT.**

|                 |     |       |     |     |               |          |          |
|-----------------|-----|-------|-----|-----|---------------|----------|----------|
| Sales on credit | ... | ...   | ... | ... | 2,216         | 7        | 3        |
|                 |     |       |     |     | <u>2,216</u>  | <u>7</u> | <u>3</u> |
| Total Income    | ... | ..... |     |     | 12,013        | 14       | 3        |
| Total Rs.       | ... |       |     |     | <u>15,709</u> | <u>5</u> | <u>9</u> |

WILL. KING,

*Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS &amp; KING,

Public Accountants,

The 20th March, 1891.

## STATEMENT

### *Sanskrit Manuscript Fund in Account*

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Dr.

To CASH EXPENDITURE.

|                         |     |       |     |            |            |
|-------------------------|-----|-------|-----|------------|------------|
| Salaries ...            | ... | ...   | Rs. | 1,887 15 0 |            |
| Travelling expenses ... | ... | ...   | ... | 10 0 0     |            |
| Commission ...          | ... | ...   | ... | 0 10 0     |            |
| Printing charges ...    | ... | ...   | ... | 388 12 0   |            |
| Postage ...             | ... | ...   | ... | 28. 8 9    |            |
| Contingencies ...       | ... | ...   | ... | 54 11 9    |            |
| Stationery ...          | ... | ...   | ... | 5 0 0      |            |
| Purchase of MSS. ...    | ... | ...   | ... | 500 4 6    |            |
| Freight ...             | ... | ...   | ... | 2 0 0      |            |
|                         |     |       |     |            |            |
|                         |     |       |     |            | 2,377 14 0 |
| To Balance ...          | ... | ..... |     |            | 4,214 2 8  |

Total Rs. ... 6,592 0 8

## NO. 3.

*with the Asiatic Society of Bengal.***Cr.**

|                          |     |     |     |       |     |       |   |   |
|--------------------------|-----|-----|-----|-------|-----|-------|---|---|
| Balance from last report | ... | ... | ... | ..... | Rs. | 3,300 | 0 | 3 |
|--------------------------|-----|-----|-----|-------|-----|-------|---|---|

**BY CASH RECEIPTS.**

|                      |     |     |     |                  |   |   |
|----------------------|-----|-----|-----|------------------|---|---|
| Government allowance | ... | ... | Rs. | 3,200            | 0 | 0 |
|                      |     |     |     | <u>3,200 0 0</u> |   |   |

**BY PERSONAL ACCOUNT.**

|                 |     |     |     |               |   |   |
|-----------------|-----|-----|-----|---------------|---|---|
| Sales on credit | ... | ... | ... | 92            | 0 | 0 |
|                 |     |     |     | <u>92 0 0</u> |   |   |

|              |     |       |       |   |   |
|--------------|-----|-------|-------|---|---|
| Total Income | ... | ..... | 3,292 | 0 | 0 |
|--------------|-----|-------|-------|---|---|

|           |     |              |   |   |
|-----------|-----|--------------|---|---|
| Total Rs. | ... | <u>6,592</u> | 0 | 3 |
|-----------|-----|--------------|---|---|

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS &amp; KING,

*Public Accountants,**The 20th March, 1891.*

# STATEMENT

## *Personal*

**Dr.**

To Balance from last report ... .. Rs. 4,687 4 8

**To CASH EXPENDITURE.**

|   |     |        |        |      |
|---|-----|--------|--------|------|
| Advances for purchase of Sanskrit MSS., &c. | ... | .....  | 4,936  | 4 4  |
| To Asiatic Society                          | ... | 10,022 | 4 0    |      |
| To Oriental Publication Fund                | ... | 2,216  | 7 3    |      |
| To Sanskrit MSS. Fund                       | ... | 92     | 0 0    |      |
|   |     |        | 12,330 | 11 3 |

Total Rs. ... 21,954 4 3

NO. 4.  
*Account.*

Cr.

|                              |     |     |     |        |    |   |
|------------------------------|-----|-----|-----|--------|----|---|
| By Cash receipts             | ... | ... | Rs. | 18,520 | 3  | 3 |
| By Asiatic Society           | ... | ... | ... | 610    | 12 | 0 |
| By Oriental Publication Fund | ... | ... | ... | 5      | 4  | 0 |
|                              |     |     |     | <hr/>  |    |   |
|                              |     |     |     | 19,136 | 3  | 3 |

| By Balances.      | Due to the Society. |       |       | Due by the Society. |       |       |
|-------------------|---------------------|-------|-------|---------------------|-------|-------|
|                   |                     |       |       |                     |       |       |
| Members ...       | 5,167               | 12    | 7     | 194                 | 12    | 10    |
| Subscribers ...   | 251                 | 1     | 0     | 73                  | 7     | 0     |
| Employés ...      | 30                  | 0     | 0     | 250                 | 0     | 0     |
| Agents ...        | 269                 | 2     | 6     | 2,269               | 15    | 10    |
| Miscellaneous ... | 253                 | 6     | 10    | 365                 | 2     | 3     |
|                   | <hr/>               | <hr/> | <hr/> | <hr/>               | <hr/> | <hr/> |
|                   | 5,971               | 6     | 11    | 3,153               | 5     | 11    |

2,818 1 0

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21,954 4 3

WILL. KING,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Benga .*

Examined and found correct.  
MEUGENS & KING,  
*Public Accountants,*  
*The 20th March, 1891.*

## STATEMENT

### *Invest*

Dr.

|                                 |     | Nominal.       |            | Actual.             |
|---------------------------------|-----|----------------|------------|---------------------|
| To Balance from last report ... | ... | Rs. 141,300    | 0 0        | 141,015 1 7         |
| To Cash ...                     | ... | .....          |            | 7 11 8              |
| <b>Total Rs. ...</b>            |     | <b>141,300</b> | <b>0 0</b> | <b>141,022 13 3</b> |

| *Funds.             | Actual.        |            |              |            | Total.         |            |
|---------------------|----------------|------------|--------------|------------|----------------|------------|
|                     | Permanent.     |            | Temporary.   |            |                |            |
| Asiatic Society ... | 135,400        | 0 0        | .....        | .....      | 135,400        | 0 0        |
| Sanskrit MSS. ...   | .....          | .....      | 1,943        | 5 3        | 1,943          | 5 3        |
| Trust Fund ...      | 1,200          | 0 0        | .....        | .....      | 1,200          | 0 0        |
|                     | <b>136,600</b> | <b>0 0</b> | <b>1,943</b> | <b>5 3</b> | <b>138,543</b> | <b>5 3</b> |

## STATEMENT

### *Trust*

Dr.

|  |     |       |              |             |
|--|-----|-------|--------------|-------------|
| To Balance (Servants Pension Fund) ... | ... | ..... | Rs. 1,261    | 3 10        |
| <b>Total Rs. ...</b>                   |     |       | <b>1,261</b> | <b>3 10</b> |



NO. 5.  
*ments.*

---

|             |     |     |     | Cr.      |         |         |   |         |    |   |
|-------------|-----|-----|-----|----------|---------|---------|---|---------|----|---|
|             |     |     |     | Nominal. |         | Actual. |   |         |    |   |
| By Cash     | ... | ... | ... | Rs.      | 2,400   | 0       | 0 | 2,479   | 8  | 0 |
| By Balance* | ... | ... | ... | ...      | 138,900 | 0       | 0 | 138,543 | 5  | 3 |
| Total Rs.   |     |     |     | ...      | 141,300 | 0       | 0 | 141,022 | 13 | 3 |

WILL. KING,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS KING,  
*Public Accountants,*  
*The 20th March, 1891.*

NO. 6.  
*Fund.*

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|                             |     |     |     | Cr.   |     |       |   |    |
|-----------------------------|-----|-----|-----|-------|-----|-------|---|----|
| By Balance from last report | ... | ... | ... | ..... | Rs. | 1,207 | 8 | 10 |
| By interest on Investments  | ... | ... | ... | ..... |     | 54    | 0 | 0  |
| Total Rs.                   |     |     |     | ...   |     | 1,261 | 8 | 10 |

WILL. KING,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS & KING,  
*Public Accountants,*  
*The 20th March, 1891.*

## STATEMENT

*Cash.*

| Dr.                          |     |     |                |
|------------------------------|-----|-----|----------------|
| To Balance from last report  | ... | ... | Rs. 1,712 2 11 |
| RECEIPTS.                    |     |     |                |
| To Asiatic Society           | ... | ... | 10,227 13 4    |
| To Oriental Publication Fund | ... | ... | 9,797 7 0      |
| To Sanskrit Manuscript Fund  | ... | ... | 3,200 0 0      |
| To Personal Account          | ... | ... | 18,520 3 3     |
| To Investment                | ... | ... | 2,479 8 0      |
| To Trust Fund                | ... | ... | 54 0 0         |
| Total Rs.                    |     |     | 45,991 2 6     |

## STATEMENT

*Balance*

| Dr.                 |     |     |               |
|---------------------|-----|-----|---------------|
| To Cash             | ... | ... | Rs. 2,195 1 5 |
| To Investment       | ... | ... | 138,543 5 3   |
| To Personal Account | ... | ... | 2,818 1 0     |
| Total Rs.           |     |     | 143,556 7 8   |

## NO. 7.

*Account.***Cr.****EXPENDITURE.**

|                                     |     |        |    |   |
|-------------------------------------|-----|--------|----|---|
| By Asiatic Society ... ..           | Rs. | 21,239 | 4  | 1 |
| By Oriental Publication Fund ... .. | ... | 15,234 | 15 | 0 |
| By Sanskrit Manuscript Fund ... ..  | ... | 2,377  | 14 | 0 |
| By Personal Account ... ..          | ... | 4,936  | 4  | 4 |
| By Investment ... ..                | ... | 7      | 11 | 8 |
| By Balance ... ..                   | ... | 2,195  | 1  | 5 |
| <hr/>                               |     |        |    |   |
| Total Rs. ... ..                    | ... | 45,991 | 2  | 6 |
| <hr/>                               |     |        |    |   |

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS &amp; KING,

*Public Accountants,**The 20th March, 1891.*

## NO. 8.

*Sheet.***Cr.**

|                                     |     |         |    |    |
|-------------------------------------|-----|---------|----|----|
| By Asiatic Society ... ..           | Rs. | 137,611 | 14 | 10 |
| By Oriental Publication Fund ... .. | ... | 469     | 2  | 9  |
| By Sanskrit Manuscript Fund ... ..  | ... | 4,214   | 2  | 3  |
| By Trust Fund ... ..                | ... | 1,261   | 3  | 10 |
| <hr/>                               |     |         |    |    |
| Total Rs. ... ..                    | ... | 143,556 | 7  | 8  |
| <hr/>                               |     |         |    |    |

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.


MEUGENS &amp; KING,

*Public Accountants,**The 20th March, 1891.*




PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL.

EDITED BY  
THE HONORARY SECRETARIES.



JANUARY TO DECEMBER,  
1892.



CALCUTTA :  
PRINTED AT THE BAPTIST MISSION PRESS,  
AND PUBLISHED BY THE  
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1893.



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**PROCEEDINGS**  
OF THE  
**ASIATIC SOCIETY OF BENGAL,**  
FOR JANUARY, 1892.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 6th January, 1892, at 9 P. M.

HON'BLE SIR A. W. CROFT, K. C. I. E., M. A., President, in the Chair.

The following members were present :—

E. C. Cotes, Esq., Bábu Sarat Chundra Dás, Dr. A. F. R. Hoernle, A. Hogg, Esq., C. Little, Esq. C. J. Lyall, Esq., Kumár Rameswár Maliáh, Bábu Asutosh Mukhopádhyaý, L. de Nicéville, Esq., Pandit Haraprasád Shástri, E. Thurston, Esq., C. R. Wilson, Esq.  
Visitor :—F. W. Howse, Esq.

The minutes of the last meeting were read and confirmed.

Nineteen presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were ballotted for and elected Ordinary Members :—

Lieutenant Wolseley Haig.  
J. Woodburn, Esq., C. S.  
Bábu Gerindranath Dutt.  
H. K. W. Arnold, Esq., (Re-elected.)  
H. N. Thompson, Esq.

The following gentleman is a candidate for election at the next meeting :

G. O. Arthur, Esq., C. S., proposed by E. J. Kitts, Esq., seconded by C. Little, Esq.

The President announced that the Council had elected Mr. C. R. Wilson to officiate as Philological Secretary and member of Council in the place of Dr. Hoernle, while he was engaged with the publication of the Bower Manuscript. Dr. Hoernle retains the numismatic work.

The following paper was read :—

*An account of an old inscription.*—By MONSHI DEBIPARSAD OF JODHPORE. Communicated by THE PHILOLOGICAL SECRETARY.

(Abstract.)

This paper recorded the discovery of an old Sanskrit inscription in the village of Bījapur in Márwár.

The inscription is engraved on a piece of black stone  $2\frac{1}{4}$  ft. in length and  $1\frac{1}{4}$  ft. in breadth. With the exception of a few places, where the letters have been obliterated, the writing is quite legible and the meaning clear.

The stone is said to have been taken from the door of a Jaina temple which stands alone in the jungle, two or three miles from the village of Bījapur, on the site of the old city of *Hasti Kuṇḍi* now called *Hatuṇḍi*.

The city lay on the borders of Mewár and Márwár, at the foot of the Arávali hills. Remains of its walls may still be seen. They are thick enough to allow a cart to be driven along the top of them.

It appears from the inscription that the city of *Hasti Kuṇḍi* was till the eleventh century of the Saṃvat the capital of a branch of the *Ráshṭrakúta* family, who reigned there in great splendour.

According to Monshi Debiparsad, the inscription mentions the following kings :—

1. *Rája Harivarman.*
2. *Vidagdha Rája* (son of *Harivarman*), a mighty king, who in saṃvat 973 erected a great Jaina temple, and levied taxes in its behalf on his subjects and foreign traders.
3. *Dhavalá Rája* (son of *Vidagdha Rája*), who in saṃvat 996 doubled these taxes, and who was ruling Rájputána with increased authority in saṃvat 1003, when the temple was restored by a leading Jaina community.

The inscription also mentions four other kings, who were tributaries of *Dhavalá Rája*; viz :—

4. *S'ri Muñja*, the conqueror of *Mewár*.
5. *Rája Dharaṇivaráha*, then a refugee at the court of *Dhavalá Rája*.
6. *Múla Rája*, the conqueror of *Rája Dharaṇivaráha*.
7. *S'ri Durlabha Rája*, who was reigning in great pomp and glory

Monshi Debiparsad considers that *Múla Rája* and *Durlabha Rája* are kings of Gujarát, of the *Solankhí* family. He identifies them with the *Múla Rája* and his grandson *Durlabha Rája* whose history is given in the *Dvaiásharáya*.

He also says that *Dharañivardha* was a great rája of Márwár, who divided his kingdom amongst his nine brothers, and that this accounts for his weakness.

Lastly Monshi Debiparsad believes that *Muñja Rája* is the same who was uncle to *Rája Bhoja* of Dhár, and is the *Vákpati Rája* of whom one inscription dated samvat 1031 has been found.

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### LIBRARY.

The following additions have been made to the Library since the meeting held in December last.

#### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

- Baltimore. Johns Hopkins University,—Circulars, Vol. XI, No. 92.
- Berlin. Zeitschrift für Ethnologie,—Heft IV, 1891.
- Bombay. The Indian Antiquary,—Vol. XX, No. 252.
- Brussels. L'Académie Royale des Sciences, des Lettres et des Beaux-arts de Belgique,—Annuaire, 1890 et 1891.
- . ————. Bulletins (3<sup>d</sup> Série), Tome XVIII-XXI.
- . ————. Mémoires Couronnés,—Tome XLIII-XLV.
- . ————. Mémoires Couronnés et Mémoires des Savants E'trangers, Tome L et LI.
- Budapest. La Société Hongroise de Géographie,—Bulletin, Tome XIX, Nos. 5-7.
- Calcutta. Geological Survey of India,—Records, Vol. XXIV, Part 4.
- . Indian Engineering,—Vols. X, Nos. 23-26; XI, 1.
- . Photographic Society of India,—Journal, Vol. IV, No. 12.
- Frankfurt, a O. Des Naturwissenschaftlichen Vereins des Reg-Bez Frankfurt,—Monatliche Mittheilungen aus dem Gesamtgebiete der Naturwissenschaften, Jahr. VIII, Nr. 12.
- . ————. Helios, Jahr IX, Nrn 1-6.
- . ————. Societatum Litterae, Jahr V, Nrn. 2-8
- , a. M. Der Senckenbergischen Naturforschenden Gesellschaft,—Abhandlungen, Band XVI, Heft 3 und 4.

- Graz. Des Naturwissenschaftlichen Vereines für Steiermark,—Jahrgang 1890.
- Halle. Der Kaiserlichen Leopoldino-Carolinischen Deutschen Akademie der Naturforscher,—Leopoldina, Nrn 25 et 26.
- . ————. Nova Acta, Tome LIV.
- Hamburg. Naturwissenschaftlichen Verein in Hamburg,—Abhandlungen aus dem Gebiete der Naturwissenschaften, Band XI Nrn 2 und 3.
- Hamilton. Hamilton Association,—Journal and Proceedings, Part VII.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Septembre et Octobre 1891.
- Helsingfors. Finska Vetenskaps-Societeten,—Bidrag, Häftet 49 et 50.
- . ————. Ofversigt No. XXXII.
- . Societatis Scientiarum Fennicæ,—Acta, Tomus XVII.
- London. Institution of Mechanical Engineers,—Proceedings, No. 3, 1891.
- . Nature,—Vol. XLV, Nos. 1150-53.
- . Royal Asiatic Society of Great Britain and Ireland,—Journal, Vol. XXI, Nos. 1-3.
- . Royal Astronomical Society,—Monthly Notices, Vol. LI, No. 9.
- . Royal Geographical Society,—Proceedings, Vol. XIII, Nos. 10 and 11.
- . Royal Microscopical Society,—Journal, Part 5, 1891.
- . Royal Statistical Society,—Journal, Vol. LIV, Part 3.
- . The Academy,—Nos. 1019-21, 1023.
- . The Athenæum,—Nos. 3342-46.
- . Zoological Society of London,—Transactions, Vol. XIII, Part 3.
- . ————. Proceedings, Parts 2 and 3, 1891.
- Mexico. La Sociedad Científica "Antonio Alzate,"—Memorias y Revista, Tomo IV, Nos. 11-12.
- Mussorie. The Indian Forester,—Vol. XVII, Nos. 4-6, 11.
- New Haven. American Oriental Society,—Proceedings, May 15th and 16th, 1891.
- Paris. La Société de Géographie,—Compte Rendu des Seances, Nos. 17 et 18, 1891.
- Philadelphia. Academy of Natural Sciences of Philadelphia,—Proceedings, Part I, 1891.
- Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno VI, No. 9.
- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XX, Disp 10<sup>a</sup>.

- Santiago. Deutschen Wissenschaftlichen Vereins,—Verhandlungen, Band II, Heft 3.
- St. Petersburg. La Société Impériale Russe de Géographie,—Proceedings, Tome XXVII, No. 4.
- Stuttgart. Des Vereins für Vaterländische Naturkunde in Württemberg.—Jahreshefte, Jahrgang XLVII.
- Taiping. Perak Government,—Perak Gazette, Vol. IV, Nos. 35–39.
- Tōkyō. Imperial University of Japan,—Journal of the College of Science, Vol. IV, Part 2.
- Turin. La R. Accademia delle Scienze di Torino,—Atti, Tome XXVI, Disp 14<sup>a</sup>-15<sup>a</sup>.
- . ————. Memorie, Serie Seconda. Tomo XLI.
- Vienna. Der. K. K. Geologischen Reichsanstalt,—Abhandlungen, Band XV, Heft 3.
- . ————. Verhandlungen, No. 14, 1891.
- Zagreb. Hrvatskoga Arkeologickoga Društva,—Viestnik, Godina XIII Br. 4.

### BOOKS AND PAMPHLETS

*presented by the Authors, Translators, &c.*

- BLOOMFIELD, MAURICE. Contributions to the interpretation of the Veda. Third series (Reprint from the Journal of the American Oriental Society, Vol. XV). 8vo. New Haven, 1891.
- RAY, PRATÁPA CHANDRA. The Mahabharata, translated into English Prose, Part LXX. 8vo. Calcutta, 1891.

### MISCELLANEOUS PRESENTATIONS.

- Report on the Railway-borne Traffic of the Central Provinces for the official year 1890-91. Fcp. Nagpur, 1891.
- Returns of the Railway-borne Traffic of the Central Provinces, during the quarter ending 30th June 1891. Fcp. Nagpur, 1891.
- CHIEF COMMISSIONER, CENTRAL PROVINCES.
- Butter and Cheese Making. By John Mahon (Bulletin, Department of Agriculture, Brisbane, No. 12). 8vo. Brisbane, 1891.
- DEPARTMENT OF AGRICULTURE, BRISBANE.
- General Report on Public Instruction, in Bengal for 1890-91. Fcp. Calcutta, 1891.
- Report on the Railway-borne Traffic of Bengal during the year 1890-91. Fcp. Calcutta, 1891.
- Report on the River-borne Traffic of the Lower Provinces of Bengal, and on the Trade of Calcutta, and on the Trade of Chittagong and the Orissa Ports, for the year 1890-91. Fcp. Calcutta, 1891.

Returns of the Rail and River-borne Trade of Bengal during the quarter ending the 30th June 1891. Fcp. Calcutta, 1891.

Selections from the Records of the Government of India, Home Department, No. CCLXXVI.—Reports on Publications issued and registered in the several Provinces of British India during the year 1890. Fcp. Calcutta, 1891.

The Tribes and Castes of Bengal, Vols. I. and II. By H. H. Risley 8vo. Calcutta, 1891.

GOVERNMENT OF BENGAL.

The Indian Antiquary; Vol. XX, Part 251, September 1891. 4to. Bombay, 1891.

Selections from the Records of the Government of India, Home Department, No. CCLXXVI.—Reports on Publications issued and registered in the several Provinces of British India during the year 1890. Fcp. Calcutta, 1891.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

General Report on Public Instruction in the North-Western Provinces and Oudh for the year 1890-91. Fcp. Allahabad, 1891.

GOVERNMENT OF N.-W. P. AND OUDH.

A Monograph of Oriental Cicadidæ, Part IV. By W. L. Distant. 4to. London, 1891.

INDIAN MUSEUM.

Kudatku Bilik facsimile der Uigurischen handschrift der K. K. Hofbibliothek in Wien. von. Dr. W. Radloff. 4to. St. Petersburg, 1890.

DER KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU ST. PETERSBURG. Annals of the Royal Botanic Garden, Calcutta, Vol. III. 4to. Calcutta, 1891.

ROYAL BOTANIC GARDEN, CALCUTTA.

Tide-Tables for the Indian Ports for the year 1892 (also January 1893). 8vo. London, 1891.

SURVEY OF INDIA—TIDAL AND LEVELLING OPERATIONS.

PERIODICALS PURCHASED.

Allahabad. North Indian Notes and Queries,—Vol. I, No. 9.

Berlin. Deutsche Litteraturzeitung,—Jahrgang XII, Nr. 37-44.

———. Orientalische Bibliographie,—Band V, Heft 4.

Calcutta. Calcutta Review,—Vol. XCIV, No. 187.

———. Indian Medical Gazette,—Vol. XXVI, No. 12.

Cassel. Botanisches Centralblatt.—Band XLVII, Heft 9-13.

Geneva. Archives des Sciences Physiques et Naturelles,—Tome XXVI, No. 11.

- Braunschweig. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften,—Heft VI, 1887.
- Göttingen. Der Königl. Gesellschaft der Wissenschaften,—Göttin-  
gische Gelehrte Anzeigen, Nrn. 17-19, 1891.
- . ———. Nachrichten, Nr. 7, 1891.
- Leipzig. Annalen der Physik und Chemie,—Band XLIV, Heft 3.
- . ———. Beiblätter, Band XV, Stück 10.
- Leyden. Internationales Archiv-für Ethnographie.—Band IV, Heft V.
- London. The Annals and Magazine of Natural History,—Vol. VIII  
(6<sup>th</sup> series), Nos. 46 and 47.
- . The Chemical News,—Vol. LXIV, Nos. 1668-72.
- . The Entomologist,—Vol. XXIV, Nos. 341 and 342.
- . The Entomologist's Monthly Magazine,—Vol. II (2<sup>nd</sup> Series),  
Nos. 22 and 23.
- . The Ibis,—Vol. III (6<sup>th</sup> Series), No. 12.
- . The Journal of Botany,—Vol. XXIX, Nos. 346 and 347.
- . The London, Edinburgh and Dublin Philosophical Magazine,—  
Vol. XXXII, Nos. 197 and 198.
- . The Messenger of Mathematics,—Vol. XXI, Nos. 5 and 6.
- . The Quarterly Journal of Microscopical Science,—Vol.  
XXXII, Part 4.
- . Rhopalocera Exotica, Part 18.
- New Haven. The American Journal of Science,—XLII (3<sup>rd</sup> Series)  
No. 250.
- Paris. L' Academie des Sciences,—Comptes Rendus des Séances,—  
Tome CXIII, Nos. 9-17.
- . Annales de Chimie et de Physique,—Tome XXIV (6<sup>me</sup> Série),  
Octobre et Novembre 1891.
- . Revue Scientifique,—Tome XLVIII, Nos. 20-24.
- . Revue Critique d' Histoire et de Littérature,—Tome XXXII,  
Nos. 37-44.
- Vienna. Vienna Oriental Journal,—Vol. V, No. 3.

### BOOKS PURCHASED.

- The Anandás'srama Sanskrit Series, No. 21, Part II. The Brahma  
Sútrás of Srémat Krishna Dwaipáyana. 8vo. Poona, 1891.
- . No. 23, Vaiyásikanyayálá or Vedántadhikaraṇa-  
málá. 8vo. Poona, 1891.





PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR FEBRUARY, 1892.

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The Annual Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd February, 1892, at 9 P. M.

Hon'ble Sir A. W. CROFT, K. C. I. E., M. A., President, in the chair.

The following members were present :—

Dr. J. R. Adie, H. K. W. Arnold, Esq., Bábu Nobin Chand Bural, E. C. Cotes, Esq., Bábu Sarat Chandra Dás, Dr. A. F. R. Hoernle, Rev. H. B. Hyde, Kumár Rameswar Maliáh, Bábu Asutosh Mukhopádhyaý, T. R. Munro, Esq., L. de Nicéville, Esq., J. D. Nimmo, Esq., R. D. Oldham, Esq., M. H. Oung, Esq., A. Pedler, Esq., F. J. Rowe, Esq., Bábu Narendranáth Sen, Pundit Haraprasad Shastri, E. Thurston, Esq., Dr. J. H. Tull Walsh, Colonel J. Waterhouse, C. R. Wilson, Esq.

Visitor :—Dr. W. W. Sheppard.

According to the Bye-Laws of the Society, the President ordered the voting papers to be distributed for the election of Office-Bearers and Members of Council for 1892, and appointed E. Thurston, Esq., and Bábu Asutosh Mukhopádhyaý to be Scrutineers.

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

ANNUAL REPORT FOR 1891.

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The Council of the Asiatic Society have the honor 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 15 Ordinary Members were elected, 10 withdrew, 6 died, and 6 were removed from the list under Rule 40, being more than 3 years absent from India. The election of one member was cancelled by request as he was contemplating an early return to Europe. The total number of members at the close of 1891 was thus: 295 against 303 at the end of the preceding year; of these 101 were Resident, 134 Non-Resident, 10 Foreign, 21 Life, 27 absent from India, and 2 special Non-Subscribing Members as will be seen from the following table which also shows the fluctuations in the number 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. |              |
| 1886  | 98        | 142           | 18       | 253    | 16          | 48      | 2                        | 66     | 319          |
| 1887  | 98        | 137           | 15       | 250    | 17          | 44      | 2                        | 63     | 313          |
| 1888  | 98        | 136           | 15       | 249    | 20          | 34      | 2                        | 56     | 305          |
| 1889  | 108       | 135           | 13       | 256    | 22          | 27      | 2                        | 51     | 307          |
| 1890  | 105       | 140           | 10       | 255    | 21          | 25      | 2                        | 48     | 303          |
| 1891  | 101       | 134           | 10       | 245    | 21          | 27      | 2                        | 50     | 295          |

The six Ordinary Members the loss of whom by death during the year we have to regret, were Dr. A Barclay, Mr. C. W. Baumgarten, Mr. John Boxwell, Dr. Ottakar Fiestmantila, Rájá Rajendralála Mitra and Lt.-Col. Sir O. B. St. John.

Intimation of one death amongst the corresponding members was received, *viz.*, Rev. H. Baker of E. Malabar. The number now stands at 6.

The lists of Special Honorary Members, Honorary Members, and Associate Members continue unaltered from last year, there having been no casualties; their numbers standing at 5, 24, and 8 respectively.

No members compounded for their subscription during the year.

## Indian Museum.

No presentations were made over to the Indian Museum.

The Indian Museum returned to the Society the gilt-seated figure of the Dharma Rájá of Bhootan which was transferred to them with the other collections of the Society's Museum.

There was only one change amongst the Trustees, caused by the

resignation of Mr. H. Beveridge in consequence of leaving India, and the Hon. Sir A. W. Croft was appointed to fill the vacant place.

The other Trustees on behalf of the Society were :—

Dr. A. F. B. Hoernle.

A. Pedler, Esq.

Dr. D. D. Cunningham.

C. Little, Esq.

#### Finance.

The accounts of the Society are shown in Statement No. 1 in the Appendix under the usual heads.

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

The Budget Estimate for 1891 was taken at the following figures :—  
Receipts Rs. 15,570—Expenditure Rs. 14,323.

The actual results were found to be :—Receipts 16,007-0-3. Expenditure Rs. 12,975-13-10.

The Receipts thus show an increase of Rs. 437-0-3 and the Expenditure a decrease of Rs. 1,347-2-2 on the Budget Estimate, leaving a balance in favour of the Society of Rs. 3,031-2-5.

The increase in Receipts is under the heads of Subscriptions and Sales of Publications. Subscriptions were estimated at Rs. 7,500, whilst the actuals were Rs. 7,786-8-10, the excess being due to some of the arrear subscriptions from members having been realized. Sales of Publications show an increase of Rs. 1,004-12-11. This large increase is due to the adjustment of Messrs. Trübner's accounts for 18 months, and of the unexpected sale of periodicals during the period.

As only 15 new members were elected, there is a reduction of Rs. 172 under the head of receipts from admission fees; and the difference between the estimated and actual miscellaneous receipts is due to the refund of income tax not yet having been granted.

On the expenditure side, the items, of "Books," "Binding" and "Printing of Circulars," &c., show an increase. Books were estimated at Rs. 1,800 whilst the actuals were Rs. 2,372-13-3, the increase being due to the adjustment of Messrs. Trübner's account for 18 months. Taking into account the period the amount covers, the expenditure on Books is within the Budget Estimate. Binding has increased by Rs. 51-15-3. This is due to the binding of some old books, which were required by members at the close of the year.

As new labels for sending the publications to Foreign Societies had to be printed, and a larger number of circulars than usual were required owing to the suggested alteration of rules there is an increase under this head of Rs. 55-2.

The actual expenditure on the Journal and Proceedings was as follows :—

|                      |   |                     |       |    |    |
|----------------------|---|---------------------|-------|----|----|
| <i>Journal</i>       | { | <i>Part I.</i> —Rs. | 860   | 4  | 0  |
|                      |   | <i>Part II.</i> —   | 2,752 | 13 | 11 |
| <i>Proceedings</i> — |   |                     | 814   | 13 | 0  |
|                      |   |                     | 4,427 | 14 | 11 |

making a total of Rs. 4,427 14 11

which is less than the Budget Estimate by Rs. 772-1-1.

The Budget Estimate of Ordinary Receipts and Expenditure for 1892 has been fixed as follows :—Receipts Rs. 14,988. Expenditure Rs. 13,378.

On the receipts side the estimate for “Subscriptions” has been reduced by Rs. 100, taking into account the number of members elected last year. Miscellaneous has been increased by Rs. 218 as the proceeds of the sale of duplicate coins of the Society at various times since 1887 have been received this year.

On the expenditure side, the items of “Petty repairs” and “Binding” have been slightly increased.

During the greater part of the past year the appointment of Assistant-Librarian has been vacant. This vacancy will probably be filled up during the present year, but there will still be a considerable reduction in salaries. The estimate is Rs. 3,400.

Stationery has been reduced by Rs. 20 as the expenditure of last year has been smaller than usual.

The details of the Budget Estimate are as follows :—

#### RECEIPTS.

|                          |     |     |     |     |           |        |   |   |
|--------------------------|-----|-----|-----|-----|-----------|--------|---|---|
| Subscriptions            | ... | ... | ... | Rs. | 7,400     | 0-     | 0 |   |
| Sale of Publications     | ... | ... | ... | ... | 400       | 0      | 0 |   |
| Interests on Investments | ... | ... | ... | ... | 5,388     | 0      | 0 |   |
| Rent of Rooms            | ... | ... | ... | ... | 720       | 0      | 0 |   |
| Miscellaneous            | ... | ... | ... | ... | 1,080     | 0      | 0 |   |
|                          |     |     |     |     | Total Rs. | 14,988 | 0 | 0 |

#### EXPENDITURE.

|            |     |     |     |     |                  |       |   |   |
|------------|-----|-----|-----|-----|------------------|-------|---|---|
| Salaries   | ... | ... | ... | Rs. | 3,400            | 0     | 0 |   |
| Commission | ... | ... | ... | ... | 400              | 0     | 0 |   |
| Stationery | ... | ... | ... | ... | 80               | 0     | 0 |   |
| Lighting   | ... | ... | ... | ... | 80               | 0     | 0 |   |
|            |     |     |     |     | Carried over ... | 3,960 | 0 | 0 |

|                         |     |     |     |                     |        |   |   |
|-------------------------|-----|-----|-----|---------------------|--------|---|---|
|                         |     |     |     | Brought forward Rs. | 3,960  | 0 | 0 |
| Petty Repairs           | ... | ... | ... | 25                  | 0      | 0 |   |
| Municipal Taxes         | ... | ... | ... | 819                 | 0      | 0 |   |
| Postage                 | ... | ... | ... | 700                 | 0      | 0 |   |
| Freight                 | ... | ... | ... | 10                  | 0      | 0 |   |
| Meeting                 | ... | ... | ... | 83                  | 0      | 0 |   |
| Contingencies           | ... | ... | ... | 150                 | 0      | 0 |   |
| Books                   | ... | ... | ... | 1,800               | 0      | 0 |   |
| Local Periodicals       | ... | ... | ... | 31                  | 0      | 0 |   |
| Binding                 | ... | ... | ... | 500                 | 0      | 0 |   |
| Journal, Part I         | ... | ... | ... | } 4,200             | 0      | 0 |   |
| Journal, Part II        | ... | ... | ... |                     |        |   |   |
| Proceedings             | ... | ... | ... | 1,000               | 0      | 0 |   |
| Printing Circulars &c., | ... | ... | ... | 100                 | 0      | 0 |   |
|                         |     |     |     | <hr/>               |        |   |   |
|                         |     |     |     | Total Rs.           | 13,378 | 0 | 0 |
|                         |     |     |     | <hr/>               |        |   |   |

#### London Agency.

Messrs. Trübner's Statement of Accounts with the Society for 1889 and the first half of 1890, were received during the year. The statement shews a debit balance of £ 242-13-1½, of which £ 200 was remitted in May 1891, leaving a net balance of £ 42-13-1½ on the transactions of the year and a half.

The sales of the Society's publications effected by Messrs. Trübner during the period amounted to £ 79-1-10 and of the Bibliotheca Indica to £ 36-2-7½.

The numbers of copies of parts of the Journal, of the Proceedings, and of the Bibliotheca Indica sent to the agents during 1891 for sale were 270, 250, 330, respectively, valued at Rs. 818-6.

Seven 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 £ 55-8-3.

#### Library.

The total number of volumes, or parts of volumes, added to the Library during the year was 1,874, of which 549 were purchased, and 1,325 presented or received in exchange for the Society's publications.

#### Publications.

There were published during the year eleven numbers of the Proceedings containing 194 pages of letter press and 3 plates; three numbers of the Journal, Part I, containing 218 pages of letter press and 9 plates; and four numbers of the Journal, Part II, containing 330

pages of letter press and 6 plates. The Annual Address of the President was printed separately from the Proceedings and contained 52 pages of letter press. One number of the late Mr. Atkinson's Catalogue of the *Insecta* of the Oriental Region issued as Supplement No. 2 to Part II of 1890, containing 139 pages of letter press; and the Index to the Journal, Part II for 1890 were also published.

#### **Coin Cabinet.**

During the year 103 coins were added to the Cabinet, of which 2 were of gold, 72 of silver, 28 of copper and 1 of mixed copper and silver. 97 of these coins were acquired under the Treasure Trove Act. The other 6 were presented by the Government of Bombay under the same Act. They comprise 12 Pathán, 30 Mughal, 5 Bengal, 28 Jaunpur, 9 Gujarátí, 6 Durrání, 6 Indo-Sassanian, 1 Sikh, 1 Old English, 1 Baroda, 1 Central Asian, 1 Fanam, 1 Padmatanka coins, besides one of uncertain ascription. Detailed notices of nearly all of them will be found in the Society's Proceedings for August and November.

#### **Office of Secretaries.**

Dr. Hoernle returned from leave in March and took charge of the duties of Philological Secretary from Mr. Tawney who had agreed to carry on the work till Dr. Hoernle's return.

Mr. Sclater carried on the duties of Natural History Secretary and Editor of the Journal, Part II during the year except for the month of December when he resigned owing to his leaving India, and Dr. Walsh was appointed in his place.

Dr. W. King carried on the duties of Treasurer during the year except for one period of about one month when he had to leave Calcutta on duty and Mr. Sclater took charge of the work during his absence.

Mr. Little carried on the duties of General Secretary throughout the year.

Mr. H. Ronaldson resigned the post of Assistant-Secretary and Librarian in March last and Mr. J. H. Elliott, the Assistant-Librarian, was appointed to officiate in addition to his own duties.

There were no changes in the posts of Cashier, Pandit and Copyist, which were held by the permanent incumbents Bábu Nritya Gopal Basu, Pandit Hari Mohan Vidyábhúsan and Bábu Joges Chandra Chatterjee respectively.

#### **Bibliotheca Indica.**

Thirty-four fasciculi were published during the year, of which 11 were in the Arabic-Persian, 20 in the Sanskrit, and 3 in the Tibetan series.

They belong to 20 different works of which 4 are in Arabic-Persian, 14 in Sanskrit and two in Tibetan. There were only three new publications one in the Arabic-Persian and two in the Sanskrit series, *viz.*, A commentary on Ten Ancient Arabic Poems and English translations of Aniruddha's Commentary on the Sámkhya Sútras and of the Ain-i-Akbári. Three works only were completed, namely, the Brihan-Náradíya Purána, the Nirukta and the Táríkhi-Firuz Sháhí. Of these 34 fasciculi, 9, belonging to four works, are translations into English and the rest are editions of texts. The five fasciculi of the Ain-i-Akbári completes, as was expected last year, the English translation of the Second Volume.

In the Annual Report for 1891 it was estimated that 36 fasciculi would be issued, the actual out-turn has been less by two. During the course of the year it was found that the Oriental Publication Fund was publishing more works than it could meet the cost of, and the editors were accordingly requested to proceed slowly with their work till the liabilities were paid off. The expenditure out of the Oriental Fund during the year was Rs. 12,378, which includes printing charges for 23 and editing charges for 26 fasciculi, which gives an average of Rs. 506 for each fasciculus. If 24 fasciculi are published during the year 1892 there will be no difficulty in meeting current expenses as well as paying off old debts.

No new works were sanctioned for publication during the year.

The following are the works already taken in hand of which no fasciculi appeared during the year :—

(1) Tabakati-Násírí (index of persons and places); (2) Prákrita Lakshana, (English translation and notes); (3) Kátantra (introduction); (4) Apastamba Sranta Súra (Text); (5) Lalita Vistara (English translation); (6) Brihaddharma Purána; (7) Taittiríya Samhitá.

Of the following works sanctioned in previous years, no fasciculi have appeared as yet :—

(1) Prákritádhyáya (Text and translation); (2) Charaka (English translation with notes); (3) Naqaid-ul-Farazdag-Jerir (Text with English translation in prose and verse); (4) Kála Viveka (Text); (5) Vedánta Súra Commentaries on, (Text); (two of these, *viz.*, Anubhāshyam and Śrībhāshyam have been commenced); (6) Karaṇa Grantha (Text); (7) Muntakhub-ut-Tawárikh, Vol. I (English translation); (8) Taj-ul Ma'ásir (Text); (9) Táríkhi-i-Wassaf (Text); (10) Tarikh-i-Yamini (English translation with notes); (11) Jnátádharma Kathá Súra and Vipáka Súra (Text); (12) Saddharma Puṇḍaríka (Text); (13) Svayambhú Purána (Text); (14) Bhattotpála's commentary on Varáha Mihira's Brihat Samhitá.

The following is a descriptive list of the publications during 1891 :—

*A. Arabic and Persian Series.*

1. *Máasúr-ul-Umárá* or Memoirs of the nobles of the Mughal Court of Delhi by a nobleman of that Court during the early part of the last century. Biographical notices of the great officers of the great Mughal from the time of Baber to the author's own time. Edited by Maulavi Mirza Ashraf Ali of the Calcutta Madrasah, Nos. 784, 791, 797 and 804. Vol. III, Fasc. VII, VIII, IX and X.

2. *Tárikh-i-Firúz Sháhí*, a history of the reign of Firúz Sháh Tughluq of the Tughluq dynasty of Delhi by Shams-i-Siráj-Affif has come to a close. One fasciculus only. No. 809, Fasc. VI. This is to be distinguished from the work of Ziyá-i-Baraní.

3. A Commentary by Abú-Zakariyá Yahyá At-Tibrízí on Ten Ancient Arabic Poems. All of which belong to pre-Muhammudan times, Edited from the MSS. of Cambridge, London and Leyden, by Charles James Lyall Esq., C. S. No. 789, Fasc. I.

4. The *Áin-i-Akbári* is a well-known work in Persian compiled under the order of Emperor Akbar by his friend Abul Fazl, containing the History, Geography and the System of Administration of the Empire of Delhi. Translated from the Original Persian by Col. H. S. Jarrett, Nos. 781, 786, 798, 805, and 811. Vol. II. Fasc. I, II, III, IV, and V. These complete the second volume. The Editor has given an alphabetical index of all the proper names to be found in this volume.

*B. Sanskrit Series.*

1. *Brihad Devatá*, a very ancient work attributed to Saunaka Acháryya. It is an index to the Rig-Veda giving the *devatá* or deity to every *rik*. Edited by the Late Rájá Rájendralála Mitra. No. 794, Fasc. III. The Rájá added the *Arshánukramaṇi* and the *Chhandonukramaṇi* to the work in the form of appendices.

2. *Chaturvarga Chintámaṇi* by Hemádri the oldest Smriti compilation yet received; the *Kámadhenu* and others being known only by name. It was compiled when Southern India had not yet fallen into the hands of the Muhammadans. Edited by Paṇḍits Kámákhyánáth Tarkavágísha and Jogeśvara Smritiratna, Nos. 790, 803, Vol. III, Part II, Fasc. VIII and IX.

3. *Madana Párijáta*, a system of Hindu Law, edited by Paṇḍit Madhusúdana Smritiratna was compiled in the fourteenth century at *Kásthá* near Delhi under the patronage of a local chief named Madana Pála, No. 796, Fasc. IX.

4. *Nyáya Kusumánjali Prakaraṇam* by Udayanácháryya, edited



by Mahámahopádhyáya Chandrakánta Tarkálankára. It is accompanied with the commentary entitled *Prakáśa* by Bardhamána, illustrated by extracts from the gloss by Ruchidatta, No. 785, Vol. II, Fasc. II.

5. Parásara Smṛiti by the same distinguished editor is accompanied with the commentary of Mádhavácháryya. It is a standard work of Hindu Law in Southern India, Nos. 779, 792 and 793, Vol. II, Fasc. V and Vol. III, Fasc. III and IV. The second volume has not yet come to a close.

6. Brihannáradíya Puráṇa, edited by Paṇḍit Hrishíkēśa S'ástrí has come to a close. The editor has given a preface in English and a summary of the contents of the work in Sanskrit prose, No. 780, Fasc. VI.

7. S'ámkháyana S'rauta Sútra, edited by Dr. Alfred Hillebrandt, Professor of Sanskrit in the University of Breslau, has come to the end of the second volume which contains the commentary by Anartíya, the son of Baradatta, up to the eighth chapter of the text, No. 795, Vol. II, Fasc. IV.

8. S'rí Bháshyam, a commentary on the Vedánta Sútras by Rámánujácháryya, the great Vaishnava teacher of Southern India, who flourished in the thirteenth century A. D., and preached a modified form of the non-dual theory, edited with notes by Paṇḍit Rámnáth Tarkaratna, the travelling Paṇḍit attached to the operations in search of Sanskrit MSS. in Bengal, No. 790, Fasc. III.

9. Tattva Chintámaṇi, the standard work on Hindu Logic in India under the editorship of Paṇḍit Kámákhyanáth Tarkavágíśa of the Calcutta Sanskrit College has advanced by three fasciculi of the second volume which treats of Inference. Nos. 783, 800, and 803, Vol. II, Fasc. VII, VIII and IX.

10. Aṇu Bháshyam, a commentary on the Vedánta Sútras by Ballabhácháryya, the great Vaishnava Preacher of Western India, who flourished during the sixteenth century A. D. His theory was a curious modification of the non-dual theory called dual-non-dual theory. Edited by Paṇḍit Hem Chandra Vidyaratna. No. 806, Fasc. II.

11. Aniruddha's Commentary and the original portions of Vedántin Mahádeva's Commentary to the Sámkhya Sútras, translated by Dr. Richard Garbe, Professor of Sanskrit in the University of Königsburg, has advanced by two fasciculi, Nos. 782 and 812. Fasc. I and II.

12. The Márkaṇḍeya Puráṇa, one of the Mahápuráṇas or great repositories of law, ritual and tradition of the Hindus, translated by F. E. Pargiter, B. A., C. S., has advanced by one fasciculus, No. 810, Fasc. IV.

13. The English translation of the Suśruta Saṃhitá was in abeyance since the death of its first editor Bábu Udaychánd Datta. It has

now been taken up by Dr. Aghoranáth Chattopádhyaýa who has published only one fasciculus. No. 802, Fasc. III.

The Nirukta with its commentaries by Devarája Yajvá and Durgá-cháryya has come to a close. The editor Paṇḍit Satyavrata Sámaśramí has appended several indices and a learned preface in Sanskrit to it. No. 801, Vol. IV. Fasc. VIII.

(C). *Tibetan Series.*

1. Sher Phyin edited by Bábu Pratápa Chandra Ghosha, which is a Tibetan translation of the Sata Sáhasriká Prajná Páramitá with the lengthy repetitions omitted, has advanced by two Fasciculi, No. 787 and 813, Vol. II, Fasc. II and III.

2. Pagsam Thi Sin is a prose summary of the Avadána Kalpalatá in modern and popular Tibetan, edited by Bábu Sarat Chandra Dás, O. I. E., No. 788, Fasc. II.

*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 nothing has been sent in return.

\* Allahabad :—Editor, Pioneer.

† Amsterdam :—Royal Zoological Society.

\* ————— :—Koninklijke Akademie van Wetenschappen.

\* Angers :—Société d' Etudes Scientifiques d' Angers.

\* Baltimore :—Johns Hopkins University.

\* Batavia :—Society of Arts and Sciences.

\* ————— :—Kon Natuurkundige Vereeniging in Nederlandsch-Indië.

\* Berlin :—Gesellschaft Naturforschende Freunde zu Berlin.

\* ————— :—Royal Academy of Sciences.

§ ————— :—Entomologische Verein.

† Berne :—Société Suisse d' Entomologie.

\* Bombay :—Anthropological Society.

\* ————— :—Bombay Branch, Royal Asiatic Society.

\* ————— :—Editor, Indian Antiquary.

\* ————— :—Editor, Times of India.

- \* Bombay :—Natural History Society.
- \* Bordeaux :—L' Académie Nationale des Sciences, Belles-Lettres et Arts.
- \* ——— :—Société Linnéenne.
- \* Boston :—Natural History Society.
- § ——— :—American Philological Association.
- § Brisbane :—Royal Geographical Society of Australasia, Queensland Branch.
- † Brookville :—Society of Natural History.
- † Brunswick :—Verein für Naturwissenschaft.
- † Brussels :—L' Académie Royale des Sciences.
- † ——— :—Musée Royal d' Histoire Naturelle de Belgique.
- † ——— :—Société Entomologique de Belgique.
- \* ——— :—Société Royale Malacologique de Belgique.
- \* Buda Pest :—Royal Hungarian Academy of Sciences.
- \* Buenos Ayres :—National Museum.
- † ——— :—Academia Nacional de Ciencias de la Republica Argentina.
- † Caen :—Société Linnéenne de Normandie.
- † Calcutta :—Agri-Horticultural Society of India.
- \* ——— :—Geological Survey of India.
- \* ——— :—Editor, Englishman.
- \* ——— :—Editor, Indian Daily News.
- § ——— :—Editor, Indian Engineering.
- \* ——— :—Editor, Indian Mirror.
- \* ——— :—Indian Museum.
- † ——— :—Mahommedan Literary Society.
- § ——— :—Photographic Society of India.
- \* ——— :—Survey of India.
- \* ——— :—Tuttobodhini Shova.
- † ——— :—University Library.
- † Cambridge :—University Library.
- † Cassel :—Der Verein für Naturkunde.
- † Cherbourg :—Société Nationale des Sciences Naturelles.
- \* Christiania :—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 der Universität.
- \* Dresden :—Entomologischen Vereins "Iris."
- † ——— :—Königlichen Zoologischen und Anthropologisch-Ethnographischen Museums 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 Psicologia Comparata.
- \* ——— :—Società Africana d' Italia.
- \* Frankfurt :—Senckenbergische Naturforschende Gesellschaft.
- \* ——— :—Naturwissenschaftlichen Vereins des Regierungsbezirks.
- † 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.
- § Hague :—Koninklijk Instituut voor de Taal-Land-en Volkenkunde van Nederlansch-Indië.
- \* Hamburg :—Naturhistorisches Museum zu Hamburg.
- † ——— :—Naturwissenschaftlichen Verein.
- † Halle :—Deutsche Morgenländische Gesellschaft.
- \* ——— :—Kaiserlichen Leopoldinisch-Carolinische Akademie.
- \* Hamilton (Canada) :—Hamilton Association.
- \* Havre :—Société de Géographie Commerciale du Havre.
- † Helsingfors :—Societas pro Flora et Fauna Fennica.
- \* ——— :—Société des Sciences de Finlande.
- § Ithaca (U. S. A.) :—Cornell University.
- § Jassy :—Societății Stintifice Literare.
- \* Kiev :—Société des Naturalistes.
- \* Königsberg :—Die physikalische-Oekonomische Gesellschaft.
- \* Lahore :—Editor, Civil and Military Gazette.
- † ——— :—Agricultural Society.
- § Leipzig :—Deutsche Morgenländische Gesellschaft.
- † Leyden :—Royal Herbarium.
- \* Liège :—Société Géologique de Belgique.
- † ——— :—Société des Sciences.
- † Liverpool :—Literary and Philosophical Society.
- \* London :—Anthropological Institute.
- \* ——— :—Editor, Academy.
- \* ——— :—Editor, Athenæum.
- \* ——— :—British Museum.
- \* ——— :—Geological Society.
- † ——— :—Institution of Civil Engineers.
- \* ——— :—Institution of Electrical Engineers.

- \* London:—Institution of Mechanical Engineers.
- \* ——— :—Editor, *Nature*.
- \* ——— :—Linnean Society.
- \* ——— :—Royal Asiatic Society of Great Britain and Ireland.
- \* ——— :—Royal Astronomical Society.
- \* ——— :—Royal Geographical Society.
- \* ——— :—Royal Institution of Great Britain.
- \* ——— :—Royal Microscopical Society.
- \* ——— :—Royal Society.
- \* ——— :—Statistical Society.
- \* ——— :—Zoological Society.
- † Lyons:—La Société d' Agriculture, d' Historie Naturelle et des Arts Utiles.
- † ——— :—Muséum d' Histoire Naturelle.
- \* ——— :—La Société d' Anthropologie.
- \* Madras:—Literary Society.
- \* ——— :—Government Central Museum.
- \* Manchester:—Literary and Philosophical Society.
- \* Mendon, Ill :—Editor, *American Antiquarian and Oriental Journal*.
- \* Mexico:—Sociedad Científica " Antonio Alzate."
- § ——— :—Observatorio Meteorológico-Magnético Central.
- \* Moscow:—Société Imperiale des Naturalistes.
- \* Munich:—K. Bayerische Akademie der Wissenschaften.
- \* Naples:—Società Africana d' Italia.
- \* New Haven:—Connecticut Academy of Arts and Sciences.
- § ——— :—American Oriental Society.
- \* Newport (R. I. ):—Natural History Society.
- \* New York:—American Museum of Natural History.
- † Ottawa:—Geological and Natural History Survey of the Dominion of Canada.
- † Oxford:—Bodleian Library.
- † ——— :—Indian Institute.
- \* Paris:—Société de Géographie.
- \* ——— :—Société d' Anthropologie.
- \* ——— :—Société Asiatique.
- § ——— :—Revue Géographique.
- \* ——— :—Musée Guimet.
- † ——— :—National Library.
- \* ——— :—Société Zoologique.
- \* ——— :—Société Académique Indo-Chinoise.
- \* ——— :—Museum d' Historie Naturelle.
- \* Philadelphia:—Academy of Natural Sciences.

- \* Philadelphia:—Journal of Comparative Medicine and Surgery.
- \* Pisa:—Società Toscana di Scienze Naturali.
- § Prague:—K. K. Sternwarte.
- § Rio de Janeiro:—Museu Nacional.
- § —————:—Imperial Observatorio.
- § Rome:—Società degli Spettroscopisti Italiani.
- § Roorkee:—Editor, Indian Forester.
- \* St. Petersburg:—Comité Géologique.
- † —————:—Imperial Library.
- \* —————:—Russian Geographical Society.
- \* —————:—Académie Impériale des Sciences.
- † —————:—Jardin Impériale de Botanique.
- † San Francisco:—Californian Academy of Arts and Sciences.
- \* Santiago:—Deutsche Wissenschaftliche Vereines.
- § 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.
- \* Sydney:—Royal Society of New South Wales.
- \* —————:—Linnean Society of New South Wales.
- § Taiping:—Government of Perak.
- \* Toronto:—Canadian Institute.
- \* Tokyo:—Imperial University of Japan.
- \* —————:—Deutsche Gesellschaft für Natur-und Völkerkunde Ostasiens.
- \* Trieste:—Società Adriatica di Scienze Naturale.
- † —————:—Museo Civico di Storia Naturale.
- \* Turin:—Reale Accademia delle Scienze.
- † Ulwar:—Ulwar Library.
- \* Vienna:—Anthropologische Gesellschaft.
- \* —————:—K. K. Akademie der Wissenschaften.
- \* —————:—K. K. Geologische Reichsanstalt.
- \* —————:—K. K. Naturhistorische Hofmuseums.
- \* —————:—K. K. Zoologisch-Botanische Gesellschaft.
- † —————:—Ornithologische Verein.
- † Washington:—Commissioners of the Department of Agriculture.
- \* —————:—Smithsonian Institution.
- \* —————:—United States Geological Survey.
- † —————:—United States National Museum.
- \* Wellington:—New Zealand Institute.

- † Württemberg :—Natural History Society.  
\* Yokohama :—Asiatic Society.  
\* Zagreb :—Archæological Society.
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ABSTRACT OF PROCEEDINGS OF COUNCIL DURING 1891.

*January 26th, Ordinary Meeting.*

A letter from the Registrar and Superintendent of Records, India Office, London, with reference to a proposal to publish Major Francklin's Journal of a route from Rajmehal to Gour, either by the Secretary of State or the Asiatic Society was recorded.

At the request of Captain A. Brame, his election as a member of the Society was cancelled.

An offer from the Honorary Secretary to the Trustees, Indian Museum, to return to the Society the gilt-seated figure of the Dharma Rája of Bhootan which was transferred to the Museum with other collections of the Society's Museum was accepted. The figure is now placed on the staircase.

Read a letter from General R. Maclagan suggesting that the Society's Journals and Proceedings should be issued monthly in continuous numbers under one single title like the Society's Journal in its earlier years. It was resolved to thank General Maclagan, and to inform him that it was impossible to accept his suggestion.

Mr. J. H. Rivett-Carnac in reply to his letter forwarding an extract from Sir A. Cunningham's letter suggesting that the Society should publish some of the coins and particularly a large round copper coin of Vonones and Azes and a Tetradrachin of Antimachus, was informed that though a search had been made, the coins had not been found. Dr. Hoernle was expected shortly to return when the coins would probably be found.

Mr. C. H. Tawney reported that he had purchased the coins offered for sale by Mr. J. G. Delmerick and that on Dr. Hoernle's return if he thinks it advisable he would make them over to the Society.

On the recommendation of the Finance Committee it was ordered to remit £ 200 to Messrs. Trübner and Co. in payment of their account.

An offer from Mr. B. N. Dé to undertake the translation of the *Siyar-ul-Mutakherin* for the *Bibliotheca Indica* was declined.

Mr. H. Beveridge resigned his Trusteeship of the Indian Museum on behalf of the Society, and the Hon. Sir A. W. Croft was nominated in his place.

With reference to Council order that the Society's publications are now being sent to Mofussil Members as soon as published, it was decided that a similar course be followed with regard to Societies and Members in Europe.

*February 11th, Special Meeting.*

Mr. H. Ronaldson resigned the Assistant-Secretaryship of the Society in March and Mr. J. H. Elliott, the Assistant-Librarian, was appointed to officiate in addition to his own duties.

*February 26th, Ordinary Meeting.*

A letter from Mr. E. M. Thompson, of the British Museum, conveying the special thanks of the Trustees to the Government of the Central Provinces, and the Asiatic Society of Bengal for the valuable addition to the Museum collections of the Treasure Trove Gold Coins from Hoshangabad was recorded.

Permission was given to Dr. J. H. Tull Walsh to bring forward his proposal, that two sections be formed, and that these sections meet on separate evenings.

The Secretary, Punjab Library, Lahore, was informed in reply to his application that the publication of the Lepidoptera had been completed in 3 parts, and that it was not the custom of the Society to present copies except in exchange.

It was ordered to subscribe to one copy of the monthly periodical entitled "North Indian Notes and Queries."

The various Committees for the ensuing year were elected.

It was decided not to take any further steps regarding the payment of subscriptions annually in advance and the procedure for collecting arrear subscriptions.

On the recommendation of the Library Committee, several books were ordered to be purchased for the Library.

On the recommendation of the Natural History Secretary, an exchange of Part II of the Journal for the publication of the Museo Civico di Storia Naturale, Trieste, was sanctioned.

The first part of a Catalogue of Oriental Diptera prepared by Mons. Bigot at the request of the late Mr. Atkinson, submitted by the Natural History Secretary, was ordered to be read at the next monthly meeting.

On the recommendation of the Finance Committee, it was agreed to circulate to Resident Members that the permission given to invest Rs. 50,000 in Municipal or Port Trust Debentures, be extended, with a view to include the alternatives of fixed deposits in Calcutta Banks.

The Cashier was granted, as a special case, half pay for 35 days absence on sick leave.



The Copyist was granted an increase of pay of three rupees for the present year and two rupees for the following year.

*March 4th, Special Meeting.*

It was decided to issue a circular requesting members to record their votes on the proposed withdrawal of the sum of Rs. 50,000 from the Government 4 per cent. loan and on the mode of re-investment.

*March 26th, Ordinary Meeting.*

Read a letter from Messrs. Trübner and Co. offering to return the bulk of the Society's publications in stock, and suggesting that it would be better to regard all goods supplied to them as actually sold with the reservation that they may, upon return of a certain percentage of copies, obtain credit on settlement. It was resolved to ask Messrs. Trübner and Co. for further particulars as to the number of copies of specified publications they are prepared to receive and the proportion they wish to have the right of returning, and after what interval of time.

It was ordered that the Indian Museum be charged with the cost price for the printing of the extra copies of the late Mr. Atkinson's Catalogue of the Insects of the Oriental Region.

A report from the Philological Secretary on four Treasure Trove Coins found in the Hardoi District, was ordered to be read at the next monthly meeting.

Dr. Hoernle returned from furlough and relieved Mr. Tawney of the Philological Secretaryship to the Society.

The accounts of the Society for 1890 were audited by Messrs. Mengens and King.

*April 30th, Ordinary Meeting.*

In reply to Dr. J. Anderson's letter complaining of the non-receipt of some of the Society's publications, he was informed that the numbers missing were sent along with other publications of the Society which appeared to be amongst his numbers.

In reply to Kumar Rameswar Maliah's letter proposing that the Bibliotheca Indica series should be distributed to the members with the Society's Journal, he was informed that his proposal could not be entertained.

Dr. Walsh was asked to accept a seat on the Council of the Society in the place of Dr. Cunningham, who had resigned, owing to his approaching departure for Europe.

Dr. Cunningham's resignation as a Trustee of the Indian Museum on behalf of the Society was not accepted.

With regard to the publication of the Oriental Publication Fund, the following resolutions were passed :—

“The Secretary to write a letter to the Editors informing them that the funds in hand were insufficient to carry on publications at the present rate and requesting them to send no more manuscript to the press during the present year, except in accordance with instructions to be furnished them; and to the Printers asking them to finish the forms in hand and to set up no more until further instructions.”

“Government Promissory Notes for Rs. 2,000 of the Sanskrit Manuscript Fund may be sold and the amount advanced to the Oriental Publication Fund to pay the Baptist Mission Press for printing the *Bibliotheca Indica*.”

“The sum of Rs. 50 sanctioned by Council for a Tibetan Pandit to assist Bâbu Pratapa Chundra Ghosha, be discontinued from the commencement of the ensuing month.”

In the event of the proposal to place Rs. 50,000 in fixed deposit in Calcutta Banks not being declared carried at the next General Meeting, the Council agreed to recommend that the proposal to invest the money in Municipal Debentures be circulated for the votes of the general body of members.

#### *May 23th, Ordinary Meeting.*

The name of Rev. H. Baker, a corresponding member of the Society, was removed from the list of members, as he had died many years ago.

An offer from Messrs. Trübner and Co. to receive 10 numbers of *Bibliotheca Indica*, 30 of the *Journal* and 20 of the *Proceedings* with the reservation to have the right of returning 10 per cent. of the copies ordered, was accepted. With regard to back stock it was decided that they be asked how much there still remained unsold.

In reply to an offer by Major J. H. Sadler to bring out an edition of the commentary of Sheikh Badr-uddin on the *Alfizzah* of Ibn Malik, it was explained that the present condition of the Oriental Publication Fund admitted of no new works being undertaken for 3 years.

Dr. Walsh's acceptance as a Member of Council was ordered to be announced at the next monthly meeting.

Intimation of the death of Mr. C. W. Baumgarten of Batavia, a member of the Society, was ordered to be recorded in the *Proceedings*.

A paper by Mr. H. J. Rainey entitled “a short note on a strange fiery hot-blast in the District of Khulna,” was ordered to be read at the next monthly meeting.

Permission was granted to circulate to the general body of members

the proposal regarding the re-investment of Rs. 50,000 in Municipal Debentures.

Bábu Pratapa Chandra Ghosha was allowed to exchange certain numbers of the Bibliotheca Indica.

*June 25th, Ordinary Meeting.*

An offer to exchange publications from Mr. C. L. Herrick, forwarded with the first number of the Journal of Comparative Neurology was declined.

Sanction was given to Dr. P. Horn to purchase certain works of the Bibliotheca Indica at a reduction of 50 per cent.

In reply to Mr. A. Constable's letter expressing his willingness to undertake the publication of one or two volumes of "Selections" from the records of the Society, he was informed that the Council were willing to entertain his proposal regarding the selections but would desire to be furnished with details and to know whether it would be entirely at his own expense.

An offer from Mr. A. Constable to act as Agent in London for the Society was declined.

On the recommendation of the Natural History Secretary sanction was accorded to an exchange of publications with the Société Linnéenne de Normandie.

An offer from Grossh Badische Universitäts-bibliothek, Heidelberg, forwarding the first number of "Neue Heidelberger Jahrbucher" and asking for an exchange of publications was declined.

Presentation of a small book and pamphlet entitled "Memoirs of Tahmasp" by Dr. P. Horn, was acknowledged, with thanks.

An application from the Cashier for an increase of pay was refused.

*July 11th, Special Meeting.*

It was decided that instructions be given to the Bank of Bengal to purchase Municipal Debentures to the nominal value of Rs. 50,000 as opportunities arise, and to sell out from time to time from the invested funds of the Society, Government paper sufficient to pay for such purchases as they are made. Preference should be given to Municipal Debentures of longest currency.

*July 30th, Ordinary Meeting.*

In reply to Mr. C. J. Rodger's letter suggesting that the coin collection of the Society should be amalgamated with that at the Indian Museum with a view of cataloguing and arranging them, he was informed that the Council had decided to wait until the Catalogue of coins

in the Indian Museum had been completed so that the two collections might be compared.

A letter from the Under-Secretary to the Government of India, Home Department, enquiring whether any person connected with the Society would be willing to continue the researches so ably begun by Lt.-Col. Godwin-Austen "On the Land and Fresh Water Mollusca of India," was ordered to be read at the next monthly meeting.

A letter from Mr. A. Constable submitting certain suggestions and queries regarding the publication of "Selections" from the records of the Society, was deferred till next meeting.

In reply to Mr. Rivett-Carnac's letter asking for the loan of a gold Gupta coin, he was informed that in accordance with the practice of the Society, unique coins are not sent out from the Society's possession.

On the death of Rájá Rajendralála Mitra, the following resolution was passed :—

"The Council desire to place on record their deep sense of the very great loss the Asiatic Society of Bengal and Oriental Learning have sustained by the death of their former President and Vice-President Rájá Rajendralála Mitra and to express their great sorrow at the sad event that has deprived the Society of a most learned and distinguished supporter, who has been closely connected with it for nearly half a century ; and the Council of a much esteemed colleague."

It was ordered that a copy of the Resolution be forwarded to Dr. Mitra's son with a letter of condolence signed by all the members of Council.

Presentation of a paper entitled "Die Vikrama Aera" by Professor F. Kielhorn was acknowledged, with thanks.

The purchase of a so-called "Idol-Car" from Babu Taruk Nath Roy for the Society was sanctioned.

It was decided to ask Mr. Tawney to represent the Society as a delegate at the Ninth International Congress of Orientalists to be held in London in 1892.

In consequence of Dr. Mitra's death, Pandit Haraprasad Shastri was invited to carry on the duties of the Sanskrit MS. Fund.

On the recommendation of the Philological Secretary sanction was given to send "Mahit Sarakhri" an Arabic manuscript, to Moulvie Syed Suddudhin Ahmed.

Read a letter from the Punjab Government enquiring whether the Society could place them in communication with any capable numismatist who would be able to value Mr. Rodger's collection of coins. It was resolved to inform the Punjab Government that Dr. Hoernle was willing to do the work provided his expenses were defrayed.

*August 27th, Ordinary Meeting.*

On the recommendation of the Philological Secretary, it was ordered that all the available numbers of the Bibliotheca Indica and the future numbers as published be presented to the Oriental Seminary of the Bonn University.

A letter from the Deputy Secretary and Treasurer, Bank of Bengal, stating that neither  $4\frac{1}{2}$  per cent. nor 5 per cent. Calcutta Municipal Debentures are procurable in the market, was recorded.

The Council approved the Philological Secretary's suggestion to send to Mrs. Marx and the Rev. Dr. Dalman copies of both papers by the late Dr. Karl Marx of Leh Ladakh.

*September 24th, Ordinary Meeting.*

Dr. Hoernle was allowed to have the reserve copy of fasc I of Nitisara to complete his volume.

The Council approved the recommendation of the Finance Committee to purchase the 2nd Vol. of Cesnola's Cypriote Antiquities, price £10/10 for the Library.

An obituary notice of the death of Dr. Barclay was ordered to be read at the next monthly meeting.

Pandit Hárprasad Shastri received an advance of Rs. 1,000 for the probable purchase of manuscripts at Benares.

*October 29th, Ordinary Meeting.*

Brefeld's Mykologie, price Rs. 50, was ordered to be purchased for the Library.

Mr. W. Theobald was informed, in reply to his letter, that the charge for printing his extra copies supplied in addition to the author's copies, was according to the usual rate.

An application from Mr. J. C. R. Johnstone asking on behalf of the Calcutta Musical Association for permission to be allowed to hold their meeting in the Society's room was declined.

*November 26th, Ordinary Meeting.*

It was ordered to supply the Secretary, Anthropological Society of Vienna, with the vols. of the Asiatic Researches and the Society's Journals asked for.

On the recommendation of the Philological Secretary, one copy of a History of the Sects of the "Ismailies" was ordered to be subscribed for.

Permission was given to Dr. Waddell to take out of the Library the two vols. of the Ajanta plates and Cunningham's "Stupa of Bharhut."

Permission was given to Babu P. C. Mookerjee to take out certain Library books, the Superintendent of the Indian Museum being responsible for their return.

On the proposed arrangement of Pandit Hara Prashad Shastri for conducting the operations in search of Sanskrit MSS. in Bengal the following orders were passed :—

I. The Office of Sanskrit MSS. be removed to the Asiatic Society's Rooms.

II. A gratuity of a year's pay be granted to Babu Upendra Lala Mitra on his retirement.

III. One Resident Pandit be appointed on Rs. 20 permanently.

IV. A second travelling Pandit be appointed on Rs. 30 up to 31st March 1893.

V. Pandit Ram Nath Tarkaratna be requested to explain why he did no work for  $2\frac{1}{2}$  years.

*December 31st, Ordinary Meeting.*

On the recommendation of the Philological Secretary one copy of each of the publications of the Oriental Translation Fund was ordered to be subscribed for.

The appointment of a temporary clerk on Rs. 30 for 6 months to catalogue the Library Books received during the years 1885-1890 was sanctioned.

The Council sanctioned the appointment of a clerk on Rs. 15 for the Store-room, if found necessary.

Dr. Hoernle's resignation as Philological Secretary and Member of Council was accepted and Mr. C. R. Wilson appointed in his place, Dr. Hoernle retaining the numismatic work. It was ordered that Mr. Wilson's name be substituted for Dr. Hoernle's at the next monthly meeting.

Dr. Walsh was appointed Natural History Secretary and Editor of Journal Part II in the place of Mr. Sclater resigned.

The lists of Office Bearers and Members of Council for the ensuing year were approved.

Intimation was received from the Superintendent of Stamps and Stationery that the Secretary of State for India had ceased to subscribe for 40 copies of each of the Society's publications from the commencement of 1892. It was decided to ask for a copy of the instruction under which the letter was written.

On an application from Lady Frankfort, permission was granted to hold an ambulance class for Ladies in the Society's room every Thursday between 12 noon and 1 p. m.

The Report having been read the President invited the meeting to put any questions or to offer any remarks which any member might think necessary in connection therewith.

No remarks having been offered the President moved the adoption of the report, and proposed a vote of thanks to the Honorary Secretaries and Treasurer for their exertions in behalf of the Society.

The motion was carried unanimously.

The PRESIDENT then addressed the meeting.

## ADDRESS.

The Report of the Council which has just been read supplies full information as to the working of the Society in 1891, and I think it may be regarded as fairly satisfactory. Compared with the previous six years, the figures for the last six show, it is true, a steadily downward tendency in the number of paying members; but this decline seems for the present to have been arrested, as the average number for the three years 1889 to 1891 is at any rate slightly higher than that of the previous three. However much this decline in the number of members from decade to decade may be regretted, it need cause us no surprise. The strain and pressure of official duties in India increase year by year; and the majority of public servants in this country find little leisure for the cultivation of those sciences and the pursuit of those researches which it is the object of this Society specially to foster. There is happily no diminution in the supply of papers read before the Society, or in their interest and value; but a Society constituted as this is lives not only by the papers read but by the subscriptions paid; and it is vitally affected by any cause that tends to reduce the number of those who, feeling a general interest in what has been performed by man or produced by nature within the continent of India, would naturally seek admission to our Society if fuller opportunities for stimulating that interest were afforded them in their daily life and work. But this is an old complaint, and one which it is beyond our power to mend.

The Society has lost several valued members by death during the past year.

**Obituary.**  
**RAJA RAJENDRALALA MITRA, C. I. E.**, was a scholar of European fame. His connexion with this Society extended over a period of nearly half a century. Entering it, when a young man, as Assistant Secretary and Librarian, his commanding abilities and untiring industry soon brought him into prominence; and while we may congratulate ourselves that it

was this Society which first gave him the opportunity of satisfying his inexhaustible craving for knowledge, we must gratefully admit that he has amply repaid the debt by the contributions that he has made to Oriental learning, and by the lustre that his name and attainments have shed upon the Society, of which he was one of the most distinguished in the long roll of Presidents. When the Centenary Review of the Researches of the Society was in preparation in 1883, Dr. Rájendra-lála Mitra was at once selected as the man to write its history. It was an appropriate and happy choice, and the duty laid upon him and cheerfully undertaken was admirably discharged. His eminence in the field of learning was recognised by the University of Calcutta, which conferred upon him the honorary degree of Doctor in Law, and by Her Majesty the Queen Empress, who admitted him to the Order of the Indian Empire. But his most enduring title to fame lies in the work which he has done, the extent and solidity of which are acknowledged, not only within the walls of this Society, or even in India, but wherever in the civilised world Oriental scholarship is valued.

SURGEON MAJOR A. BARCLAY was a man whose premature death was a heavy loss to that distinguished service of which he was one of the most prominent members, and whose honour and interests he had ever at heart. A man of wide and varied cultivation and untiring energy, it was to the study of parasitic fungi that he devoted his special attention; and the scientific world knows well the value of the contributions that he made to that obscure and important subject, not merely in advancing the bounds of our theoretical knowledge, but in suggesting remedies for some of the most dangerous and destructive pests of both animal and vegetable life. His kind and gentle disposition endeared him to all who had the privilege of his friendship.

JOHN BOXWELL had been a member of our Society for 23 years. Amid the engrossing occupations of a Magistrate and a Commissioner in Bengal, he gave up his rare moments of leisure to the literature of India and the traditions of her people. The character of his learning was varied: he knew the Rig Veda, and he knew the fairy tale; but unhappily the hand of death removed him before he could enshrine the results of his studies in any permanent form. But

“The world which credits what is done,  
Is cold to all that might have been,”

and so he has missed the fame which otherwise might have been his. He was a man of a singularly winning and simple nature; and the cross that marks his grave at Dacca fitly describes him as one *cum doctrina tum moribus exornatus*.

COLONEL SIR OLIVER B. ST. JOHN, K. C. S. I., R.E., was another worker



whose loss we have to deplore. As Major St. John, Director of the Anglo-Persian Telegraph in 1869-71, he made an extensive collection of zoological specimens chiefly belonging to the Vertebrata, and at the same time kept copious notes of the Fauna. He subsequently contributed largely to the collection brought together by Mr. W. T. Blanford, F. R. S., who accompanied him on the Persian Boundary Commission in 1872. These collections formed the materials for Blanford's work on the Zoology of Persia (Eastern Persia, vol. II), in the preparation of which Major St. John's notes on the Fauna proved of essential service. To the account of the journeys of the Commission (Eastern Persia, vol. I) Major St. John contributed a brief but valuable sketch of the physical geography of Persia, together with an interesting itinerary, in every page of which the ardent naturalist is apparent.

The financial position of the Society, which at one time gave cause

**Finance.**

for apprehension, is now approaching a very satisfactory state. The Society is more than Rs. 3,000 better off at the beginning of the current year than it was at the beginning of 1891; the balance in favour of the Society, including the invested securities, having advanced from Rs. 1,37,612 to Rs. 1,40,750, which is higher than it has been at any time since 1887. The report supplies full details of the manner in which this improvement has been effected. Our receipts have been better and our expenditure has been less than in the previous year, the savings having been chiefly effected under the heads of establishment and printing. I should add that only a trifling amount of unpaid bills remains outstanding.

During the course of the year the Council proposed that a portion of the Society's invested funds should be transferred from Government Securities, then at a high premium, to Calcutta Municipal Debentures yielding a better rate of interest. The proposal was accepted by the Society, but in endeavouring to carry it out it was found that Municipal Debentures were very firmly held and rarely came into the market. No change in the investment has therefore been made.

The Oriental Publication Fund shows similar improvement, the Council having found it advisable to take somewhat vigorous measures during the course of the year to reduce the expenditure from this Fund, which was found to be on a scale considerably exceeding its normal income.

Now, therefore, that the period of financial difficulty which once threatened both the Society and the Oriental Publication Fund seems to be over, a brief reference may be made to the causes of these temporary difficulties, and the heads of expenditure which have shown the greatest fluctuations may be compared. Without taking into account

the very necessary outlay on the buildings in 1888, which was partly met by the purchase-money of the strip of land adjoining Park Street, the more variable items are salaries and the expenditure on the two parts of the Journal. The total sum spent on the second (or Natural Science) part of the Journal during the past six years is Rs. 20,990, which gives a yearly average of little less than Rs. 3,500. The average for the first (or philological) part during the same period is Rs. 1,255, in which is included the cost of Mr. Grierson's *Vernacular Literature of Hindustan*, which was however to a large extent met by the receipts on account of copies taken by the Imperial and Provincial Governments.

The outlay on printing the Journal has been given separately for the two parts in the yearly accounts from 1882 only, so that the expenditure during the past six years can be compared with that of only the four preceding. The average cost for the Journal, Part I, during the years 1882 to 1885 was Rs. 2,244, and for Part II Rs. 1,393. It follows that the cost of Part I decreased in the second period by nearly one-half, while that of Part II increased two-and-a-half times. This increased expenditure on the Natural History Part of the Journal undoubtedly represents a large amount of valuable work on the part of the Natural History Secretary and of those members of the Society who devote their time to science, and it has certainly increased the value of the Journal to the scientific world. Still, we must follow the homely maxim of cutting our coat according to our cloth. The fact that the credit-balance of the Society was lower in 1888 by several thousand rupees than it had ever been before, and that it was lower still in 1890, shows that the outlay incurred during the past four years has been considerably beyond the means of the Society. At the same time it must be borne in mind that about 1885 the work done for the Oriental Publication Fund was largely increased, and the effect of this was naturally shown in the reduced cost of the first part of the Journal. Thus in 1885 the cost of this part was Rs. 2,324; in 1886 it fell to Rs. 1,075, and in 1887 to Rs. 420; after which it again increased, but did not exceed Rs. 1,100 except in 1890. Now that the balance in the Oriental Publication Fund has been exhausted, and the work, as I shall explain directly, has been reduced to its normal dimensions, it is to be expected that the number of papers selected for publication in Part I of the Journal will again increase, thus furnishing an additional reason for keeping the expenditure on Part II of the Journal within normal limits.

The average yearly payment for salaries from 1882 to 1885 was Rs. 4,173; and during the past six years this average has been exceeded twice only, in the years 1889 and 1890, while the average for these

years has been Rs. 3,840, or Rs. 330 less than during the previous four years. As the strictest economy has been practised whenever possible, advantage was taken of the opportunity given by the resignation of Mr. Ronaldson to work with a reduced staff, so that the salary bill for the past year has been much less than at any time in the previous ten years. The whole expenditure under this head in 1891 is Rs. 3,138, or more than a thousand rupees less than the average for the years 1882 to 1885.

Thus during these past six years there has been, in comparison with the previous four, a considerable saving on Part I of the Journal, and in salaries. It appears that the low balance in 1890 was chiefly caused by the expenditure on Part II of the Journal. Between the years 1879 and 1885 the balance at credit of the Society varied between Rs. 1,42,000 and Rs. 1,45,000, but since the latter year it has exceeded Rs. 1,42,000 in 1887 only. In 1888 it was Rs. 1,38,032, and in 1890 Rs. 1,37,611. Owing to the careful economy practised by the Council during the past year, the balance is now nearly Rs. 1,41,000, and there is every prospect of a further increase. The opportunity should now be taken to revert to the rule that all entrance fees should be added to the permanent investment instead of to the cash balance; and as there is no longer any urgent reason for keeping the staff on its present reduced footing, the permanent appointment of an Assistant Secretary may now be taken into consideration.

The financial history of the Oriental Publication Fund during the past ten years is altogether different from that of the Society. Up to 1884 the credit-balance was steadily increasing by variable amounts of from two to five thousand rupees a year, the number of fasciculi produced annually at that time being on an average about 21. In 1884 the balance was over Rs. 21,000, and it then became evident that the rate of publication must be increased. A larger number of Sanskrit and Persian works was taken up for publication, with the result that the balance diminished by about Rs. 4,000 a year, and was practically exhausted at the end of 1890. The number of fasciculi published reached a maximum in 1888, when it stood at 58. It became apparent, however, during the past two years that the machinery thus set in motion would continue to work longer than was desirable, and measures have been adopted by the Council, especially during the past year, to limit the publication to the normal number, that is, to the number which can be paid for from the yearly income. Not only has no new work been undertaken, but the less important work already in hand has been suspended. The full effect of

this will appear in the reduced charges for printing and editing during the current year. Assuming that the total income is Rs. 12,000, the working expenses Rs. 2,000, and the average cost of a fasciculus for both editing and printing Rs. 400, the number that can be produced annually is 25. The Council has now arranged that during the current year this number shall, at any rate, not be exceeded.

Statement No. 2 of the accounts for the past year shows that the condition of the O. P. Fund at the end of the year is fairly satisfactory ; the cash balance having increased from Rs. 469 to Rs. 1,172, and the outstanding liabilities having been largely reduced, though they still stand at about Rs. 6,000, a considerable portion of which, however, will be paid off during the current year. The improvement is due to the sale of publications having been larger than usual, and to the accounts, as rendered by Messrs. Trübner and Co., covering a period of 18 instead of 12 months. But judging from the increased receipts from the sale of publications during the past few years, there is good reason to suppose that there will be a steady income to the fund under this head of about Rs. 3,500.

Before passing on to a brief review of the work done by the Society and outside it in some of the different departments of Literature and Science during the past year, it is my duty, and a very agreeable duty, to remind you of the services rendered to the Society by its Officers, and of the obligations under which their zeal and devotion place us. The extent and pressure of the work that devolves upon the Secretaries are perhaps little understood except by those who have practical experience of it ; and, without an amount of labour that is always considerable and often severe, it is not too much to say that the work of the Society could not be carried on. The death of Rájá Rájendralála Mitra created a vacancy in the Vice-Presidentship, which the Council have proposed to fill by the nomination of Mr. C. J. Lyall, C.I.E., to that office, a nomination which you have now confirmed. I need hardly remind you that Mr. Lyall is known to the learned world as one of the most erudite and accomplished of Arabic scholars, and that he has already placed us under obligations by his edition of Abu Zakariya's *Commentary on Ten Ancient Arabic Poems*. The closer connexion of Mr. Lyall with the Society cannot fail to increase its usefulness. Mr. Little has discharged the onerous and important duties of the General Secretary throughout the year with eminent success. To Dr. Hoernle's conspicuous services as Editor of Part I of the Journal the Society is greatly indebted. Dr. Hoernle has now been placed on special duty by the Government of Bengal in order to complete the editing of the Bower MS. He has

accordingly expressed a desire to be relieved of the office of Philological Secretary, the duties of which have been readily undertaken by Mr. C. R. Wilson, with the exception of the numismatical work which Dr. Hoernle has consented to retain. Mr. W. L. Sclater has been no less devoted and successful as Editor of the Natural History section of the *Journal*. On his taking furlough to Europe, Dr. Tull Walsh very kindly consented to take up these duties. Lastly, on Rája Rájendralála Mitra's death, Pandit Hara Prasád Shástri was invited by the Council to undertake the duties connected with the search for Sanskrit MSS., and with the supervision of the Sanskrit portion of the *Bibliotheca Indica* publications. For such duties he is eminently fitted, and he has been recommended by the Council for appointment as additional Philological Secretary, in order to enable him to discharge them more effectively. To all these gentlemen, and to our Honorary Treasurer, Dr. W. King, the Society rests under deep obligations, and I would ask you to pass a cordial vote of thanks to them for their services so freely rendered during the past year. (*The vote of thanks was carried by acclamation*).

My own obligations to the Secretaries and other members of the Society are of a different kind. In the review that follows I have had to rely very largely—in the department of Natural Science I may say entirely—on the assistance of gentleman who are experts in their respective branches of knowledge, and I beg to offer them my cordial thanks for the help so willingly rendered. I am especially indebted to Dr. Hoernle, Dr. Tull Walsh, Mr. Cotes, Dr. Prain, Pandit Hara Prasád Shástri, Col. Thuillier, R. E., Col. Waterhouse, Mr. C. R. Wilson, Mr. Wood-Mason, Babu Sarat Chandra Das, C. I. E., and, for constant assistance of every kind, to Mr. Little.

I begin, therefore, with some notes on the literary and archæological department of our work, including Philology, History, Ethnology, Archæology, Epigraphy and Numismatics. Papers on nearly all these subjects have been published in Part I of the *Journal* and in the *Proceedings*. Of the *Journal*, Part I, two numbers have been issued; a third is nearly ready and was to have been issued before the close of the year. It has been delayed by fresh researches, resulting in important discoveries regarding the Bower MS., of which an account will be given later on.

Under the head of Philology the publications of the *Bibliotheca Indica* occupy an important place. During the year 34 fasciculi have been issued, including 20 Sanskrit, 11 Arabic and Persian, and 3 Tibetan publications. As already explained, a larger number might have been produced, but the

state of the Oriental Publication Fund rendered it necessary to restrict the out-turn. Next year there will be a still greater reduction; but in future years it may be anticipated that the recovery of the Fund to a solvent condition will enable us to return to our normal issue. Three works were completed during the year; these were the *Tārīkh-i-Firūs Shāhi* of Shams Sirāj 'Arif, edited by Maulavi Vilayat Husain of the Calcutta Madrassa; the *Brihannāradya Purāna*, edited by Paṇḍit Hriśīkeśa Shāstri; and the *Nirukta*, edited by Paṇḍit Satyavrata Samaśrami.

Among the numbers issued, the two following works deserve conspicuous notice.

*The Ain-i-Akbari of Abulfaẓl, Translated with Notes by COL. H. S. JARRETT. 2nd Volume.*

The first volume of this translation was published by the late Mr. Blochmann as long ago as 1873, and is deservedly held in very high estimation. At the time of the author's death, it was thought that he had left the remainder of the translation in manuscript; but it could never be discovered, and the Society afterwards made repeated attempts without success to secure the completion of the work. At last Col. Jarrett undertook the task; and the Society is to be congratulated on the completion of the second volume. The third volume is in course of preparation, and will probably be finished in another year. Col. Jarrett's translation is made uniform with Mr. Blochmann's, and is similarly furnished with copious notes illustrating the difficulties of the text.

*A Commentary by Abū Zakariyá Yahyá at-Tibrizí on Ten Ancient Arabic Poems, edited by C. J. LYALL, C. I. E. Fasc. I.*

The ten poems included in this work, which are all pre-islamic, are the seven Mu'allaqát and three other odes, by al-A'shá, an-Nábigah, and 'Abíd ibn al-Abras respectively. The only one of the ten which has not previously been printed is the last. But the commentary, which is by the same hand as the great commentary on the Ḥamásah published by Dr. G. W. Freytag, has remained till the present inedited. It is now published on the basis of an excellent ancient MS. at Cambridge, collated with others from Leiden and the British Museum, and with three MSS. of an-Naḥhás's commentary upon which Tibrizí chiefly relies. The fasciculus issued this year carries the work to the middle of the poem of 'Antarah: another will complete the text, to which it is intended to add indices and a critical apparatus.

I would also draw attention to the Tibetan publications of the

**Tibetan Literature.** *Bibliotheca Indica* series, for which we are indebted to Babu Sarat Chandra Das, C. I. E., and Babu Pratáp Chandra Ghosh. This is a comparatively new field of work, which is arousing considerable interest in Europe. The mass of

Tibetan literature accessible to us is enormous, and of very unequal value; and it will be necessary to exercise great care in selecting works for publication in this series.

Reference may also be made to a paper on the life of the Indian Pandit, Atisa, otherwise known as Dipamkara Srijñana, by Babu Sarat Chandra Das, C. I. E., published in Part I of the *Journal*. Dipamkara was a learned Pandit of Magadha, to whom Lha Lama, the king of Tibet, sent messengers in the first half of the 11th century, inviting him to visit Tibet in order to restore the pure doctrines of Buddhism, which had become debased in that country by an admixture of Tantric and Pon mysticism. After many refusals he was prevailed on to visit Tibet in the year 1038 A. D., when the king received him with the utmost respect and veneration, and conferred on him the title of Jovo Atisa, (the Supreme Lord who has surpassed all). He revived the practice of the pure Maháyana doctrine, and died near Lhasa in 1053 A. D. at the age of 73.

I may also notice the papers of the late Dr. Karl Marx, published in numbers 2 and 3 of Part I of the *Journal*, one being a translation of a dialogue from the Tibetan between a wicked king and his minister, and the other a notice of documents relating to the history of Ladakh, at which place Dr. Marx was a missionary. Death has been very busy in the last few years with Tibetan scholars. We have lost Schiefner, Minayeff, and Jäschke, and now the successor of Jäschke at Ladakh has followed him.

*Tibetan-Sanskrit Dictionary*.—An account may here be given of the Tibetan-Sanskrit Dictionary, in the preparation of which Babu Sarat Chandra Das, as the Tibetan Translator to Government, has been engaged for the last two or three years under the orders of the Government of Bengal. At the close of the Preface to his Tibetan Dictionary, published by the Asiatic Society of Bengal in 1834, Csoma de Körös wrote:—"When there shall be more interest taken in Buddhism and in the diffusion of Christian and European knowledge throughout the most Eastern parts of Asia, the Tibetan Dictionary may be much improved, enlarged and illustrated by the addition of Sanskrit terms." The projected dictionary is intended to satisfy this requirement, only much more fully than de Körös contemplated. Since his time another Tibetan Dictionary has appeared, the production of Jäschke, the Moravian Missionary at Ladakh. This work, though a great improvement on Csoma's, does not meet the critical requirements of the present day. Jäschke had not at his command the resources necessary for such an undertaking. He was thoroughly familiar with Tibetan as a spoken language; but as regards its literary form, he had access to only a

limited number of Tibetan works that had been published in Germany and at St. Petersburg, besides a few block-prints obtained from itinerant Lamas at Ladakh. More than this, words of every style and of every age are collected together in Jäschke's dictionary without any attempt at classification.

The dictionary which Babu Sarat Chandra Das with his coadjutors has now in hand is of much wider scope than either of its predecessors, and its materials are derived from many different sources. It was in the first instance undertaken at the suggestion of Professor Max Müller, who was anxious to ascertain the exact force of the Tibetan renderings of current philosophical terms used in Sanskrit-Buddhist literature. These technical terms, it was known, were rendered into Tibetan by their precise syllabic equivalents, in conformity with a system framed for the purpose by the Pandits engaged in the work of translating into Tibetan the sacred books of Indian Buddhism. It was hoped that in this way much new light would be thrown on the original meaning of the philosophical terms of that literature, which is now in many instances most obscure.

The dictionary has accordingly been framed on these lines. The Tibetan word is first given, and then its Sanskrit equivalent, if any, followed by (1) a literal translation of the word according to its etymology, (2) the sense or senses in which the word is used in speech or literature, (3) illustrative examples taken from Tibetan works either published or accessible in known libraries. In order to secure, as far as possible, an exhaustive vocabulary and a copious supply of illustrations, Tibetan literature has been ransacked. Recourse has been had, not only to Tibetan-Sanskrit vocabularies like the *Vyutpatti* and the *Mahá-vyutpatti*, some of which had already been translated by Rémusat into French and by Csoma into English; and to Sanskrit works like the *Kalpalatá Kavyádarsá* with their absolutely faithful Tibetan translations; but also to a still larger treasury of literary and scientific wealth. The *Kahgyur*, or collection of Buddhist Scriptures, comprises 108 volumes of about 500 leaves each. With the help of Lama Sherab Gyatsho, of the Goom Monastery near Darjeeling, 90 of these volumes have been analysed for the purposes of the dictionary. The *Tanggyur*, which contains 225 volumes, is a still richer storehouse of learning. It contains the text of Páñini and other grammarians, treatises from the Sanskrit on ethics, political science and political economy, and even poems like the *Meghadúta*—all transcribed *literatim* in the Tibetan character, together with Tibetan translations and commentaries. The *Tanggyur* is in fact a cyclopædia of Indo-Tibetan literature; and the means by which so many ancient Sanskrit works had been preserved in Tibet



and interpreted to the people had long been a source of wonder to scholars in Europe. Unfortunately we possess no copy of the *Tangyur*, as we do of the *Kahgyur*. Babu Sarat Chandra Das has succeeded in obtaining the loan of one volume from the Labrong Monastery in Sikkim; but if the whole were accessible to him, the value of his work would be greatly increased.

But it is not merely the scientific terms of classical literature that will find a place in this dictionary. The work is intended, as far as possible, to be complete; and will include the language of the present time and of every-day use—in fact, the current vernacular of Tibet. Contributions have also been levied from a large collection of Tibetan and Bhootea correspondence, captured during the late Tibetan campaign. These contain a great variety of idiomatic and honorific words and phrases, the use of which is confined to correspondence and to polite conversation. From another quarter has been obtained a large stock of words peculiar to the terminology of the Pon mysticism, which is thought to have preceded Buddhism in Tibet. These terms are little known to orthodox Buddhists, and were entirely unknown to either Csoma or Jäschke. Readers of our publications will remember how many papers on the Pon religion Babu Sarat Chandra Das has contributed to the *Journal*, from books and materials which he collected during his residence in Tibet. Aid is also promised from abroad; Professor Foucaux of Paris having kindly offered to place at Babu Sarat Chandra Das' disposal the materials that he has himself collected with a similar object, including a long list of philosophical terms from Buddhist-Sanskrit sources. Finally, in the interpretation of Sanskrit terms, Babu Sarat Chandra will have the valuable assistance of Pandit Hari Mohan Vidyabhushan, the Pandit employed by this Society.

The arrangement of the dictionary will be alphabetical; all the words derived from one root being placed together under that root, and each word being again found in its alphabetical place, with a reference to the word under which its meaning is discussed. The difficult question of pronunciation is provided for by a method at once simple and clear. Typographical devices will be used to distinguish modern and colloquial words from those that are scientific or ancient. Some of the work is now ready for the press, but it will necessarily take a long time before so elaborate an undertaking is completed.

Of works published in 1891 outside the Society, on subjects relating to Oriental Philology, the following may be noticed:—

*Introduction to the History of Language*, by H. A. STRONG, W. S. LOGEMAN and B. I. WHEELER.—This useful book professes to be little

more than an exposition of the German work of Prof. Paul on the Principles of the History of Language—a reproduction of the same matter in less technical language, and with illustrations drawn mainly from languages with which the English student is thought to be familiar. It will be welcomed by all to whom the German work may be inaccessible.

*Comparative Dictionary of the Indo-European Languages* by PROFESSOR A. FICK. *Fourth edition*.—The first edition of this great work was published more than 20 years ago, and created an epoch in the history of scientific philology. Since then Comparative Philology has made great progress; some old theories have been overthrown, some disputed points have been determined, and new discoveries have been made. It is no wonder, then, that the fourth edition is, in many respects, a new work. The field is too vast for one scholar, and Prof. Fick has now secured the assistance of the best men in each department, such as Sir Whitley Stokes, Prof. Bezzenger and others. The Dictionary contains three comparative vocabularies, one of the “parent speech,” another of the Eastern, and the third of the Western European periods of linguistic unity.

*The Memoirs of Sháh Tahmāsp I of Persia*, by DR. PAUL HORN.—The Persian text of this work, towards the editing of which the Society contributed a MS. from its library, has been published by Dr. Horn in the *Journal of the German Oriental Society* for 1891. A German translation has been published by him in a separate little volume, with some useful notes and an index of names.

*Mánava Dharma S'ástram*, edited with a Commentary by PANDIT BHIMA SENA SARMAN.—This is a new edition of the well-known law-book of Manu, which has been repeatedly published, the last time by Professor Jolly in Trübner's Oriental Series. The author explains in his preface his reasons for republishing the work, on which he promises to throw much new light in his commentary. It promises to be an extensive undertaking. Seven fasciculi have appeared, and the Pandit is still in the midst of his introductory dissertation, in which he discusses such questions as the identity of Manu, the date of his writing, and the object of his law-book, and speculates on the contents of each of its chapters. The book is written in both Sanskrit and Hindi.

*Catalogus Catalogorum*, by PROFESSOR TH. AUFRECHT.—This is perhaps the most valuable publication of the year. It is a descriptive list of all Sanskrit Literature and Sanskrit authors known, and has been published at the expense of the English Government.

Theodore Aufrecht holds a very high place among the Sanskrit scholars of Europe. He was already well known to the learned world

by his Latin Catalogue of Sanskrit MSS. in the Bodleian at Oxford, and by his English Catalogue of those in Trinity College, Cambridge. His *Catalogus Catalogorum* is a work of the first importance, which has cost him thirty years of close application. In it he has arranged in alphabetical order the names of Sanskrit works and their authors so far as they were procurable. He has given references to the catalogue or catalogues in which these names are to be found. Under the titles of books, he has given the names of their Commentaries in alphabetical order, and under the names of authors, he has given the names of all books attributed to them. It is an invaluable work of reference to the bibliographer and to those engaged in the search for Sanskrit MSS. The labour of these investigators will be greatly economised, for they will not need to trouble themselves about works which have already been described by eminent men like Bühler, Peterson and others. Economy of space in future catalogues is a matter of great importance.

Aufrecht has compiled his work from 56 different series of catalogues, published from the time of Sir William Jones up to the present day. He has made full use of the catalogues published in connexion with the search for Sanskrit MSS. in India. It was a drawback to him that these works have not been prepared on one uniform plan. Some of them are mere lists of names; others, while giving some information about the works in a tabular form, are silent as to their contents; others again give detailed information in English about important works, relegating those of less importance to a tabular statement of no great value, while the descriptions, being given in English, are useless to the pandits of India. It requires a thorough acquaintance with these different catalogues to be able to find out from Aufrecht whether any MS. under inquiry has been adequately described or not in a previous catalogue.

To the works above named may be added, *Studies on the History of the Indo-European Languages*, by C. Bartholomae, and a *Grammar of the Khassi Language* by the Rev. H. Roberts.

Among papers that have appeared in the different periodicals of Europe, the following deserve mention:—

(1) A series of papers by Dr. R. Morris in the *Academy* (May to August 1891,) on Páli and Jaina Prakrit words of obscure or peculiar etymology.

(2) A paper by Professor E. Leumann in the *Vienna Oriental Journal*, Vol. V, No. 2, on the legend of Chitta and Sambhúta, as given in Buddhist and Jaina records. (This is one of the 550 *Játakas* or birth-stories of the Buddhists.)

(3) A paper in the same number of the *Journal*, by Professor H. Jacobi on Indian Metres, showing that the development of Indian

metres cannot be explained on the rhythmical theory, but must have followed an entirely different line; and that it cannot be fully known what this line was until we acquire a more accurate knowledge of Indian Music. Mr. C. B. Clarke's paper on the theory of Indian Music, originally published in the *Calcutta Review*, is doubtless familiar to many members of this Society, and was, I believe, the first attempt made to treat the question scientifically.

(4) A paper by A. Conrady in the *Journal of the German Oriental Society*, containing the grammar and examples of the Newári language.

(5) A paper in the same *Journal* by Prof. Th. Nöldeke, on the texts of the Book of the Ten Vazírs, especially on an old Persian version of it.

*Search for Sanskrit MSS.*—Professor Aufrecht's *Catalogus Catalogorum* leads me to refer to the work that has recently been done in the search for Sanskrit MSS., for which purpose a liberal grant has been for some years made by the Government of India. I am indebted to Pandit Hara Prasád Shástri for the following account of the work of the last few years.

The collection of Sanskrit MSS. and the publication of their catalogues by eminent men like Sir William Jones, Colonel Mackenzie, Horace Hayman Wilson, Colebrooke and others, created an interest in these MSS. in Europe from the time that Sanskrit first became known to scholars about a hundred years ago. Every one in India who had a taste for Sanskrit collected MSS., and gave or sold them to one or other of the numerous libraries in Europe. But about 25 years ago it was found that with the decadence of Native States, the encouragement given by the Government of India to English education, and the consequent loss of the influence which Brahmans exercised over the Hindu population, Sanskrit learning was falling into neglect, *tois* began rapidly to disappear, and collections of MSS. remained uncared for in the possession of men who could not appreciate their worth. A great pandit dies; his son, an educated gentleman with no knowledge of Sanskrit, takes some care of the MSS., but merely as a memento of his learned father; wraps them up carefully, dries them in the sun after the rainy season, and preserves them in the best room in his family dwelling house. But his tastes are different, his children are educated under widely different circumstances, and these consider the MSS. as mere lumber, which occupy space where they could conveniently put a table or a chair. As soon as they come into possession, they relegate the MSS. to the lumber room, the cook-room or the cow-shed, where young girls taught by the Zenana Mission use them as waste-paper; the planks being utilised to kindle fire for cooking. This state of things

becoming widely known, a letter was addressed by Pandit Radha Kissen of the late Lahore Darbar to the Government of India, urging Government to do something for the preservation of these MSS.; and after much correspondence a liberal grant was made for the purpose by the Government of Lord Lawrence. The various Provincial Governments made their own arrangements for carrying on the search for Sanskrit MSS. In Madras these operations have been carried on by A. C. Burnell, Gustav Oppert and Lewis Rice; in Bombay by the celebrated scholars, Bühler, Kielhorn, Bhandarkar and Peterson; in the Punjab by Kashinath Kunte; and in Oudh by Deviprasad. In the North-Western Provinces the duty was entrusted to the Librarian of the Benares Sanskrit College. In Bengal the work was given to the Asiatic Society, which made it over in turn to Rájá Rájendralála Mitra who, assisted by three pandits, one of whom travelled all over the country, published several volumes of Notices of Sanskrit MSS. in the course of 19 years. A very large number of private libraries was visited. Notices were prepared by the travelling pandit in a prescribed form, giving a detailed abstract of any new book that he happened to find. But the work of compiling and editing these Notices, and putting them into a presentable shape, was done by the Rájá himself. His work has elicited just praise from Theodore Aufrecht in the *Catalogus Catalogorum*. The Rájá intended to write a critical report of the works brought to light during the period he was in charge, and it is a source of great regret that he has been removed from the scene of his labours before he had time to accomplish his wishes.

*Inspection of Sanskrit Tols.*—The attention of the Government of Bengal having been directed to the decline that was alleged to be taking place in the popularity and efficiency of the indigenous institutions known as *tols*, in which for centuries past Sanskrit has been taught by pandits of repute to successive generations of pupils, the Lieutenant-Governor, Sir Charles Elliott, deputed Mahámahopádhyáya Mahes Chandra Nyáyaratna, C. I. E., the Principal of the Sanskrit College of Calcutta, to inspect and report on these institutions. For more than 60 years an allowance of Rs. 100 a month has been made by the Government for the support of pupils in the *tols* of Nadiya, and this allowance has in recent years been increased to Rs. 150, and again to Rs. 200 a month. Grants of Rs. 500 a year each are also made to the Dacca *Sarasvatí Samáj* and the Behar *Sanskrit Sanjíván*, two local associations of pandits and of those interested in Sanskrit study, for the improvement of the *tols* by means of examinations and rewards. The Lieutenant-Governor intimated a wish to make a further grant in support of the *tols*, if it should be found on inquiry that money could be usefully spent in the

furtherance of that object. Pandit Mahes Chandra Nyáyaratna was accordingly placed on special duty for three months, during which he visited all the chief centres of Sanskrit learning in Bengal, Behar and Orissa ; and he has now submitted a report which will, I hope, soon be made public, and which gives many interesting details, hitherto unpublished, regarding the constitution of the *tois*, the course of studies pursued in them, and the special characteristics which distinguish them in different parts of the province. A full account is also given of the various institutions, religious or secular, which have been locally established in recent years for the promotion of Sanskrit study ; of the Sanskrit schools maintained by these associations as well as by individual patrons of learning ; of the examinations conducted by them, either independently or in subordination to the Sanskrit Title examination, held annually by Government in Calcutta and other centres for the award of Sanskrit titles to the students of *tois* ; and of the effect of such examinations in maintaining and stimulating the study of Sanskrit. The following extract from the report will be of interest, as showing the causes that have led to the decline of the *tois* :—

“ The old custom of sons pursuing the calling of the father, which made pandits’ sons grow up to be pandits, unless they happened to lack the mental power to do so, is losing its hold upon the country, and pandits’ sons are accordingly being trained up for secular callings that promise better prospects from a worldly point of view than the calling of a pandit. Thus it is that families of pandits in Bengal have all been tending to assimilate themselves to the other Brahman families of the province, *i. e.*, have all been tending towards secular callings that hold out prospects of pecuniary gain. Most of the best pandits of Bengal, all the Mahámahopádhyaýas without exception, have trained up or are training up their sons or grandsons for other callings than their own—have given them or are giving them, in fact, an English education. It is but natural that men should prepare their sons for such walks of life as they think would be most advantageous to them, and this is what the pandits of Bengal have been doing. Non-pandit Brahman families hardly ever think of training up any juvenile member at a *tol* for the career of a pandit. Our *tois* are thus being threatened with a stoppage of supply of boys. An utter stoppage of supply is not likely to occur in the near future, but matters appear to be clearly tending to this. The aggregate intellectual capacity of the present generation of *tol* students is lower than that of the past generation as unquestionably, I think, as the number is lower ; and this deterioration in quality and decrease in number, judging from present circumstances, tend to be progressive. To arrest this

decline very liberal help from individuals and from the State would be needed."

The proposals of Pandit Maheśa Chandra Nyāyaratna involve considerable expenditure, in the way partly of providing stipends for selected teachers of distinction, and partly of assigning rewards to teachers and scholarships to pupils on the results of annual examinations. I think we shall all agree that if the decline of these ancient and interesting schools of Sanskrit can be arrested at a moderate outlay on the part of Government—an outlay which will almost certainly arouse the liberality of the wealthy in this country—the money will be well spent.

The number of publications received in 1890, under Act XXV. of 1867, in the eleven libraries of the Empire was 7,877, and reports on these works have been issued by the Home Department of the Government of India. Several catalogues for 1891 have also been issued, but with the exception of those for Bengal, Bombay and Madras, the catalogues are generally mere lists. In the following paragraphs, for which I am indebted to Pandit Hara Prasād Shāstrī, M. A., the Bengal Librarian, a brief account will be given of the most important of these publications.

They naturally divide themselves under two heads, *viz.*, Original works and Republications. It is remarkable that the original works of the present day are almost wholly in prose, and the republications almost wholly in verse. Since the days of the Bráhmaṇas and Upanishads no original work of any value has until recently been written in prose; that having been left entirely to the Commentators and to the heretical Buddhists and Jains. The vernaculars of India, with the exception of Urdú, were altogether without prose until the introduction of English education in this country about 50 years ago. Greater activity is, however, now displayed in searching for and publishing ancient works, than in writing new ones. The original works include art, biography, history, fiction, essays on all subjects, and voyages and travels; the republications including poetry, grammar, dictionaries, and theology in almost all its phases.

*Fine Arts.*—Valuable works on Fine Art have been written by, or published at the expense of, titled gentlemen of wealth and influence. Rájá Sir Saurindra Mohan Tagore keeps up the reputation of Bengal by publishing works on the literature of music; and the Senior Rájá of Venkaṭagiri is the author of a Telugu work on music, which embraces both the Hindu and Muhammadan systems. This valuable work teaches music, both vocal and instrumental, and also dancing. Painting has not much advanced, but the religious pictures drawn by the students of the

Government School of Art are a great improvement on the painting practised 20 years ago. The maps of various countries recently published show a great improvement in artistic skill.

*Biography.*—The biographical literature of India is rich and useful. The people are learning to study man as he is, and are leaving off the old way of deifying and worshipping every great man of their nation. The list of biographies, which, it will be seen, is by no means confined to India, contains the following names:—The late Dewan Peshkar of Pudu Cota, in English; Sháh Latíf, the greatest poet of Sindh, in Arabic-Sindhí; Socrates in Gujarátí; Richard Cobden in Maráthí; Tántia Bhíl in Bengálí, English and Maráthí; Bachcharája, a Jaina saint, in Gujarátí; Bágghata, a great medical writer, and Kalyána Deva, a Rájput hero, in Maráthí; Ballabháchárya, the great Vaishṇava reformer of Western India, in Gujarátí, and in Sanskrit and Gujarátí; Udar Lál, a great Hindú saint of Sindh, who saved many lives from Muhammadan persecution, in Arabic-Sindhí; Bhánu Dás, a great worshipper of Bīṭhova in Pandarpur, in Maráthí; Bápú Goklá, the last of the great Marhatta generals, who died manfully fighting in the defence of Marhatta independence, in Maráthí; Chaitanya, the great Bengal reformer, in Canarese; Kuñwar Fathlálji Mahata, in Urdú; Henry Lawrence in Urdú; Edward Gibbon in Hindí; Abraham Lincoln in Maráthí; Bradlaugh in English and in Maráthí; Bholánáth Sárábhái, the well-known theistic Reformer of the Western Presidency, in Gujarátí; Pandit Ísvarachandra Vidyáságara, Narottama Dás, Prabodhánanda Sarasvatí, and Dr. Duff, in Bengálí.

*Drama and Fiction.*—Prose works of imagination, namely, dramas and works of fiction, are many and various, but they do not show much originality or boldness of conception. They treat mostly of the quarrels of the daughter-in-law with her mother-in-law; of educated ladies married to uneducated men of equal family rank; of learned Bábús married to illiterate wives; of the miseries of married widows, written by the orthodox classes; and of the miseries of girl widows, by the friends of progress. For instance, *Indulikha* in Malayalam is a tale of a girl's marriage against her wishes; *Bhulbhulamári* in Gujarátí and *Sansáyí Strí* in Maráthí, are stories of jealous wives; *Shirin Madam* in Gujarátí is a lifelike picture of Parsi life in Bombay.

The writers often desert India and travel to European countries in quest of their heroes and heroines. For instance, the *Chaste Jewess* in Gujarátí gives a description of the persecutions of the Jews by the English in the 13th century. *A'iche Málíní*, in the same language, is a Christian tale. *Chháyá* in Bengálí is a picture of a joint family just before its decline under the altered circumstances in which India is now placed.



*Anáth Bálak* presents a faithful picture of Hindú family life in the Mufassil, both in wealth and in poverty. *Viṅśa S'atábdí* is a work of fiction, giving a picture of what India may be a hundred years hence. *Sankalpa Súryodaya* in Tamil is an adaptation of a Sanskrit drama of the same name, which is unknown to the learned world outside Southern India. It is something like an allegory, though not written in the manner of the *Prabodha Chandrodaya* of Kṛishṇa Miśra. It is written in the interest of Rámánuja's followers.

The drama describing the career of the great Jaina saint Sthúlabhadra in Gujarátí shows that Jaina saints have still a hold on the people of India. *Rambhámanjarí* is a newly written Sanskrit drama from Southern India. Such works in Sanskrit are not at all rare in any part of India. *Káli Kautuka Rúpaka* is an allegorical Hindú drama which describes the evils of the *Káli Yuga*.

*Grammars and Lexicons*.—These works are of great philological value, and some of the very best books have been published during the period under review. The Pandits of East Bengal are rapidly publishing all supplementary works of the *Kátantra* or *Kalápa* school of grammar. Pandit Hṛisikeśa Shástrí has finished his edition of the *Supadma Kaumudí*, a work based on Páṇini, but written, it is said, by a descendant of the great Vararuchi. *Rasagangádhara*, an important rhetorical work of great value, is being published in the *Kávyamálá* series of Bombay.

Works still more rare and important have been issued in Madras. *Urichol Nikáṇḍu* is a rare lexicon of the Tamil tongue. It was long supposed to have been lost. It gives, in the form of the celebrated *Amarakosha*, the synonyms of all things in heaven and earth, with the exception of abstract qualities. *Nighaṅṭu*, of which *Nikáṇḍu* is only a Tamil form, means 'a work of synonyms'; and we have the great Vedic *Nighaṅṭu*, on which Yáska has written his *Nirukta* in the form of a Commentary. *Pingala Nikáṇḍu* is another important discovery of a lost work. The synonyms in this work are those of metrical, grammatical and rhetorical terms. Another lexicon, a medical one, in Telugu, gives synonyms of words divided according to the six medical *rasas* to which all things belong. Many Gujarátí merchants trade with the Western Coast of Africa, where the Swahili is the chief language, and so these merchants have published a guide to the Swahili language in the Gujarátí character. This, like most African languages, has no written character of its own. Besides these, Bombay has published a Hebrew Dictionary, to help people in acquiring a knowledge of the Hebrew, Chaldaic and Talmudic languages, and a metrical grammar of the Avasta language.

The *Viśva Kosha*, a Bengálí encyclopædia, was stopped for want of

support five years ago. Bábú Nágendra Náth Basu has undertaken to carry it on, and has published 12 parts in the year. The last word is *Kalikátá*, or Calcutta, and the writer has collected a mass of very valuable information on the history and antiquities of the city.

*History.*—The historical literature of Bengal, the North-Western Provinces, and Sindh is of no great importance. Mahárásht̄ra and the Panjab have a history, and are therefore rich in historical literature. The Panjab has not, however, published anything of importance except *Karínámá-i-waliyan Sialkot*, giving the history of Peshwara Singh and Kashmíra Singh, the reputed sons of Ranjít Singh, the Lion of the Panjab. In Maráthí, however, have been published a history of Shambhují and Rájárám, the sons of Shivají; Dhundhu Bála Kṛishṇa Sahasrabuddhi's account of the career of Parashurám Rao and of the troubles of his times; the Chronicles of the Peshwas from 1713 to 1818, that is, for the entire period of their existence as a great power in India, by an officer of the Court of Bájí Rao II, written either immediately before or immediately after the British conquest in 1818; and a history of Madhu Rao II, who was succeeded by Baji Rao II. The history of Surat from its foundation 700 years ago, in Gujarátí; an abstract history of Mecca in Urdú; a history of the Itiapura family in Madras, who materially helped Government in suppressing the rising of the Polygars in 1800, in Tamil; *Tárikh-i Banáras* in Urdú; the letters of 'Alamgir in Persian; and the Memoirs of Dehlí and Fyzabad in English, compiled from Persian sources,—these are all the works in history of any importance which have been published during the period under review.

*Essays.*—A *Collection of the Political Opinions of the late Sir T. Madhava Rao*, in two parts, in English, is the only work on politics worth the name. Sir T. Madhava Rao was a sound thinker on religious, social and administrative matters, and his opinions have always exercised an immense influence on the educated natives of India. The literature of the Congress and of the Cow Protection movement is as copious as in previous years. We have works on the Cow Protection movement in almost every language. Even the Central Provinces, which publish next to nothing of importance, have issued an appeal for the protection of cows. The Consent Bill agitation has produced a very large number of pamphlets, many of which have not been received in the libraries as they were intended for private circulation only.

The Caste books are becoming more and more important. The Sonárs of Southern India claim descent from Viśva Karman and call themselves Brahmans. They have published books both in Tamil and in

**Maráthí.** The pretensions of the Kayasthas of Bengal to a Kshatriya descent have been opposed by a Brahman in the work entitled *Hathát Kshatriya*. The publication of the *Ballála Charita* is significant. The Jogís and Sonár Baniyás of Bengal think that Ballál Sen degraded them, and so they have unearthed a *Ballála Charita*, which paints Ballál in the darkest colours possible. The Sennars or toddy dealers of Southern India have been cried down in a Tamil pamphlet.

The *Árya Samáj* people have been for years carrying on a controversy against the orthodox Hindus on the one hand, and against the Musalmans on the other, giving to the literature of the Panjab a life and vigour which are wanting in other provinces. No less than 15 pamphlets have been marked in one quarterly catalogue alone against the theory of the transmigration of the soul. The locusts have also absorbed a good deal of the attention of Panjábí writers. The immorality and dissolute lives of the Mahárájas, or Abbots of the followers of Ballabháchárya, have been exposed in a work entitled *Pushpimárga*.

*Travels and Voyages* are rarely undertaken by the great majority of the Indian people. Most of the works under this head treat of single journeys on business, from one part of India to another or from India to England. Paṇḍitá Rámábái, however, is writing a large work, in parts, of her travels in England and America. A description of the journey undertaken by the Sháh of Persia to England and France has appeared in Urdú. *Viśvagunadarśana* is the description of an imaginary journey in Sanskrit, which has been translated into Tamil for the benefit of the people of Southern India.

*Poetry and Religion.*—In the palmy days of Indian literature, when the Hindú mind retained its full vigour, the domains of poetry, philosophy and religion were kept distinct. But with the decadence of literature and the loss of independence, these three things began to be so blended together that it is impossible to separate them; as is the case with the mediæval poetry of India. The *Premabhaktichandriká* and the *Smaranamangala*, both in Bengálí, by two of the great leaders of the followers of Chaitanya, belong to this class of poetry. They comprise the poetry, philosophy and religion of Vaishnavism. The *Ráma Rasáyana* in Bengálí is also a work of this class. It shows, however, how the different sects in India derived their materials from the original Aryan and Brahmanic sources, and adapted them to their own use. As a Vaishṇava work, the *Ráma Rasáyana* leaves out those incidents of Ráma's life which have any thing to do with Śákta or Saiva worship. *Nalayira Divyaprabandham*, called the Tamil Veda, in Tamil verse, is a large work in honour of Vishṇu. It was written by the Vaishṇava Alwars. There is a very noteworthy point of difference between the

Bengal and the Madras religious publications. While in Bengal the writers are concerned more with the spread of the worship of different superhuman beings like the *Satyanārāyaṇa*, the *Trinātha*, *Mangalachandī* and others, the Madras people are fond of writing short treatises in honour of the deities of different temples, such as the Vishṇu of Teru Narāyanpura, the Śiva and Durgā of Teru Mulainayal, the Nāṭeśa of the Chidambara temple, and so on.

Jaina religious works in prose and verse are to be found in almost every province of India. The most remarkable production of the year is the *Jayati Huna Stotra*, in Prākṛit, by the great commentator Abhaya Deva Sūri, who lived about 800 years ago. He discovered an image of Jina on the banks of a river, and consecrated it in Cambay. The work is in honour of this image. The *Jaina S'taka* in Sanskrit by Bhūdān Dās, the *Rasika Stavana Sangraha* in Gujarātī, are also Jaina works of importance published during the year. *Chūlāmāni* is a rare classical poem of Jaina origin, published for the first time in Tamil. The *Dincard* is a very ancient work in Pahlavi. It has been published for the first time, though in a very mutilated form for want, apparently, of good texts, with an English and a Gujarātī translation. Dārā Shiko, the eldest son of Shāh Jahān, was a very enlightened prince. He was a follower of the Ilāhī religion of his great-grandfather, and often held conversations on religious matters with professors of different religions, especially with Hindū devotees. A dialogue between him and Bābā Lāl Dās, in Persian, has been translated into Urdū. It is a work of the nature of the *Milinda Prasna*, between Menander and a Buddhist monk. The ex-Rājā of Venkaṭagiri has written a remarkable work in Telugu, in which he discusses some of the most abstruse doctrines of religion. Books in support of the Brahmo movement have been received from all the southern presidencies.

A collection of epigraphical songs by Tukarām, Nāma Deva, Eka-nātha, &c.; Kabirāj Bhukhan's short poems on Shivaājī and Chhatrasāl, the Rājā of Panna; and a collection of ballads in three parts devoted to the glorification of the Satara Rāj family, the Peshwa family, and the Marhatta Sirdārs, are publications of great value to the Marhatta people.

Among the serial publications of philological interest, Bābū Pratāpa Chandra Raya's English translation of the *Mahābhārata* is steadily approaching a conclusion. It has advanced to the *S'ānti Parvan*. Pandit Rāmanārāyaṇa Tarkaratna is issuing regularly in parts some of the most important works on Chaitanyaism in Sanskrit and in Bengālī. He is now engaged with the *Chaitanya Charitāmṛita Mahākāvya* and the *Haribhaktivilāsa*. The Khargavilās Press of Bankipur has issued,

under the distinguished patronage of Mr. Grierson, a complete *Rāma Charit Mānas*, commonly known as *Tulsī Kṛita Rāmāyāna*. It has been edited from very ancient MSS. Bábú Barada Prasád Basu's revised edition of *S'abdakalpadruma*, with copious and valuable additions, has come up to the letter *ya*, and his edition of the *Devībhagavat* is making fair progress.

The Anandásrama series of Sanskrit works, published at Poona, has issued six important works—*S'ri S'ankaradigvijaya*, with the commentary of Dhanapati Súri and extracts from the commentary of Achyuta Rao Modak, the *Rudrádhya*, with the Bháshyas of Sayana Bhaṭṭa Bhaskara, three *Upanishads* with rare commentaries, and Vidyá-raṇya Swámin's *Jivana Mukti Gítá*. The Kávyamálá series, published at Bombay, contains a very large number of poetical pieces of all sizes in Sanskrit, written mostly before the Muhammadan conquest. The MSS. of these works were discovered by Messrs. Bühler, Kielhorn, Bhandarkar, and Peterson in the various libraries of Western and North-Western India, both public and private, while in charge of the operations in search of Sanskrit manuscripts. The last number contains the *Hara Vijaya* by Rájánka Ratnákar, so well described in one of the Bombay Reports. The *Práchina Kávyamálá Grantha*, published from Ahmedabad and Baroda, has issued twelve parts. It contains the works of Gujarátí poets of great celebrity and popularity.

While treating of the publications of philological value in Bombay, the labours of Colonel G. A. Jacob deserve prominent notice. He has worked hard for eight years in preparing a complete concordance of the principal *Upanishads* and the *Bhagavat Gítá*, entitled *Upanishad Vákya Kosha*. The greatest activity in editing and publishing Sanskrit texts is to be found, as might be expected, in Benares, the centre of Hindú culture from the remotest period of Indian antiquity. The *Pandit*, a monthly paper edited by the Pandits of the Benares Sanskrit College, continues to be published. It contains many rare works of great value. In the Benares Sanskrit series Messrs. Griffith and Thibaut are publishing a number of philosophical works; and in the Vijayanagaram series under the superintendence of Mr. Venis, who is now engaged in the publication of the *Nyáya Kandali*, written by a Bengálí Brahman in the 10th century of the Vikrama era, much valuable work is done.

Nor should I omit to mention the *Ushá*, edited by the venerable Pandit Satyavrata Sámásramí, who has done so much for Vedic Literature in India. The *Ushá* is a Vedic journal, and it has already published a large number of small works bearing on the pronunciation, chanting and meaning of Vedic words.

Under this head we have a paper by Mr. C. H. Tawney, C. I. E., on some ancient Indian Methods of electing Kings, published in the *Proceedings* of November 1891; and another by Mr. W. P. Driver on some interesting Kolarian tribes of Chutia Nagpur and the borders of Orissa, published in Part I of the *Journal*. There is also an interesting paper in the *Journal* by Dr. Waddell on "Place and River Names in Sikhim," in which an account is given of the different ethnic elements of the population of this tract, and the etymology and meaning of names derived from different sources are determined.

In the *Indian Antiquary* we find papers by Mr. J. F. Fleet, C. I. E., on the Chronology of the Eastern Chalukya Kings, and on the computation of Hindu dates; by Major R. C. Temple, on the Burman system of arithmetic, a cumbrous system which, in a modified form, is still in vogue among Hindu astrologers all over India; by Professor Kielhorn, an examination of questions connected with the Vikrama era, and a paper on the Saptárshi era; and by Dr. Hoernle, two *paññavalis* of the Sarasvati Gachchha of the Digambara Jains,—the first publication of a complete series of the Pontiffs of the Digambara section of the Jains. There is also a series of papers on Indian folk-lore, by G. F. D'Penha, Pandit Natesa Shástri and Putlibai D. H. Wadia. Professor Bühler publishes a paper in Vol. V., Part 3, of the *Vienna Oriental Journal*, on the origin of the Gupta Vallabhi era, in which he proves, against Fleet, that the Gupta era is not a Nepalese but an Indian era, marking the epoch of the accession of Chandra Gupta I to imperial rule. The *Journal of the German Oriental Society* contains several papers of value on Indian Subjects.

*The Tribes and Castes of Bengal*, by H. H. RISLEY, C. I. E., C. S.; 4 volumes.—This extensive work, consisting of 4 volumes, gives us the results of the ethnographic inquiry instituted by the Government of Bengal in the beginning of 1885. The inquiry was originally intended to extend to the whole of India, but ultimately it was not found possible to go beyond Bengal. Mr. Risley, who was placed in charge of the inquiry, has succeeded in these volumes in bringing together what appears to be an exhaustive account of Bengal with reference to the tribes and castes inhabiting it. In the first two volumes he gives an enumeration and description of them in alphabetical order in the form of a glossary. In the last two are put together the tables of anthropometric data, on which Mr. Risley's ethnographic generalisations are based. These he sets out in the introduction to the first volume, and they form not the least important or interesting part of his work. The conclusions at which he arrives are briefly these: The whole of India is inhabited by a

long-headed (dolichocephalic) race; the broad-headed (brachycephalic) race occurs only along the northern and eastern borders of Bengal, and can hardly be deemed Indian at all. In the long-headed race, however, two extreme forms can be distinguished; one (the Aryan) has a straight, finely-cut nose, a long, narrow face, a well developed forehead, regular features, high facial angle, and fairly high stature; the other (the Dravidian) has a thick broad nose, low facial angle, thick lips, wide and fleshy face, coarse and irregular features, rather low stature, squat figure and sturdy limbs. Between these two extreme types a large number of intermediate groups can be distinguished, each of which forms for matrimonial purposes a sharply defined circle, commonly known as a caste, beyond which none of its members can pass. If these groups are arranged in the order of their average nasal index, or the formula indicating the proportion of the length of the nose to its breadth, so that the caste with the finest nose shall be at the top, and that with the coarsest at the bottom of the list, it is found that this order substantially corresponds with the accepted order of social precedence. Thus Mr. Risley arrives at the curious result, that it may be laid down as a "law of caste organisation in Eastern India, that a man's social status varies in inverse ratio to the width of his nose." Whether the two extreme types really represent two distinct races, as Mr. Risley is disposed to believe, or whether they do not rather represent the two extreme points of differentiation of the same race under differing conditions, is a question which may be considered open to further research. Mr. Risley's volumes are published as a preliminary edition in order to invite criticism with the object of supplying omissions and correcting mistakes. We may hope that their accomplished author will soon be enabled to give us the second edition of his valuable work in its final form.

*Vedic Mythology* by PROF. A. HILLEBRANDT of Breslau. 1st volume: *Soma and Cognate Deities.*" (In German).—The author of this excellent book will be well-known to many members of our Society as the editor of the *Sankháyana S'ranta Sútra* in the Bibliotheca Indica. He has made the study of the Vedas his speciality, and in the present work he has given us not the least important results of his researches. The question of the identity and the name of the famous *Soma* plant has been long discussed, and still remains undecided. It will be remembered that at the time of the Afghan Boundary Commission, the naturalist who accompanied it was instructed to make inquiries on the subject. These inquiries would perhaps have been more fruitful, if it had been possible to place in his hands a brief abstract from Sanskrit authors of all notices of the *Soma* plant occurring in them, leaving his mind unbiassed by

any theories. This want has now been supplied by Prof. Hillebrandt, and it should be a great help in any future practical inquiries. Unfortunately it now turns out that the oldest sources, the Vedas, afford very little definite information; but they show that the Soma was not the flower (hops) or fruit (grapes) of any plant, as some great authorities have thought, but young light-coloured shoots of a plant growing in mountainous places, whence they used to be brought down by traders and sold to the priests for their sacrifices. For the latter purpose four small and deep holes were dug in the ground, forming a small square; over these two wooden boards were laid to serve as "sounding boards;" over the boards a red skin was spread, the hairy side uppermost; on this skin the stones were laid with which the juice of the Soma shoots was expressed by pounding. Sometimes a mortar and pestle were used instead of the stones. The juice thus extracted was mixed with water in a large vessel, whence it was afterwards poured into smaller vessels and mixed with milk or liquor. For libation and consumption cups were used. In the second part of his work, Prof. Hillebrandt treats of the mythological transformation of Soma and its cult.

*The Computation of Hindu Dates in Inscriptions, with General and Special Tables.* By PROFESSOR H. JACOBI.—The substance of this work was originally published in the *Indian Antiquary*. It is now republished, enlarged and revised, as a part of the *Epigraphia Indica*. The verification of Hindu dates is an intricate business. It is beset with difficulties of two kinds: one is caused by the strictly astronomical basis of the calendar; the other is due to the intricacy of the calendar system, which is further enhanced by the variety of usages adopted in different parts of India as regards some of the elements. Professor Jacobi's work is a very successful attempt to reduce these difficulties to a minimum, and to all students of the epigraphical records of India, so many of which are dated, it is a most welcome contribution.

*The Badoej's*, by DR. JUL. JACOBS and J. J. MEIJER. (In Dutch).—This book gives an interesting account of a small and very little known community of people living in the wilds of the western part of Java,—the "Badoej's," as Dr. Jacobs spells their name. They are of particular interest to India, as representing probably a survival of Indian Buddhism. Owing to the strict seclusion in which they maintain themselves, very little has hitherto been known about them. Dr. Jacobs, as Sanitary Officer of the Dutch East Indian Legion, had special facilities of intercourse with them; and his book gives us the first trustworthy information on the religion, manners and customs of this interesting little people. The Badoejs are said to have retired into the wilds of Western Java on the conquest of their country by the Muhammadans under



Maulána Hasanuddín, in the early part of the 16th century. The principal names of the Hindu pantheon are still familiar to them.

It is in the department of Archæology and Epigraphy that the greatest activity is found. The *Epigraphia Archæology and Indica* is wholly, and the *Indian Antiquary Epigraphy* almost wholly devoted to it; and numerous papers on these subjects appear in the Journals of all Asiatic Societies. Mr. Fleet, Professor Kielhorn, Dr. Hultzsch, and Professor Bühler have published readings of numerous copperplate grants and other inscriptions in the *Indian Antiquary* and the *Epigraphia Indica*. Amongst the papers deserving of special mention are the following :—

(1) Prof. Bühler's papers in the *Epigraphia Indica* on "New Jaina Inscriptions from Mathurá." These inscriptions have all been recently dug up by Dr. Führer of the Archæological Survey. They are of very high importance as affording genuine contemporary evidence of the Jaina traditions.

(2) Prof. Bühler has also contributed to the *Vienna Oriental Journal* a paper on 'Indian Inscriptions to be read from below.' Dr. Hultzsch was the first to prove the existence of this curious class of inscriptions. Prof. Bühler shows that some hitherto unintelligible inscriptions make sense if read in this way.

(3) The same authority publishes Contributions to the Explanation of the Asóka Inscriptions, in the *Indian Antiquary* and in the *Journal of the German Oriental Society*.

(4) Prof. Kielhorn has a paper on "Sanskrit Plays, partly preserved as Inscriptions at Ajmere," in the *Indian Antiquary* for June 1891. These are two unique inscriptions of very great interest, inasmuch as they preserve portions of two hitherto unknown dramas, and afford actual proof of the fact that Hindu kings composed poetry. One of the dramas is a composition of Vighraha Rája Deva, a Chohan Prince of the 12th century A. D.

(5) M. Etienne Aymonier publishes in the *Journal Asiatique* of the French Asiatic Society, a Study of the Chame Inscriptions in the vulgar language of the ancient kingdom of Champa in Further India (Annam). They date from the beginning of the 9th century A. D. onwards.

One of the most useful publications of the year is Dr. A. Führer's report on "The Monumental Antiquities and Inscriptions in the N.-W. Provinces and Oudh, described and arranged." This is a goodly volume, 425 pages quarto, published by the Archæological Survey of India. The information in it was partly collected by Dr. Führer himself, partly reprinted by him from different Oriental scientific journals, such as the

Journals of the Asiatic Society of Bengal, the Royal Asiatic Society of Great Britain, the Indian Antiquary, &c., It serves the useful object not only of putting on record a complete list, so far as they are known, of the antiquities and epigraphs of each district, but also of furnishing general information for the guidance of those who may have the wish and the leisure to interest themselves in the character and history of the places in which they live.

*Transfer of the Behar Collection of Buddhist remains to the Indian Museum.*—A very important collection of Buddhist and other Indian remains was made some years ago by Mr. Broadley, then subdivisional officer of Behar in the district of Patna. This is the country, formerly known as Magadha, in which the Buddha lived and preached, and which is associated in the closest way with the *origines* of Buddhism. A suggestion having been made that the collection should be transferred to Bodh Gaya, the Trustees of the Indian Museum appointed a Committee to consider the question. The Committee in the first instance deputed Babu Púrna Chandra Mukharjea, an archæologist who had been recommended to their notice, to proceed to Behar and make a catalogue and descriptive list of the objects forming the collection. From his report it was abundantly manifest, in the first place, that the collection, the Buddhistic portion of which Dr. Burgess had described as the largest in India, was of rare interest and value to the historical student; and in the second, that it was exposed to serious risk from neglect and mischief, from the action of the weather, and from depredations, which had already wrought deplorable havoc. The Committee therefore strongly recommended that the collection should be preserved from further injury by being transferred to the Indian Museum. On a representation being made to him, Sir Charles Elliott, the Lieutenant-Governor of Bengal, generously promised a grant of Rs. 5,000, partly to defray the cost of transporting the collection to Calcutta, and setting it up in the Museum, and partly to provide for the prosecution of further researches by Babu P. C. Mukharjea at Rajgir and Barragaon, two places in the neighbourhood, which are no other, if Genl. Cunningham's identification be accepted, than Rájagriha and Nálanda, so well-known in connexion with the history of Gautama Buddha. The Babu's report showed how full these places were of remains of the highest interest, what damage had been done to them by the action of the climate and of men, and how desirable it was both to preserve permanent records of them, and to keep them from further decay. It is a matter of congratulation that, thanks to the liberality of the Lieutenant-Governor, this valuable collection of over 600 sculptures, Buddhistic and Brahmanical, is now safely housed in the Indian Museum, where it is not only secure from

further loss and injury, but is made permanently accessible to the student of archæology and of the history of religions. A full catalogue of the collection will be prepared as soon as Babu P. C. Mukharjea returns from his present tour.

*Site of the Black Hole of Calcutta.*—During the year 1891 a considerable advance has been made towards accurately determining the topography of Old Fort William, Calcutta, the result of which has been to disturb the accepted views regarding the site of the Black Hole. Reports of these investigations have appeared from time to time in the daily papers; but it seems desirable to give a permanent place in the *Proceedings* of this Society to a short account of a discovery which we owe to the energy of our Philological Secretary, Mr. C. R. Wilson, to whose kindness I am indebted for the following notes.

The first attempts in this direction were made nine years ago by Mr. R. R. Bayne, a member of the Asiatic Society, who discovered nearly all the foundation walls of the northern portion of the Fort, during the erection of the East India Railway Offices in Clive Street. In February 1883, Mr. Bayne laid before the Asiatic Society the results of his investigations. Unfortunately they suffered under two disadvantages. In the first place, the portions of the old building actually excavated were on the northern and least interesting side of the fort. In the second place, Mr. Bayne had no proper plan to guide him in his conjectures as to the position and nature of the remaining portions of the fort. The investigations of 1891 have been carried on under far more favourable conditions. Availing himself of the opportunity afforded him by the erection of the New Government Offices in Dalhousie Square, Mr. Wilson has succeeded in discovering considerable remains of the buildings on the south side of the Fort, where the Black Hole and other places of interest were situated; and he has had the advantage of being guided in his excavations by a detailed plan of Fort William in 1753, a photographed copy of which was presented to the Asiatic Society by Mr. T. R. Munro. The results of these investigations have been so successful that it has been found possible to draw up a plan of the Old Fort, accurately showing its position with reference to the modern houses now standing on or near its site, together with the main features of its principal buildings. Mr. Wilson's investigations began with the discovery of the true dimensions and position of the east gate of the Fort. The gate was found to be much smaller than Mr. Bayne had conjectured it would be. Its centre lies on the central line of the road in front of Writers' Buildings, which has always been one of the principal streets of the city. In the next place Mr. Wilson has traced out, as far as was possible, the main features of the factory within

the Fort, in which were situated the apartments of the Governor. This was in its day one of the finest English houses in India. It consisted of a main building facing the river, with two wings behind at right angles to the main building. Almost all the foundation walls of these wings have been traced out by excavations, and the position of the walls of the main building has been ascertained, although the walls themselves could not be traced out, as the site of the main building is at present occupied by the Government Opium godowns and by the out-houses of the Custom House. Besides this, Mr. Wilson has endeavoured as far as possible to ascertain the positions of the south curtain, of the south-east bastion, and of that portion of the east curtain which lay between the south-east bastion and the east gate, together with the adjoining arcades and chambers. Considerable difficulty has been experienced in coming to any definite conclusion on these points; for, in the first place, the Post Office covers the site of the south-east bastion and the adjacent south curtain wall, and so prevents any extended excavations in this region; and in the second place, the plan of the old Fort which has elsewhere proved to be extremely accurate, seems at this point to fail. Still, in spite of these difficulties, Mr. Wilson has been able to definitely fix the position of the south curtain wall and of the three parallel lines of arches within it, and to show that tradition was right in asserting that the old arcade and arches which still stand in the Post Office compound were part of the old Fort. The arches of the south face of this arcade are what remains of the first line of arches within the south curtain, and the arches in the middle of the arcade are what remain of the second line of arches. The foundation wall of the third and innermost line of arches has been traced out for some distance. It was found in the passage on the north of the Post Office. Starting from this wall, or, what is practically the same thing, from the north face of the Post Office, Mr. Wilson has traced out the east curtain wall as far as the east gate, the inner wall containing the chambers built against the curtain, and the wall of the piazza or verandah running west of the chambers. The Black Hole prison was one of these chambers; but to fix its exact position it is necessary to ascertain, not merely the positions of the curtain wall and the inner wall, which formed its eastern and western walls, but also the position of the cross-walls which formed its northern and southern boundaries, and divided it off from the other chambers built against the east curtain. Unfortunately these cross-walls were run up with hardly any foundation, and hence it is extremely difficult to trace their position. One such cross-wall has been found at a distance of about 100 ft. from the centre of the east gate, and to the south of this there is another cross-wall which Mr. Bayne discovered in 1883, and

which according to his theories must have been the north wall of the prison. According to Mr. Wilson this cannot have been the case; because the space south of this cross-wall is shown by the plan of the Fort to have been occupied by the foot of the staircase leading to the south-east bastion. On the other hand Mr. Wilson thinks it quite possible that this wall is the south wall of the prison. Mr. Wilson, however, still hopes to gain additional information concerning this and other points in the topography of the Fort by further excavations and by the examination of old records.

*Discovery of the Bower MS.*—I will now draw attention to the great event that has marked the history of the year, in the discovery in Kashgaria of the Bower MS., so called by Dr. Hoernle after Lt. Bower, who found and brought it to India. Of the history of this discovery we have the following account by Lt. Bower. The MS., which is written on birch-bark, "had been dug out of the foot of one of the curious old erections just outside a subterranean city near Kuchar." These erections are described as being "generally about 50 or 60 feet high, in shape like a huge cottage-loaf; built solid of sun-dried bricks with layers of beams now crumbling away." Dr. Hoernle reasonably conjectures that these erections are Buddhist stūpas. Such stūpas, he observes, often contain a chamber enclosing relics and other objects; these chambers are generally near the level of the ground, and are often dug into by persons in search of hidden treasure. From such a practically air-tight chamber, Dr. Hoernle thinks, this MS. was probably dug out, perhaps not long before it came into Lt. Bower's possession; and there is no reason why a birch-bark MS., thus preserved from the chances of injury, should not endure for any length of time.

The MS. was sent by Lt. Bower to Col. Waterhouse, who exhibited it at the meeting of the Society in November 1890, but it could not then be deciphered. An account of its acquisition by the finder, together with facsimile reproductions of two leaves of the MS., appeared in the *Proceedings* for that month. On Dr. Hoernle's return to India in March 1891, the MS. passed into his hands; and in the *Proceedings* for April Dr. Hoernle gave a preliminary account of the MS., which he had then ascertained to be written in Sanskrit of a very archaic type. The detailed description of the MS. was published in No. II of Part I of the *Journal* for 1891. In that paper Dr. Hoernle minutely analysed the forms of the letters occurring in the MS.; and by a chain of arguments, the strength and lucidity of which are such as to compel the assent of every reader, proved that the MS. was written not in the Śārada character of Kashmir, as had been previously conjectured, but in the Gupta character, a much earlier form; that separate portions of it were written by

different scribes and at different dates ; and that the latest portion must be ascribed to a date not later than the second half of the 5th century, or say 475 A. D., while the earlier portion must be referred to a date half a century earlier. The Bower MS. is therefore the oldest Indian MS. yet discovered, and one of the oldest MSS. existing in the world.

As to its subject matter, the MS. is composed of five distinct portions, of which the first and fifth are medical works, the latter merely a fragment. The second and fourth are collections of proverbial sayings ; and the third contains the story of a charm against snake-bite, given by Buddha to Ananda while he was staying in Jetavana. The following translation of the introductory lines of the first portion will be interesting :—"Salutation to the Tathágatas. I am going to write an approved compendium (of medicine) called the Návánítaka, based on the excellent system of the Mahárshis as composed by them in olden times. Whatever is useful to men and women afflicted with various diseases ; whatever is also useful for children, that will all be declared in this book. It will commend itself to those physicians whose minds delight in conciseness ; but on account of the multiplicity of its prescriptions, it will also be welcome to those whose minds love many details." After enumerating the contents of the several chapters (16), the preface concludes,—“It should not be given to any one who has no son, nor to any one who has no brother ; nor should it be taught to any one who has no disciple.”

Dr. Hoernle has now transcribed nearly the whole of the MS., which consists of 55 leaves, and has translated a large portion of it. In the forthcoming 3rd number of the *Journal*, he will publish “An Instalment of the Bower MS,” giving the text, and an English translation (with notes) of its 5th portion, consisting of five leaves and containing a fragment of a medical work. He has succeeded in tracing some of the prescriptions given in the MS. to the *Súsruta*, *Chakradatta*, and *Vangaséna*—medical works still current. Some of the prescriptions are verbally identical.

Dr. Hoernle's estimate of the age of the MS. is confirmed in a striking manner by Dr. Bühler of Vienna, who, examining the question by the light of the account and the facsimile plates published in the *Proceedings* of November 1890, came independently to the same conclusion as to its date. In the account which Dr. Bühler published in the July number of the *Vienna Oriental Journal*, he writes as follows :

“I trust that Dr. Hoernle, the able and learned Secretary of the Society, will take the volume in hand and give us a full account of its contents. If the Society wishes to render a real and great service to the students of Indian Palæography, it will publish photo-etchings of the whole volume. Every line of the MS. is of the highest importance.”

It would, however, have been beyond the means of the Society to carry out the work on so elaborate a scale; and when this fact was represented to the Government of Bengal, and subsequently to the Government of India, these two Governments, by a joint arrangement, very readily and liberally agreed to render the necessary assistance for the editing and publication of the MS. The Society will be glad to learn that the Government of Bengal has relieved Dr. Hoernle of his other duties during the whole time necessary for the completion of the work, while the Government of India has undertaken to defray the considerable expenses connected with the publication, including photographic facsimiles of every page of the MS. For these services to scholarship, the cordial thanks of the Society and of all interested in the progress of Oriental research are due to the Governments concerned.

[Since the foregoing was sent to Press, Dr. Hoernle informs me that he has received a further communication on the subject of the date of the MS. from Professor Bühler, who now intimates that he is inclined to assign to the MS. an even higher antiquity than that already assigned to it, possibly by 50 or 100 years. Indeed, Dr. Hoernle himself has independently come to the conclusion, since writing his paper of November 1891, that no part of the MS. can probably be dated later than the first half of the 5th century. Dr. Bühler, I may add, in a second paper published in the *Vienna Oriental Journal*, recommends Dr. Hoernle's "able and elaborate argumentation" to all Indian epigraphists for most careful study, and describes it as "by far the most important contribution to Indian epigraphy which has appeared of late."]

I may begin my remarks under this head with the following extract from the Preface to an elaborate report on the progress of Numismatics in India from 1886 to 1891, which was presented by Mr. Vincent Smith to the recent Congress of Orientalists. This preface is republished in the *Academy* of October 31st, 1891. After giving a very interesting description of the eleven classes into which he divides Indian coins, with an account of the chief discoveries under each, in which he quotes largely from the *Proceedings* of this Society, Mr. Smith proceeds:—

"I shall conclude by calling special attention to the disinterested labours of Dr. Hoernle, much of whose valuable time is taken up by the examination of the thousands of coins which are poured in upon him from all quarters. In his address for 1889, the President of the Asiatic Society of Bengal records the fact that during the previous year Dr. Hoernle had examined and reported upon more than 4,000 coins, of which vast number 2,460 were noted in the *Proceedings*. In 1887 the same indefatigable worker examined more than 3,200 coins."

Dr. Hoernle informs me that he has examined and reported on about 2,000 coins since his return to India in March 1891, though only one among them required particular notice, namely, the very rare gold Gupta coin of the " Couch " type, noticed below. Nearly all were sent to him under the Treasure Trove Act.

Mr. J. Rodgers' private collection, containing upwards of 8,000 coins, has been purchased by the Punjab Government for the Lahore Museum, —a great acquisition. Duplicates will probably be supplied to other Museums. Its special feature is the collection of Indian Moghul coins, which is almost exhaustive.

Mr. Rivett-Carnac's valuable collection will probably, it is understood, be purchased by the Government of India for the Indian Museum. The special feature of this collection is the series of gold Gupta coins, which is unequalled in quantity and quality, containing upwards of 100 specimens, some unique and most of them rare; *e. g.*, the gold coin of the " Couch " type of Chandra Gupta II, an account of which by Dr. Hoernle was published in our *Proceedings* for August.

An important find of Roman coins was made near Bangalore in the course of the year. They number 163, all silver *denarii* of ten types, belonging to the reigns of Augustus, Tiberius, Caligula, Claudius and Antonia, mostly of the two first-named. All are of known types. A report on these coins has been given by Mr. Rice in the Records of the Indian Museum, Calcutta, to which specimens of the coins of Augustus and Tiberius have been presented by the Mysore Government.

The following work recently published by an Honorary Member of our Society deserves prominent notice:—

*Coins of Ancient India from the earliest Times down to the Seventh Century, A. D.*—By Major-General SIR A. CUNNINGHAM, K. C. S. I., C. I. E., B. E.

This is a most welcome contribution from the greatest living authority on Indian numismatics; all the more so, as it treats of the more obscure classes of the ancient Indian coinage. The well-known and generally well-preserved coins of the Satraps of Suráshtra, and of the Gupta kings of Magadha, have been fully described in the *Journal of the Royal Asiatic Society*, the former by the late Pandit Bhagwán Lal Indrají, the latter by Mr. V. Smith. But no one seemed to feel equal to the task of bringing together and classifying the numerous smaller classes of silver and copper coins, the ascription of which was obscure, and many of which were in a very indifferent state of preservation, Sir A. Cunningham alone possessed the requisite knowledge and experience; and the long-expected work from his pen will, therefore, be most gratefully welcomed by all numismatists. It first explains,



in an introduction, the origin of Indian coinage, and its relation to that of Assyria, Babylonia, Phœnicia and Greece. It then describes successively the so-called punch-coins, which may be as old as 600 B. C., and the coins of Taxila, Odumbara, Kuninda, Kosambí, Yaudheya, Panchála, Mathurá, Ayodhyá, Ujain, Eran, the Andhras of South India, and Nepal. These descriptions are illustrated by 13 plates and a map. It may be added, that the learned author promises to publish a second volume, which will describe the coins of mediæval India, from 600 A. D. down to the Muhammadan conquest.

Mr. E. J. Rapson contributed "Notes on Gupta Coins" to the *Numismatic Chronicle*, Part I, for 1891. The paper gives some additions to Mr. V. A. Smith's standard work on the subject. The *Indian Antiquary* for September 1891 contained a paper by Dr. E. Hultsch on the "Coins of the Kings of Vijayanagar," being the first attempt to give a complete list and description of these coins.

I now turn to that department of your work which deals with the Natural Sciences. Of Part II of the Society's *Journal*, which is reserved for papers on these subjects, three parts have already appeared during the past year, and the volume will be completed by part 4, which is now in the press and will shortly appear with the index and title-page for 1891.

In reviewing the Zoological work done during the year 1891, I have thought it sufficient to confine my observations to purely Indian communications, either from members of this Society throughout the country, or from others working in the Bombay and Madras Presidencies.

There is no longer much scope for original work among mammals, and I have only to notice the issue of a carefully compiled *Catalogue of Mammalia in the Indian Museum*, by Mr. W. L. Sclater, M. A., F. Z. S. This catalogue includes the orders from *Rodentia* to *Monotremata*, and is really the second part of a catalogue commenced by Dr. Anderson and issued in 1881. Mr. Sclater has further drawn up and published a *List of the Snakes in the Indian Museum*, and has also contributed to the Society's *Journal* a short but valuable paper, accompanied by a plate, on the Snakes in the Indian Museum. Five new species were described, viz:—*Ablabes Stoliczkae*, *Simotes Wood-Masoni*, *Zaocys Tenasserimensis*, *Tropidonotus Pealii*, and *T. nicobarensis*.

In the January number of the *Annals and Magazine of Natural History*, Mr. J. Wood-Mason and Dr. A. Alcock published the first part of a most interesting and useful paper on the results of the deep-sea dredgings made by the officers of H. M. Indian Marine Survey Steamer "Investigator" during the season 1889-90. The materials dealt with

were collected in depths ranging from 90 to 1439 fathoms, and, in the paper referred to, were arranged in catalogue form, but no systematic details were given except in the case of *Fishes* and *Crustaceans*. In the order *Madreporia* Dr. Alcock named and described three new corals; two, *Caryophyllia ephyala* and *Stephanotrochus nitens*, taken by the collectors on the "Investigator," and one, *Rhisotrochus Worsleyi*, presented to the Indian Museum by Captain Worsley. The type specimen of *Stephanotrochus nitens* is a very fine one. A complete list of 35 deep-sea fishes collected during that season is given, and includes 24 new species. Of the other classes noted in this part of the paper, it must be mentioned that the deep-sea *Holothurians* were worked out, named, and described by Dr. J. H. Tull Walsh, who published the results of his investigations in the *Journal* of our Society, Part II, No. 2. Dr. Walsh has described all the deep-sea forms obtained from 1887 to 1891, and notes two new genera and seven new species. In connexion with the study of *Holothurians*, I would draw attention to a valuable translation of a paper by Dr. Hubert Ludwig on the development of these creatures, which appeared in the *Annals and Magazine of Natural History* for December 1891. In the February issue of the above-mentioned *Journal* another portion of the paper by Mr. Wood-Mason and Dr. Alcock appeared, and this is chiefly noteworthy on account of the new species of *Crustaceans* described by Mr. Wood-Mason, and for the very good original drawing of *Nephropsis Atlantica* ♂ Norm. which it contains. The March number contained a further instalment of notes on *Crustaceans* by Mr. Wood-Mason, the most interesting and important of these being the full and clear description of a new crab, *Parilia Alcocki*.

To the *Annals and Magazine of Natural History* for July, August, October, November and December, Mr. Wood-Mason and Dr. Alcock contributed a series of papers showing the results of the "Investigator" deep-sea dredgings during the season 1890-91; and in the issues for July and August Dr. Alcock described fully many new bathybial fishes. In the October and November numbers Mr. Wood-Mason contributes further to the literature of the *Crustacea*, and finally in the December number Dr. Alcock describes certain new star-fishes. These two authors have also conjointly contributed a most important paper to the *Proceedings of the Royal Society*, "On the Uterine Villiform Papillæ of *Pteroplatea micrura* and their relation to the Embryo, being Natural History Notes from H. M. Indian Marine Survey Steamer 'Investigator,' Commander R. F. Hoskyn, R. N., Commanding, No. 22." To these nutrient villi, which are found in certain selachian uteri, the authors have given the name of *trophememata*, at once suggesting the part they play in relation to the embryo, which is practically suckled in utero. I will com-

plete this rough sketch of Dr. Alcock's work during 1891 by referring to a paper contributed by him in March to the *Proceedings of the Zoological Society of London*, "On a Viviparous Bathybial Fish from the Bay of Bengal, *Saccogaster maculata*," in which the embryo is developed while still in the oviduct. The male of this species is provided with a distinct copulatory organ, but there does not appear to be any special modification of the oviduct in the female.

In the December *Bulletin of the Microscopical Society of Calcutta*, I find an interesting paper by Mr. Wood-Mason on *Clathrulina elegans*, Cienk., a pretty *Protozoan*, a specimen of which was discovered in the General's Tank by Mr. W. J. Simmons, an active member of the Microscopical Society.

Outside this Presidency Mr. Alfred Gibbs Bourne, lecturer on biology in the Madras University, has done some good work during the past year, contributing papers to the *Quarterly Journal of Microscopical Science* on *Naidiform Oligochæta*; on *Megascolex ceruleus*, Templ., found in Ceylon; and on *Pelomyxa viridis*, a new species of *Rhizopod* discovered in a tank near the Presidency College, Madras. Of Mr. Bourne's papers the most important one is that on the *Naidiform Oligochæta*.

The file of the *Journal of the Bombay Natural History Society* shows that its members have not been idle during 1891. Lieut. Barnes, F. Z. S., continues his notes on "Nesting in Western India," and his letterpress is accompanied by very trustworthy coloured drawings of most of the eggs collected. Mr. A. W. Morris, F. Z. S., contributes to the *Journal* an interesting paper on "Abnormal Horns of the Indian Antelope," with a plate.

Turning to another branch of Natural Science I must not forget to mention that Col. Waterhouse has been continuing his observations on electro-chemical reversals of photographic plates with Thio-carbomides, and has published notes in the *Proceedings* of this Society and in the *Journal of the Photographic Society of India*.

The fascinating study of Indian Entomology has attracted a large number of workers during the past year, and several interesting communications upon the subject have been read before this Society.

Among the publications of the year may be noticed:—

(1.) Mr. Hampson's elaborate monograph on the moths of the Nilgiris, published by the Trustees of the British Museum. In this work Mr. Hampson describes and figures about three hundred new species, the classification being chiefly based upon the Indian Museum Catalogue of Moths. The figures are coloured, and the work will be a most valuable aid in the identification of species.

(2.) Part IV of Mr. Distant's monograph on Oriental Cicadidæ, published by order of the Trustees of the Indian Museum. This part, which comprises about 42 species and is beautifully illustrated, brings the work down to the genus *Cicada*, which is the last in the family; it may therefore be hoped that the monograph will soon be completed. The Cicadidæ are a small group of insects which attract some attention in India on account of the species which sing so lustily in the still air of the Himalayas.

(3.) The second part of Mr. Wood-Mason's *Catalogue of Mantodea*, published by order of the Trustees of the Indian Museum. This part, which is illustrated with two excellent plates, deals with nineteen species of Mantidæ from different parts of the world. It includes descriptions of two new species from the Indian region.

(4.) Parts 4 to 7 of Mr. Moore's extensive work on the Lepidoptera of India. The seven parts of this book that have appeared deal altogether with 78 species of Euploëinæ; and the scope of the undertaking may be gathered from the fact that, on the present scale, something like 800 quarto plates and 2000 pages of letterpress of corresponding size will be required for the description of the butterflies alone.

(5.) Mr. Watson's *Hesperidæ Indicæ* (Vest and Co., Madras). This is a useful compilation of descriptions of Indian Hesperidæ, which have hitherto been scattered over a number of more or less inaccessible publications.

Numerous papers and reports on Indian Entomology have, as usual, appeared in the serials of the past year.

In the *Journal* of this Society, Dr. J. H. Tull Walsh gives an interesting account of some spiders which mimic ants. Mr. Doherty describes a number of new and rare Indian Lycænidæ, besides contributing some valuable notes on the butterflies of the little known islands of Engano, Sumba, and Sumbawa in the Malay Archipelago. Mons. Bigot contributes the first part of his *Catalogue of the Diptera of the Oriental Region*, and the Rev. A. E. Eaton furnishes a paper on the Ephemeridæ of the Indian Museum.

In the *Scientific Memoirs by Medical Officers of the Army of India*, Dr. J. H. Tull Walsh writes on the habits of certain harvesting ants which he found at work both at Pooree and on the Maidan in Calcutta.

In *Indian Museum Notes*, Lord Walsingham describes a new species of Tineidæ which attacks tea in Ceylon; Mons. Bigot describes a new fly which attacks melons in Baluchistan; Mr. Maskell describes some new species of Coccidæ which attack tea and other plants; Mr. Moore and Mr. G. C. Dudgeon write on a new Psychid which attacks the Sâl tree in the Darjeeling district; Mr. Cotes gives a number of notes on

insects sent to the Indian Museum as destructive to crops, with descriptions of new species by Messrs. Moore, Buckton and Kerremans. In the same periodical also appear reports by Mr. Cotes on the Wild Silk Insects of India, on White Insect Wax in India, and on the Locusts of Bengal, Madras, Assam and Bombay; also a paper by the late Mr. E. T. Atkinson on American blight.

In the *Journal of the Bombay Natural History Society*, Mr. Watson writes on some butterflies of the Chin Lushai Hills; Mr. Betham on the butterflies of the Central Provinces; and Mr. de Nicéville on new and little known butterflies from the Indo-Malayan region. Brief entomological notes also appear by Captain Sage and Mr. Wroughton, besides a reprint of a report by Mr. Cotes on the Locust of North-Western India, which was out of print.

In the *Transactions of the Entomological Society of London*, Colonel Swinhoe describes a number of new species of moths from South India. Mr. Snellen gives a Catalogue of the Pyralidina of Sikkim, and Professor Westwood describes an aphid which infests bread-fruit trees in Ceylon.

In the *Proceedings of the Zoological Society of London*, Mr. Kirby describes several new species of dragon-flies from Ceylon, and Mr. Elwes discusses the butterflies collected by Mr. W. Doherty in the Naga and Karen Hills and in Perak.

In the *Journal of the Linnean Society of London*, Mr. Kirby gives a revision of the Forficulidæ, and amongst others, he describes some new species from India and Ceylon.

In the *Annals and Magazine of Natural History*, Mr. Gahan describes five new species of Longicorn Coleoptera and three new Galerucidæ; Mr. Waterhouse describes five new species of Scarabæidæ; and Mr. Warren three new species of Pyralidæ; all from the Indian region.

In the *Annales de la Société Entomologique de Belgique* are a series of papers on the Coleoptera collected by Mons. Cardon, Missionary in Chota Nagpore. Of these Coleoptera, the Buprestidæ are described by Mons. Kerremans, the Tricentenotomidæ and Cerambycidæ by Mons. Lameere, the Haliplidæ, Dytiscidæ and Gyrinidæ by Mons. Severin, the Cicindelidæ by Mons. Fleutiaux, and the Elateridæ by Mons. Candèze. Mons. Forel also describes some new species of Indian ants; Mons. Kerremans writes on a Buprestid from the Indian Museum collection, and Mons. Haylaerts describes some new Indian Psychidæ.

In the *Memoirs and Proceedings of the Manchester Literary and Philosophical Society*, Mr. Cameron describes a number of minute Hymenoptera, some of them from the Indian Museum collections.

The contribution to Indian Botany during the year under review

## Botany.

that possesses the greatest general biological interest is a striking paper by the late Dr.

A. Barclay *On the Life-history of a remarkable Uredine (Uromyces Cunninghamianus)* published in the *Transactions of the Linnean Society*, Vol. 3. Hardly less interesting is a noteworthy paper by Dr. D. D. Cunningham, F. R. S., *On some species of Choleraic Comma-Bacilli occurring in Calcutta*, published in *Scientific Memoirs by Medical Officers of the Army of India*, Part vi. This latter periodical contains two papers on cryptogamic botany by Dr. Barclay—on *Two Autocious Cœmata in Simla*, and on *Rhododendron Uredinæ*.

The most important contributions to Indian Systematic Botany have been the completion of Sir Joseph Hooker's masterly account of the Indian *Orchidaceæ*, in Part xvii (the opening portion of Vol. vi) of the *Flora of British India*; and revisions by Dr. G. King, C. I. E., F. R. S., of great economic as well as systematic value, of the Indian *Magnoliaceæ* and of the Indian and Malayan species of *Myristica*, both contained in *Annals of the Royal Botanic Garden, Calcutta*, Vol. 3, which has been issued during the year. In the Society's *Journal* Dr. King has also continued his *Materials for a Flora of the Malayan Peninsula*, a systematic work of the highest value. The part last published (No. 3) contains description of the species of *Malvaceæ*, *Sterculiaceæ* and *Tiliaceæ*. A valuable contribution to systematic botany during the year has been an account, by Dr. D. Prain, of the genus *Gomphostemma* in *Annals of the Royal Botanic Garden, Calcutta*, Vol. 3. Dr. Prain has also contributed to the Society's *Journal*, Part II, descriptions of a species of *Nepeta* and of two species of *Glyptopetalum*. Sir D. Brandis has noted in the *Indian Forester* (Oct. 1891) the existence in Burma of a new species of *Terminalia*; and Mr. H. N. Ridley has described four new orchids in the *Journal of the Linnean Society*.

The most important contribution to Indian Phyto-geography during the year has been *A Sketch of the Vegetation of British Baluchistan, with Descriptions of New Species*, by Mr. J. H. Lace, of the Indian Forest Department, assisted by Mr. W. B. Hemsley, of the Kew Herbarium. Dr. Prain has contributed a paper to the Society's *Journal*, Part II, on *The Vegetation of the Coco Group*, and has also published in the Society's *Proceedings* (Dec. 1891) an account of a botanical visit to Little Andaman and the Nicobars, with lists of plants from two islands never before botanically investigated.

The most important contribution to Indian Economic Botany for the year has been the issue of Vol. 5 of the *Dictionary of the Economic Products of India*, by Dr. G. Watt, C. I. E. The volume has been prepared by Dr. Watt, with the collaboration of Mr. J. F. Duthie and of Drs. J.

Murray and W. R. Clark, and embraces economic subjects, alphabetically arranged, from *L* to *O*.

The Geological Survey Department continues to direct its attention to economic mineral exploration ; though geological investigation is kept in fair progress. The very extensive area occupied by the *Dharwars* (Transition) in the Anantapur, Bellary, Cuddapah, and Kurnool districts of the Madras Presidency has, for all practical or economic purposes, been fully surveyed by Mr. Foote, and its position in the formational succession of India has thus been brought into closer correlation with certain transition divisions in Central India and the north-west frontier of Bengal, particularly the *Gwaliores* and the *Bijawurs*. At the same time, the associated crystalline rocks of this region have been differentiated into two series ; the more foliated (or even schistose) sub-division of which can be connected with other bands in the Carnatic and Northern Districts, the whole constituting a distinct newer sub-series in the crystallines of Southern India. The importance of this survey of the Madras gneisses becomes manifest when considered in the recent light thrown on their relations by the remarkable paper, "*Contributions a l'étude des gneiss à pyroxène et des roches à wernérite,*" by M. Al. Lacroix, in the *Bulletin de la Société Française de Minéralogie*, for April 1889 ; which gives the result of the first detailed microscopical work on the crystalline rocks of Ceylon and Salem.

In Baluchistan Mr. Oldham's work has been among the Cretaceous, Tertiary and Recent formations ; the most interesting and important feature of which has been his recognition of a series of passage-beds, constituting his *Dumghan Group*, which he describes as probably representing the gap between the Secondary and Tertiary periods in Europe. This is an important link in the chain of evidence already gained in Peninsular India and in Sind, regarding the occurrence of series of strata offering similar interpretation. His examination of the recent deposits in the valley plains of Quetta, Pishin and the Dashti-Bedaulat, in connexion with the interesting group of natural artesian wells at Quetta itself, has enabled him to report on the mode of occurrence and probable distribution of artesian waters in these valley plains.

On the North-Western Frontier, the posting of Mr. Griesbach with the Miranzai Force, and of Mr. Middlemiss with that of the Black Mountain Expedition, afforded opportunities for some examination of the geology of those regions. Mr. Griesbach's survey has furnished material for a report which includes Notes on the Safed Koh and its skirting ridges ; on the Geological Results of the Miranzai Expedition ; on the Geology of the Khaibar hills ; and on the Petroleum springs of

Pannoba. The main feature in this report, of interest to geologists in Europe, is his discussion of the possible-connexion of the Safed Koh with the Hindu Kush system. He goes entirely against Prof. Waagen's extended interpretation of the views of Prof. Suess, as given in the former author's latest fasciculus of the Salt-Range Fossils (*Palæontologica Indica* Series XIII, Vol. IV, Part 2, *Geological Results*); concluding that the Safed Koh is distinctly not part of the Hindu Kush system. Orographically speaking, it differs in strike; and structurally it is not analogous to the latter. The Hindu Kush contains, within its flexures, a series of marine miocene beds which take part in all the contortions and flexures which have affected the older rocks; it therefore dates in its entirety from post-miocene times. On the other hand, within the Safed Koh system there is no marine formation interposed between the later nummulitics (Murree series) and the Sivaliks. The elevation of this area was therefore finished, or at all events sufficiently so to form dry land, in miocene times, together with the ground north-east of it in the Himalayan system. The petroleum shows at Pannoba in Kohat are extremely poor; and Mr. Griesbach's examination of them does not lead to any prospect of improvement by drilling.

In mineral exploration, the work of the Survey may be summarised as follows: complete localisation of the important gold tracts in southern India; recognition of indications suggestive of the possible existence of lower Gondwana coal-measures under the Sripermatour group near Madras; examination by boring of the Daltongunj coal-field in Bengal; completion of the Darjiling coal survey; a fairly promising survey of the copper occurrences in Sikkim; renewed examination of the Garo hills coal; coal and oil exploration in Baluchistan and the south-east slope of the Takht-i-Suleiman on the Punjab frontier; and continuation of the Mergui tin exploration with very favourable results.

The Survey of India Department under Colonel Thuillier, R. E., again has a good record of geographical reconnaissance, the total area of new country mapped on various scales during the Survey year 1890-91 amounting to no less than 103,426 square miles. This area includes portions of Persia, Baluchistan, the North-Western Frontier of India, and Upper Burma, and is exclusive of the area surveyed by the topographical and revenue parties of the department.

*Upper Burma.*—Four columns operated on the Frontiers of Upper Burma during the season 1890-91, and were all accompanied by survey detachments. That under Lt. Elliott proceeded from Bhamo along the right bank of the Irrawaddy to the confluence of its two main branches,

**Survey of India Department.**

**Geographical Explorations & Surveys.**



the Malikha and the 'Nmaikha, at about 150 miles by land from Bhamo. Some rough measurements taken here gave approximately 33,500 cubic feet per second as the volume of the 'Nmaikha or eastern branch, while that of the Malikha or western branch was only 23,000. The temperature of the water in the former was also found to be 5° or 6° colder than that of the latter, from which it would appear that the 'Nmaikha receives more snow water than the western branch. The Malikha is navigable for boats when the water is low to Sardan, 24 miles north of the confluence, and possibly much further, but owing to rapids the 'Nmaikha is only navigable some six or seven miles from the junction. The latter being wider and deeper than the Malikha, and having the greater discharge of water, may fairly be considered the main source of the Irrawaddy.

The expedition proceeded northwards through a dense jungly country to a hill known as Pumlum Pum, about 57 miles from the confluence, but was unable to advance further. From this point Major Hobday was able to map in a good deal of the country along the course of the Malikha, almost to the Kanti country previously reconnoitred by Col. Woodthorpe in 1884-85. The expedition then moved back to Pumwai and went eastwards to Sabaw on the Malikha, thence south along the right bank of the latter to Kwitao, and then crossing the river reached the 'Nmaikha at Lekennai ferry, some 20 miles east of the confluence. From this point they marched *viâ* Mailompum to Maingna, on the left bank of the Irrawaddy. A second attempt was made to ascend the 'Nmaikha, but it failed owing to the opposition met with at three marches from Maingna. This river has been accurately mapped in from the confluence as far as 'Nsentaru, where it makes a sudden turn to the west after flowing from the north. Beyond this point its general direction is known to be northerly, but the river itself is soon lost behind high mountains, and trustworthy information regarding its further course could not be obtained. No information of the existence of the Naungsa lake, which was reported to be the source of one of the branches of the 'Nmaikha, was obtained; and it appeared doubtful whether the river was fed by any large lake source, though it seemed probable that it had a large eastern tributary at a point several days' journey from the confluence. The Kantis refer to two rivers to their east, called the Nam Tisan and the Namdu Mai or Phung Mai. From the accounts given by the Kanti Shans of the position of the latter river, about 45 miles to the east, as well as from the similarity of the names and other points, there seems to be no question that it is the 'Nmaikha in its upper reaches, and is the eastern branch of the Irrawaddy. The Kanti Shans further state that there were two other large rivers to be crossed before

reaching China, and these would be the Lukiang or Salween, and the Lan Ts'angkiang or Mekong. Little doubt therefore remains that the Lukiang is identical with the Salween, though there is so far no absolute proof of it. It is to be hoped that this will not long be wanting.

Major Hobday, who accompanied this party, succeeded in mapping 4,300 square miles of hitherto unexplored country lying to the N. E. and E. of Bhamo.

Captain Longe, R. E., and Lieutenant Gordon accompanied the columns which operated to the north and west of Mogaung, and succeeded in reconnoitring some 1,500 square miles of new country. The expedition under Lieutenant Daly, which started from Lashio and visited the chief villages of the states on the eastern frontier of the Shan States, was accompanied by Captain Renny Tailour, R. E., who during the march of the column reconnoitred 5,250 square miles of unexplored country. This officer was enabled, at Meunglem and at Kenghung on the Cambodia, to compare the results of his work with those of M. Garnier, a French surveyor. These results agreed closely in latitude, but there was some difference in longitude. The Kyaington Chiengmai frontier mission under Mr. Archer was accompanied by Mr. Kennedy as survey officer. He succeeded in mapping 9,000 square miles of previously unknown country, lying chiefly to the north of that mapped during the previous year by the Anglo-Siamese Boundary Mission.

In addition to the above special reconnaissances, the general survey of Upper Burma has been carried on by two parties under Captain Longe, R. E. and Mr. Ogle respectively, and the outturn of their past season's work amounts to 21,794 square miles.

*Baluchistan.*—Geographical surveys on the  $\frac{1}{4}$  and  $\frac{1}{2}$  inch scales have been carried on by the party under Colonel Holdich, R. E., in the Zhob Valley, in Mekran, and on the Perso-Baluch frontier, the total area amounting to 30,240 square miles.

*Persia.*—Sub-Surveyor Imam Sharif Khan Bahadur was employed during the year on exploration work in Persia, and returned with the large total of 30,500 square miles of reconnaissance, on the scale of 8 miles to the inch.

*N.-W. Frontier.*—The expeditions which operated on the Miransai border and in the Black Mountain country were accompanied by Captains Mackenzie and Wahab, R. E., respectively. In the former, 278 square miles were surveyed on the 1 inch scale, and 20 on the  $\frac{1}{2}$  inch; and in the latter, 184 square miles on the 2 inch, and 360 square miles on the  $\frac{1}{4}$  inch scale.

A party under Lieutenant Close, R. E., has continued the principal

**Trigonometrical Surveys.**

triangulation in Burma along the North West Karen hills. Observations were taken from nine principal stations, and the series was extended over a direct distance of 45 miles, embracing an area of 900 square miles. The selection and completion of thirteen principal stations in advance of the season's completed work will allow of the employment of two observers during the current season, and the outturn of work will be materially increased.

**Tidal and Levelling Operations.** During the year tidal observations were carried on at 17 stations on the coasts of India, Burma and Ceylon. The observatories at Madras, Coconada and Chittagong were closed during the year, while registrations were commenced at Trincomalee and Minicoy.

The levelling operations of the year comprised three lines of double levelling, namely from Rajkot to Dhasa and thence along the Bhavnagar-Gondal railway line to Bhavnagar, from Sanosra station on the same line to the Chaohuda Temple near Salbet, and from Naydongri station along the north-eastern division of the G. I. P. Railway to Bhusawul, and thence to Malkhed station on the Nagpur branch; in all 425 linear miles.

**Latitude Operations.** Observations for latitude were carried out by Lieutenant Lenox-Conyngham, R. E., at seven stations, between the parallels of  $13^{\circ}$  and  $15^{\circ}56'$ , situated on the Madras Meridional Series of the Great Trigonometrical Survey. The instrument used was a new zenith telescope designed for the application of Talcott's method—a system well known in America but not previously tried in India. The results prove that this instrument is very little inferior to the zenith sector, while it is not one-tenth of its weight.

**Trigonometrical Branch Office.** Photographs of the sun have been taken, as in former years, at the Trigonometrical Branch office, Dehra Dun, on all days on which the sun was visible. The computing section of this office has carried on the work of the final reduction and publication of the results of the operations of the Trigonometrical Survey. Volume XIV, containing the details of the triangulation of the S. W. Quadrilateral, has been completed, in addition to three synoptical volumes. Progress has also been made with the volumes dealing with electro-telegraphic and tidal operations.

**Topographical Surveys.** These have been carried on in Chittagong, Jalpaiguri, the Southern Maratha country, Gujarat and Rajputana, Mergui, Baluchistan and the Himalayas. Forest Surveys were continued in Hoshangabad, Cen-

tral Provinces; in North Canara, and in the Poona and Thanna districts of the Bombay Presidency; in Coimbatore, Tinnevely and Madura districts, Madras Presidency; in the Prome and Toungoo districts in Lower Burma; while new surveys were instituted in Jalpaiguri and in the Lansdowne Cantonment.

These operations have been continued in Chittagong, Tipperah and Jalpaiguri, in Bengal; in Garhwal and the Rampur State in the N.-W. Provinces; in Kamrup, Nowgong, Darrang and Sylhet, Assam; in Mandalay, Meiktila, Thongwa and Amherst, Burma; and in Pooree and Cuttack, Orissa. Traverse Surveys were carried on by two parties, one in Mandla, Central Provinces, and the other in three districts of Lower Burma.

The work of the publishing offices of the Survey has progressed steadily, though there are no new publications of special importance to note. A third edition of the 32-mile map of India, with considerable extensions in Baluchistan and Burma, is well advanced. Constant additions are being made to the maps of the new country in Upper Burma and our S.-E. Frontier. The heliogravure process continues to make good progress in the photographic office, and it is proposed to bring out the sheets of the new survey of the City of Calcutta by its aid on a reduced scale. During the year a process of photo-block printing in half tones was introduced, and seems likely to have many useful applications.

There is nothing very special to record regarding Asiatic Geography during 1891 except Lord Lamington's journey from Siam to Tonquin, but nevertheless the year has not been an unfruitful one, and has been specially marked by the publication of some of the important results obtained during the explorations in Central Asia that had been in progress in the previous few years. The need for a more exact knowledge of our border lands on our own part is yearly becoming accentuated by the steady advance of our European neighbours on the N.-W. and S.-E., and though there is reason to believe that the subject is receiving due attention, it is to be regretted that some of the results which might be of scientific interest are not permitted to appear.

*Siam.*—The *Proceedings of the Royal Geographical Society* contain a very interesting account by Lord Lamington of his journey through the Trans-Salween Shan States to Tonquin. Starting from Bangkok he proceeded to Chieng Mai, where he joined Mr. Archer, the British Consul, who was then starting on an expedition to settle the frontier between the Shan States and Siam, and accompanied him as far as

Hong Lük. Then diverging to the east he went on towards Tonquin, through the Sipsong Pana, passing through nearly 300 miles of hitherto quite unknown country and reaching French Territory at Muang Jheng. Thence he went to Lai Chau on the Black River, which he descended by boat to Cho Bo, the highest point navigable by steamers, owing to a *barrage* of rocks. From here he went down through an open fertile and thickly populated country to Hanoi. He was exceedingly well received by the French officers he met; and though his paper is entirely geographical, some light is thrown upon the unhealthy nature of the country and the difficulties the French have to contend against in settling their new possessions. It also shows how the French possessions are being advanced towards the line of the Mekong. Lord Lamington found the greatest difference in salubrity and productiveness between the Shan States and the country he passed through along the Black River, the advantage being with the former. He made a very careful survey of his route, and his complete map when published will be a valuable addition to our knowledge of this part of our Eastern Trans-Frontier.

Mr. James McCarthy, Superintendent of Surveys in Siam, has fixed the longitude of various places in Siam by telegraph, among them Luang Prabang (Pagoda),  $102^{\circ} 05' 56''$  E., and Korat (Court House)  $102^{\circ} 06' 52''$  E.

*French Possessions.*—The question of the navigability of the Menam-Kong (commonly but erroneously called the Me-Kong; its real name being the Nam-Kong, or River Kong—*Me*, an affix meaning mother) still continues to excite the interest of the French, with the object of developing trade with the country about its upper waters. A launch was to have been sent up with this object, but was unable to pass the Kong rapids. It has been found that a steamer service could be maintained all the year through for that part of the river comprised between the junction of the Se-mun and the sea, and from July to January or February for the part lying between Luang Prabang and Kemmarat. The Siamese are also alive to the importance of steam navigation on the upper part of the river, and are said to be arranging for the transport of a launch from Bangkok.

The *Comptes Rendus* of the Paris Société de Géographie contain a short account of an expedition made by Father Guignard, a missionary in South Tonquin, to the upper part of the river Ngan-Kha or Song-Mo. He started from Ka-chai with a military reconnoitring party. The river was navigable for three days in junks, after which canoes had to be used and often had to be towed. At the ruined village of Cua Kao, the Ngan Kha divides into the Nam Mo, going east, and the Nam Non,

going north. Father Guignard followed the former to Tu-do on the frontier of Tran Ninh, which although belonging to Annam, is occupied by Siamese. Here he visited the Meos, a tribe of Chinese origin who have fine cattle, fruit trees, especially peaches, and a very large and productive species of maize; but they are ruined by opium smoking. The wild Meos live on the top of the mountains. From Muong Xa the party followed the Nam Tam till it joined the Nam Non at Muong Lam; then the Father went on up the Nam Non, which was a succession of rapids and waterfalls, to Hat Bo and afterwards to the Muong Mat, to obtain the release of two Christian captives. He returned in boats furnished by the Muong Mat, most probably down the Nam Mat, to Muong Lam, and thence he proceeded to Ka-chai *viâ* Kanh Trap.

Under the superintendence of Captain Bauchet new maps of the French possessions in S. E. Asia are being prepared at Hanoi, (1) in 40 sheets on the scale of 1 : 200,000, (2) a reduction of the above map on the scale of 1 : 500,000, and (3) a general map on the scale of 1 : 1,000,000. The maps are printed in colours.

*Eastern Tibet.*—In the *Proceedings of the R. G. S.* Mr. A. E. Pratt has published a very interesting narrative of two journeys from Shanghai and Hankow, made in 1889 and 1890, to Ta-Tsien-lu on the eastern borders of Tibet. In the course of the second journey he visited Mount Omei, 11,000 feet high, and a Buddhist place of pilgrimage of great sanctity. Here he several times witnessed the phenomenon known as the "glory of Buddha." Mr. Pratt was engaged in collecting natural history specimens, and the paper contains information regarding many new plants, &c., found. He met Prince Henry of Orleans and M. Bonvalot at Ta-tsien-lu, and it was by Mr. Pratt's instrumentality that the collections made by the Prince were safely despatched to Europe.

A full account of Mr. Rockhill's journey from China in the direction of Lhasa, noticed in last year's address, has also been published during the year.

*Central Asia, Eastern Turkestan.*—In the *Ivestia* of the Russian Geographical Society, the brothers Grum-Grjimailo have given an account, with a map, of the results of their expedition to the Tian Shan oases. This account has been translated by Mr. E. D. Morgan, and is published with the map in the *Proceedings of the Royal Geographical Society*. The route taken by these travellers was noticed in last year's address, and their observations and collections are now being worked out. An examination of the hypsometrical observations made by Major-General Dr. von Tillo, has revealed the existence of a depression in the hollow between the Tian Shan and the Chol Tau range of the Altai near Lukchin, in the neighbourhood of Turfan, from which it would appear that Lukchin is about

164 feet below the level of the sea, with an approximate error of  $\pm 82$  feet. To connect this point with a series of levels, to found a meteorological station there, and to take pendulum observations, would be objects of the highest scientific interest; and Major-General von Tillo proposes to visit the spot and investigate this remarkable depression, which was observed by Colonel Pievtsoff as well as the brothers Grum-Grjimailo. Another point of interest, as reported in the above account of these travels, is the existence of Uighur ruins at Syngym, an oasis in the Tinge-tau mountains, where it is said that gold and silver things, copper vessels and censers, &c., are found; also of Uighur writings, which are frequently found with grains of wheat in a particular kind of earthenware vessels; as well as leaflets with inscriptions on them, enclosed in horn and wooden boxes, but so brittle that they often fall to pieces on being handled. These last seem to be specially interesting in connection with the birch-bark MSS. found by Lieut. Bower.

The same account gives notes on the large Natural History collections formed by the brothers, amounting to about 13,000 specimens, which are now being worked out, the Russian Government having voted a sum of 24,000 roubles for publishing the work of Gromchevski, Pievtsoff and Grum-Grjimailo.

Further accounts of the explorations in the neighbourhood of the Astyn Tagh Mountains, made by Colonel Pievtzoff's expedition, have been published. The expedition returned to Russia last March, having made a topographical survey of 5,000 miles, and 50 determinations of geographical positions, besides magnetic and other observations. They have also gathered vast geological, botanical and zoological collections, about 40 camel loads.

From a paper read before the Geographical Society of Berlin by Herr L. Conradt, who accompanied Gromchevski as naturalist, it would appear that Chinese Eastern Turkistan, a region about 320,000 square miles in extent, is really a desert, except about the river system of the Tarim, where there are cultivated oases. The tyrannous government of the Chinese is likely in case of a revolution to give way to the Russian dominion, which is popular among the Muhammadans of Central Asia.

Russian activity in Central Asia has been sustained, and further advances have been made. Under the leadership of Capt. Bachewski, an expedition left Samarkand in May, with the object of exploring routes in the Pamir and the passes over the Hindu Kush into Kafiristan, supplementing Gromchevski's work. This party claimed the Pamirs as Russian territory and warned off our English explorers.

M. Katanoff was exploring in the Tian Shan, principally in the interests of ethnography, and was to spend the autumn in Turfan and the winter in Kuldja.

M. Dutreuil de Rhins, the author of an exhaustive monograph on Central Asia, has, at the instance of the French Academy, undertaken a scientific exploration in Chinese Turkistan accompanied by M. Grenard, a student of the School of Living Oriental Languages. At the last news he was at Khotan and would winter there. He had made meteorological and astronomical observations on his way, and had accurately determined the position of Khotan astronomically, as  $37^{\circ} 6' 35''$  N. lat.,  $79^{\circ} 53' 15''$  E. long. from Greenwich, and 4639·191 feet above sea-level. He had also been exploring the country about Keria and Polu.

Mons. J. Martin, whose journey was noticed in the Address for 1890, appears to have met with many misfortunes. An attempt to proceed from Sutschen from east to west along the northern slopes of the Altyn Dagh to Lob Nor, which might have settled the question of the existence of the lake, failed owing to his being unable to obtain guides. He was obliged to make a detour across the Gobi, and proceeding *vid* Hami, Karashar, and along the Tarim to Lob Nor, and then along the Cher Chen river, he arrived at Cher Chen on the 20th June and returned to Russia.

Accounts of their adventurous journey through Asia have appeared from the pens of Prince Henry of Orleans and Mons. Bonvalot. The *Bulletin de la Société de Géographie* contains a short account by the Prince, illustrated by an excellent map. A complete history of the journey by Mons. Bonvalot has been published under the title of "Paris à Tibet," and also an English translation of it.

In the *Zeitschrift der Gesell. für Erdkunde zu Berlin*, Dr. G. Wegener has very fully discussed the orography of the Kuen Lun range, which has a length of about 2,390 miles with a maximum breadth of about 500, and may be roughly estimated to cover 425,000 square miles. He also discusses the geology of the Kuen Lun and surrounding regions, and the observations of Richthofen, Loczy and other travellers. The paper is illustrated by a map containing much that is new, and accompanied by a tracing showing the routes of travellers in Central Asia.

The *Proceedings R. G. S.* for July, contain a very interesting paper entitled, "Our present knowledge of the Himalayas," by Colonel H. C. B. Tanner, late of the Survey of India, an officer who probably knows the different parts of the Himalaya mountains better than any other.

Under the auspices of the Royal Geographical Society an expedition has been arranged for to explore the high peaks and glaciers of the Kara-Koram. It will be under Mr. W. M. Conway and the Hon. C. G. Bruce (5th Gurkhas), who will be accompanied by Mr. Eckenstein, a practised Alpine climber, Mr. McCormick, an artist, and a Swiss guide.



They propose to make the Baltoro glacier in Baltistan their centre of operations at first.

The *Proceedings R. G. S.* contain an account of Major General T. E. Gordon's journey from Teheran to the Karun and Mohamrah; and also a paper by Mr. C. E. Biddulph of his journey in company with Capt. Vaughan across the western portion of the Great Persian desert, *vid* the Siah Kuh mountains and the Darya-i-Namak, in which he shows that what is called the Great Salt Desert is not salt throughout; that the deposit known as *kavir* is the same saline efflorescence found in Sind and the Panjab; and that the Darya-i-Namak, or sea of salt, is an instance of a salt formation quite distinct from the ordinary *kavir*.

The *Scottish Geographical Magazine* contains an account by Captain A. C. Yate of his journey to Taskent, and is accompanied by a very useful orographical map of Central Asia.

In the same Journal, for March, Mr. J. G. Bartholomew gives a very valuable list of published maps of Asia, with a map showing the extent and value of the geographical surveys. Out of 17, 250,000 square miles only about 750,000, or one twenty-third, are absolutely unexplored.

Dr. J. Burgess, c. i. e., has a paper in the same Journal on "Mapping and place-names in India," in which he draws attention to the correct representation of place-names in maps, and to the necessity for an index of geographical positions—a want which measures are now being taken to supply, though it must necessarily be a work of time.

In this brief and imperfect review of the scientific and literary work of the past year, done by workers both in and outside of India, enough will, I trust have been said to show that considerable additions of high interest and value have been made to our knowledge of Indian subjects in many departments. No doubt it is true, and the complaint has actually been made to this Society, that most of the papers contributed to the *Journal* possess little interest except to specialists in their particular lines, and are not attractive to the general reader. This cannot be denied, and indeed the fact constitutes the very reason for our existence. We are here, as a Society, for the purpose of advancing the bounds of knowledge in different directions; and though articles of popular interest are freely admissible into our pages, we have to march in line with scientific workers in the Asiatic field all over the world; and if we are to retain our position, our contributions to the general sum of knowledge must keep pace with the progress of research, in other words, must be for the most part abstruse and technical. I may add, on this point, that there is one direction in which members of our Society can very usefully promote its interests. The Library of the Society is intended, not

**Work of the Society.**

merely for reference within these walls, but also for the use of members living at a distance, who are entitled to take out books subject to certain necessary (and not very onerous) conditions. A valued member of the Society, himself a worker in the field of anthropological inquiry, has taken the trouble to specify a number of books which he wished the Society to procure in order to assist him in his own investigations. If other members, working in different fields, would help the Library Committee with similar suggestions, the effect would be to increase the value of the Library for practical purposes and its usefulness to members; and the Council would, I may safely say, be very ready to meet such suggestions so far as it lay within their means to do so.

In his Annual Address last year my predecessor, Mr. Beveridge, threw out a suggestion that, instead of monthly meetings at which subjects of all kinds were discussed indiscriminately, we should have separate fortnightly meetings for the discussion alternately of literary and archaeological subjects, and of those relating to the Natural Sciences. Mr. Beveridge observed that "under the present system, only about half of the audience is interested in any paper that is being read. As a rule the zoologist does not care for inscriptions or coins, and the numismatist or philologist does not care for animals or plants." This suggestion has since been repeated; but so far as I could understand the general sense of the Society, it was rather to the effect that the proposal left out of sight that considerable number of members who, without being specialists in any subject, took a general interest in all. These are the members whom we wish to attract to the Society, in the hope that some of them may be stimulated, by what they see and hear at our monthly meetings, to devote themselves to some branch of inquiry, it may be scientific, or it may be literary, which may from time excite their interest. Nor do I think that the restriction of interest to one branch of knowledge or the other is, even among specialists, so absolute as is sometimes supposed. If so, it would be hard on such members to compel their attendance at two meetings where one has hitherto sufficed.

Gentlemen, I beg to offer you my cordial thanks for the honour that you did me last year in electing me your President, and for the patient attention with which you have listened to this address.

The PRESIDENT announced that the Scrutineers reported the result of the election of Office-Bearers and Members of Council to be as follows:—

*President.*

Hon. Sir A. W. Croft, K. C. I. E., M. A.

*Vice-Presidents.*

J. Wood-Mason, Esq.  
 A. Pedler, Esq., F. C. S.  
 C. J. Lyall, Esq., B. A., C. I. E.

*Secretaries and Treasurer.*

C. R. Wilson, Esq., M. A.  
 Dr. J. H. Tull Walsh.  
 C. Little, Esq., M. A.  
 Pandit Haraprasád Shástri, M. A.  
 Dr. W. King, B. A.

*Other Members of Council.*

Dr. A. Crombie.  
 Bábu Pratápachandra Ghosha, B. A.  
 L. de Nicéville, Esq., F. E. S.  
 Colonel H. S. Jarrett.  
 C. H. Tawney, Esq., C. I. E.  
 Dr. Mahendralál Sarkár, C. I. E.  
 E. C. Cotes, Esq.  
 Hon. Justice Amir Ali, C. I. E.  
 Dr. D. D. Cunningham, F. R. S.  
 Colonel J. Waterhouse, B. S. C.  
 Pandit Maheschandra Nyáyaratna, C. I. E.

The meeting was then resolved into the Ordinary Monthly General Meeting.

HON. SIR A. W. CROFT, K. C. I. E., M. A., President, in the chair.

The minutes of the last meeting were read and confirmed.

Thirty-five presentations were announced, details of which are given in the Library List appended.

The following gentleman, duly proposed and seconded at the last meeting of the Society, was balloted for and elected an Ordinary Member:—

O. G. Arthur, Esq., C. S.

The following gentlemen are candidates for election at the next meeting:—

Hon. Raja Oodaypratab Sing, Raja of Bhingá, Oudh, proposed by J. Woodburn, Esq., C. S., seconded by C. Little, Esq., M. A.

Bábu Gopal Ballabh Das, M. A., proposed by Bábu Man Mohan Chakravarti, B. L. seconded by C. R. Wilson, Esq., M. A.

Prof. Nrisimha Chunder Mukerjee, Calcutta, proposed by the Hon. Sir A. W. Croft, seconded by C. Little, Esq., M. A.

The following gentleman has expressed a wish to withdraw from the Society :—

Kumar Sarat Chandra Singh.

The Secretary reported the death of Sir G. B. Airy, K. C. B., an Honorary Member of the Society.

Babu Sarat Chandra Das read a short note on the origin of the Tibetans.

#### THE ORIGIN OF THE TIBETANS.

(*From Tibetan works.*)

Tibet was known to the early Indians by the name of Himavata, (*Khawa-chan* in Tibetan) under which appellation it also occurs in the Mahabharata. During the reign of King Ásoka, the country to the north of the Himalayas was first explored by his generals and called Himavata. Buddhism rapidly spread there and gained much importance on account of the learning of its teachers. In the schism which took place after the second Council in Buddhism, the name Himavata was given to the school that prevailed in Tibet. The Chinese pilgrim Fahian visited the headquarters of the Himavata school in Western Tibet which, in vulgar language, was called Hima-desa, *i. e.*, the snowy country. In the beginning of the seventh century, the first Tibetan who came to Magadha to study the art of writing was called Sambhoṭa, the excellent Bhoṭa. From that time Tibet has been known to the people of India by the name of Bhoṭ or Bhoṭa. Hence the general epithet of a native of Bhoṭ was Bhotya or Bhotia. The Tibetans, when the art of writing was first introduced in their country about A. D. 630 to 634, endeavoured to reproduce the name Bhoṭ in their language with the newly formed Tibetan character b, o and d, *i. e.*, Bod, the literal meaning of which is to call or invoke. But in the Tibetan language the letter B is pronounced as p and the last consonant of a word is seldom or very imperfectly pronounced. Hence the name written as Bod becomes in pronunciation Pö.\*

The name by which Tibet is known to the Tibetans is therefore Pö. The name Tibet by which Marcopolo designated the country, seems to have been the corruption of "*Tu-bod*," the epithet by which the

\* In the history of Sikkim the name *Tribota Narendra* (Tibetan king) appears to be the principal designation of the first Mahárajá of Sikkim who came from Tibet.

country was known to the Turks and Tartars. In the Travels of Solyman the Arab merchant, which, according to Reinaud, was published in 850 A. D., the name Tibet was first mentioned. The Chinese name for the whole country is Tufan. From an inscription on the *Doring* monolith of Lhasa dated 822 A. D., in Chinese and Tibetan character, the name Bod is written with the Chinese initial Fan. Hence it appears that the Chinese name Tufan is the same as Tubod which is still the Mongolian name for Tibet. The name Weitsang applied to Tibet by the Chinese is compounded of the two names of the two principal provinces of the country, *viz.*, Wu and Tsang. The names Hsi-Tsang and Hsi-fan (in which hsi=west) are also indiscriminately applied to the country by the Chinese.

The name Alakávati by which Tibet is also known to the Indians may be traced in the term Changlo-chan by which the part of the province of Tsang, lying to the north of the Chomo-Lhari and Kang-chan Junga mountains, is designated. The Tibetan word Changlo-chan (in which Changlo=*Alaká* and Chan=*vati*) signifies *Alakávati* or the place where men and women wear flowing or braided locks. The custom of wearing the *Changlo* exists, even now, as it existed before, in Tibet. There the men wear only one plaited tail while the women enjoy the privilege of braiding their flowing hair into two. Tibet was for this reason designated Alakávati by the Indians, though the Tibetan equivalent of that name was applied were to a part of Tsang by the Tibetans themselves. The grove of Changlo-chan situated on the river Painam with its attractive scenery, forms an important landmark to travellers who, proceed to Lhasa from the south, *viá* Gyan-tche.

According to Sum-pa the great Tibetan Historiographer and also the early records of Tibet, it is mentioned in certain Chinese histories that the people who inhabited the Arya-bhumi, the blessed land of the Hsi-thian (western heavens) originated from the gods, the people of China, the flowery country—sprang from the dragon, the offspring of the heaven and the earth, the Mongolians originated from the demons and last of all the Tibetans descended from the Yakshas, a kind of mischief-making demigods. The Hindus regarded the Saki-Tartars and the early Persians, who worshipped the *Ahura* (*Asura*) and lived at the foot of Meru, *i. e.*, about the Parapomismus\* mountains as the descendants of the Asuras who waged war on Indra, the Emperor of India and his nobles. The Hindoos designated the Tibetans by the name of Huna and Gapa or the legions of Kuvera, the god of wealth. From the internal evidence of the classical writings of the Hindoos, it appears that the specific designation which they had for the Chinese really signified the Tibetans.

\* Para and upa Nishad mountain.

In the passage of the *Udyoga parva* "Bájináñcha Sahasráni Chinadesodbhavánicha" the Tibetan pony was evidently referred to.\*

In the Buddhist work called *Sambhara Samudra* Tibet is mentioned as one of the 24 abodes of the celestial nymphs, where sages still in their human shape, resided in peace. Even when Buddha preached his doctrine in India, there lived, in the country of Himavata men, who by the dint of their moral perfections, were able to achieve wonders. The place where these intellectual giants, male and female, called in Tibetan *Pah-vo* and *Pah-mo* lived, is conjectured by the historians of Tibet to be the district of *Pha-bonkha* near Lhasa. The Mahabharata also tells us that the sacred abode of the divine sages was a place in Himavata called *Paraloka*, beyond the snowy Himalayas, where to the holy brotherhood there was immunity from disease and the troubles of a worldly life. The author of the *Sûrya Siddhanta* called this country by the name of *Siddha-pura*, the land of perfection and accomplishment, and the description that he has given of the place tallies with that of the *Mahabharata*.

The name *Pur-gyal* by which Tibet was called in early times, as may be gathered from *Pon*, as well as old Buddhist works, may have been derived from the name *Para loka* where *loka* means world and *gyal* (dominion). *Pur* in Tibetan means "the dead." Hence *Para loka*, the future world, may be brought very near to the meaning of the name *Pur-gyal*.

The legendary accounts of Tibet as preserved in the *Debther Nonpo* and other works give different stories about the origin of the Tibetans. It is said that in early times a race of people called *Noi-jin*, (*yaksha*) i. e., the mischief-makers inhabited the country. Though they were rich, having in their possession precious stones and metals, yet they used to do mischief to each other and to live in a state of continual warfare. So late as the first century B. C. twelve *Noi-jin* chiefs are said to have partitioned the country among themselves, a few years before the Indian prince *Nyah-thi-tsanpo* visited Tibet. The tradition about the Tibetans as related in *Gyalrab* and other works which is credited by the people at large as the true story† of their origin, is both interesting and curious. A certain monkey, having gone to Tibet, lived in a solitary

\* In the early records of Tibet, it is mentioned that the Chinese language was called *Nagubhasha* by the Indians, while Sanskrit was called the language of the gods; and that the people who traded with India, coming from beyond the seas with such commodities as satin (*ohináp śuka*), camphor porcelain, &c., were called the *Nagas*. From this, it appears, that in olden times the merchants, who coming from the direction of the Indian Ocean used to trade with India, were no other people than the Chinese. These *Naga* merchants had settlements at *Pátaliputra* and other great centres of trade.

† Some identify this monkey with *Hanumana* the hero of the *Ramayana*.

cavern, of a dark brown rocky cliff. There he meditated in peace on the moral perfections of the saints. Once, while he was engaged, in meditation, an Amazonian woman, Rakshasi, in the garb of a beautiful maiden, came to see him. The saintly appearance and character of the monkey ravished her mind, in consequence of which she paid him frequent visits. At last she opened her mind to him and entreated him to accept her as his companion. At this, the monkey who being tired of the world had besought himself to the solitudes of the Himavata, become very much embarrassed. When the woman again approached him with the same prayer, he replied ; “ I am a devotee of Arya Lokesvara and have taken the vows of purity. How is it possible for me to enjoy your company ? ” If you permit me to serve you, said the woman, your purity will increase, but if you do not allow me to be your wife I shall put an end to my life and thereby make you the cause of my death. So saying she made him a profound salutation. Seeing his monkey holiness unmoved she fell prostrate on the ground and with tears flowing from her eyes thus implored :—“ Oh prince of the monkeys, do vouchsafe unto this suppliant woman your mercy and love. At length the kind-hearted monkey moved by compassion, proceeded to the sacred hill of Potala on the top of which stood the mansion of the divine saint Lokesvara. Arrived at the gate he thus invoked him :—Oh thou, merciful Lord, Protector of the world, accept my prayers. Since becoming a devotee of thee this humble monkey has been keeping his vows just as one preserves his life. While I was engaged with my sacred duties in a solitary cavern, a maiden of unsurpassed beauty came to see me. She does not leave me alone. By her constant attendance upon me, my vows are about to be broken. At this critical time, command me, Oh saint of saints, how to behave.” To this a voice from heaven replied :—Take her for your wife. A second voice from the saintly goddesses Tara and Bhrukuti said : That is excellent, that is excellent. Then the patriarch monkey and the woman lived as husband and wife and in course of time they got six children. These being of mixed origin, partly resembled their father and partly their mother in the inward and outward features. In their traits of character they differed much from one another. The patriarch kept them for a period of three years in the forest called the grove of peacock’s assembly. Then more children were born. They lived upon wild fruits during a part of the year and when their supply diminished or became exhausted the monkey children lifting their arms cried ;—Father, what to eat ? mother, what to eat ? The patriarch now reflected within himself :—What have I done ? Why have I given existence to so many that are starving for want of provisions ? Oh merciful Lord, it was at thy command that I gave birth to

this numerous progeny. It was not for satisfying any lust or unholy desire that I permitted myself to be united with the demon of a woman. It was simply out of compassion that I took her. Is compassion, therefore, the cause of this misery of myself and children? How am I to be saved from this mire of worldly troubles? Grant me thy grace and tell me how I am to support my children. Then a voice from heaven was heard to say:—Your children shall be protected by me, Oh prince of monkeys, do not be concerned at all. Then the Lord Lokesvara proceeding towards the deep recesses of the Sumeru Mountain brought the seeds of six kinds of grain, such as barley, wheat, peas, oats, maize and buck wheat and scattered them on the ground. So these grains grew up uncultivated by the hand of man. Then the great patriarch took his children to the table land of *Kong-poi ri*, where the grain grew wild, and told them *Ta-soi Zoi-dang*, (now then eat and eat) From that time, the rich and fertile plains of Che-thang became known by the names of *Zo-thang* and *Tazoi*. Then the children of the patriarch monkey began to subsist on these six kinds of grain eating them to their heart's content. From the effect of the grain on their constitution, their tails and the hair of their body grew shorter and at last the former totally disappeared. In course of time they learnt to talk and to live as human beings. Subsisting on the wild and uncultivated grains of Tibet, the earliest people of Tibet lived, for a long time, in a state of nature. Then they used to clothe themselves with leaves and keep themselves warm by means of the barks of trees. On account of their mixed parentage, the Tibetans have inherited from the side of their father, the saintly patriarch, the virtues of good temper, faithfulness, compassion, industry, love of pious actions, politeness in language and skilfulness in conversation. From their mother's side they have inherited wrathfulness, a passion for gain and trade, cupidity, sense of rivalry and emulation, the habit of breaking into loud laughter, a powerful physique, intrepidity, impatience, speculativeness, delighting at other's faults and fierceness of character. At this period, forests of trees multiplied in the bleak plateau of Tibet, the valleys and ravines were filled with water. The glacial lakes were drained by the overflowing of their banks, and cultivation of the plains commenced, and towns and villages were founded.\*

\* "It is asserted that Tibet, in remote times, was almost totally inundated; and the removal of the waters that covered its surface, is imputed to the miraculous interposition of some object of their worship, whose chief temple is reported to be at *Darjedan*, (Vajra san in Buddha) *Gaya*. He, it is said, in compassion to the few inhabitants which Tibet contained, who in that age were little better than monkeys, drew off the waters through Bengal, and by sending teachers among them humanized



Long before the advent of Buddha, when the countless armies of the Kuru were defeated by the Pandus and the hero Duryodhana fell in the battle-field of Kurukshetra, one of his generals named Rupati dressed in woman's attire fled towards the Himalayas with one thousand followers. For fear of being pursued by the enemy, he penetrated into the country of Himavata and settled there with his men. At that time, the aborigines of Tibet were still wild and uncultured and lived in caves and holes dug in mountain sides. In course of time, the Indians visited the country and multiplied their settlements. The people of Hor (Tartary) also came to Tibet. These three people mingling together, produced the Tibetans proper, and Avalokitesvara, the patron deity of Tibet, feeling compassion for the benighted hordes chose to appear among them as a Lama or a king. It is on this account that even infants spontaneously lisp, in the sacred six syllables '*Om mani-peme-hum.*'

A scion of the Pandava dynasty after wandering in the Himalayas, as a traveller, at last entered the country of Himavata by crossing the pass over Lhari-tse now called Yarlha-shambo. From the top of this mountain he descended to the valley of Yarlung, which on account of its fertility as well as scenery and also being the place where the first king was annointed, was called *Tsan-thang go-shi* (King's plain with four entrances). At this time twelve chief herdsmen had been pasturing their cattle in that plain. As soon as they saw the solitary prince coming towards them from an unexpected quarter, they were struck with wonder and curiosity, and assembled round him. When asked who he was and whence he came, the graceful youth not knowing their language pointed his fingers to the top of Lhari-tse which he had crossed. The Tibetans inferred from it that he was *devaputra* the son of a god come from heaven, descending the Lhari-tse (the top of the god's mountain). They conferred together what to do with him and at last resolved to make him their king. They then placed him on a chair resembling a *dooly* and conveyed him to Yam bu la gang. From being carried on the back (*Nyah*) of the people in a chair (*thi*) and made king (*Tsan-po*) he was called Nyah-thi-tsan-po.\* The Tibetans under his direction built for him a lofty house of stone called *Yambu lha khar*

the wretched race, who were subsequently to people it. In this belief of the Tibetans, which is too general to be totally rejected, it is not difficult to discover strong traces of the universal deluge, though the tradition, as might naturally be expected, is obscured by fable, and disfigured by a mixture of absurdity."

Turner's Embassy.

\* There are different accounts of the parentage of this prince in the records and ancient histories of Tibet.

(the god's house at Yambu). It was, therefore, the first palace that was erected in Tibet. Nyah-thi tsanpo trained the Tibetans in the art of war, established a system of government hitherto unknown to them, and gradually extended his sway over the whole country by bringing to subjection the petty chiefs who ruled over the different provinces. He married Nam-mug-mug, the handsome daughter of a Tibetan chief, and by her got So-thi-tsanpo who succeeded him on the throne. At this time the Bon religion was introduced into Tibet from the country of Sum-bha.

The following paper was read :—

*The Buddhist Pictorial Cycle of Existence (with 2 plates and a diagram)*—By L. A. WADDELL, M. B.

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

LIBRARY.

The following additions have been made to the Library since the Meeting held in January last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Baltimore. Johns Hopkins University,—Circulars, Vol. XI, No. 94.

Berlin. Der Koniglichen Akademie der Wissenschaften zu Berlin,—  
Abhandlungen, 1890.

———. ————. Sitzungsberichte, I-XL.

Bombay. The Indian Antiquary,—Vol. XX, Part 254.

Calcutta. Agricultural and Horticultural Society of India,—Journal,  
Vol. IX (New Series), Part I.

———. Indian Engineering,—Vol. XI, Nos. 2-5; and Index to  
Vol. X.

———. Photographic Society of India,—Journal, Vol. V, No. 1.

Copenhagen. K. Nordiske Oldskrift-Selskab,—Aarboger, Raekke II,  
Bind VI, Hefte 3.

London. Anthropological Institute of Great Britain and Ireland,—  
Journal, Vol. XXI, No. 2.

———. Nature,—Vol. XLV, Nos. 1157 and 1158.

———. The Academy,—Nos. 1024 and 1025.

———. The Athenæum,—Nos. 3347 and 3348.

Lyon. La Société D'Anthropologie de Lyon,—Bulletin, Tome. IX,  
No. 2.

- Mendon, Ill. *The American Antiquarian and Oriental Journal*,—Vol. XIII, No. 6.
- Mussoorie. *The Indian Forester*,—Vols. XVII, No. 12; XVIII, 1.
- Paris. *Du Muséum d'Histoire Naturelle*,—*Nouvelles Archives*, III<sup>e</sup> Série, Tome II, Fasc. 2; III, Fasc. I.
- . *La Société D'Anthropologie de Paris*,—*Bulletins*, IV<sup>e</sup> Série, Tome I, Fasc. 4; II Fasc. 1 et 2.
- . *La Société de Géographie*,—*Compte Rendu des Séances*, Nos. 19 et 20, 1891.
- . *La Société Zoologique de France*,—*Bulletin*, Tome XVI, Nos. 3, 4 et 8.
- . ————. *Mémoires*, Tome III, No. 5.
- . *Musée Guimet*,—*Annales*, Tome XIX.
- . ————. *Revue de l'Histoire des Religions*, Tome XXIII, Nos. 1-3; XXIV, 1.
- . *Revue Géographique*,—Tome XVI, Nos. 192 et 193.
- Pisa. *La Società Toscana di Scienze Naturali*,—*Atti (Processi Verbali)*, 10 Maggio al 5 Luglio 1891.
- Rio de Janeiro. *Observatorio do Rio de Janeiro*,—*Revista do Observatorio*, Anno VI, No. 10.
- Schaffhausen. *La Société Entomologique Suisse*,—*Bulletin*, Tome VII, Nrn. 1; VIII, 6-8.
- St. Petersburg. *La Société Impériale Russe de Géographie*,—*Journal*, 1890.
- . ————. *Proceedings*, Tome XXVI, Nos. 6; XXVII, 5.
- Sydney. *Linnean Society of New South Wales*,—*Proceedings*, Vol. VI (2<sup>nd</sup> Series), Part 2.
- Taiping. *Perak Government*,—*Perak Gazette*, Vols. IV, Nos. 40 and 41; V, 1.
- Toronto. *Canadian Institute*,—*Transactions*, Vol. II, Part I.
- Vienna. *Der Kaiserlichen Akademie der Wissenschaften*,—*Almanach*, 1890.
- . ————. *Archiv für Osterreichische Geschichte*, Band LXXVI, Hälfte 1 und 2; LXXVII, 1.
- . ————. *Denkschriften (Mathematisch-Naturwissenschaftliche classe)*, Band LVII.
- . ————. (Philosophisch-Historische classe), Band XXXVIII und XXXIX.
- . ————. *Fontes Rerum Austriacarum*, Band XLV, II abth, Half 2.
- . ————. *Sitzungsberichte*, (Mathematisch Natur-

wissenschaftliche classe). Abtheilung I, Band XCIX, Heft 4-10; Abtheilung IIa, Band XCIX, Heft 4-10; Abtheilung IIb, Band XCIX, Heft 4-10; Abtheilung III, Band XCIX, Heft 4-10.

Vienna. Der Kaiserlichen Akademie der Wissenschaften,—Sitzungsberichte (Philosophisch-Historische classe). Band CXXII—CXXIII.

———. Wiener Entomologische Zeitung,—Jahr XI, Heft I.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- BLANFORD, W. T., F. R. S. The Fauna of British India, Mammalia, Part II. 8vo. London, 1891.
- BURGESS, JAMES., LL. D., C. I. E. The Orthography of Foreign Place-Names. (Reprinted from the Scottish Geographical Magazine for January 1892.) 8vo. Edinburgh, 1892.
- BYSACK, GAUR DAS. Kalighat and Calcutta (Reprinted from the Calcutta Review, Vol. XCII, No. 184). 8vo. Calcutta, 1891.
- HAECKEL, ERNST. Anthropogenie oder Entwicklungsgeschichte des Menschen, Theil 1 und 2. 8vo. Leipzig, 1891.
- HAYTER, H. H. Victorian Year-Book for 1890-91, Vol. I. 8vo. Melbourne, 1891.
- MEDLICOTT, H. B. The Evolution of Mind in Man. 8vo. London, 1892.
- NYÁYARATNA, MAHÁMAHOPÁDHYAY MOHE'SA CHANDRA, C. I. E. Brief Notes on the Modern Nyaya System of Philosophy and its Technical Terms. (Read at the Ninth International Congress of Orientalists, 1891.) 8vo. Calcutta, 1891.
- . Vartamana Varsher Sandhi Pujar Samaya Nirnaya. 8vo. Calcutta, 1891.
- OLCOTT, HENRY S. A United Buddhist World (Reprinted from the Theosophist for January 1892.) 8vo. Madras, 1892.
- SARMA, PANDIT BHIMA SEN. Manavádharma Sástra, Vol. I, Nos. 8 and 9. 8vo. Allahabad, 1891.

### MISCELLANEOUS PRESENTATIONS.

Catalogue des Livres de La Bibliothèque de L'Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique. Seconde Partie. 8vo. Brussels, 1890.

L'ACADE'MIE ROYALE DES SCIENCES, DES LETTRES ET DES  
BEAUX-ARTS DE BELGIQUE, BRUSSELS.

Beschrijving der Oudheden nabij de grens der residentie's Soerakarta en Djogdjakarta, door J. W. Ijzerman. Text and Atlas. 4to. Batavia, 1891.

BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENS-  
CHAPPEN, BATAVIA.

Report on the Administration of the Central Provinces for the year 1890-91. Fcp. Nagpur, 1891.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Contributions to Canadian Micro-Palæontology, Part III. By Prof. T. R. Jones. 8vo. Montreal, 1891.

GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA.

Botany. Bulletin No. 4. Contributions to the Queensland Flora. By F. M. Bailey. (Bulletin, Department of Agriculture, Brisbane, No. 13) 8vo. Brisbane, 1891.

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The Indian Antiquary, Vol. XX, Nos. 253 and 254. 4to. Bombay, 1891.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Report on the Administration of the Madras Presidency, during the year 1890-91. Fcp. Madras, 1891.

GOVERNMENT OF MADRAS.

Report on the Administration of the Punjab and its Dependencies for 1890-91. Fcp. Lahore, 1891.

GOVERNMENT OF THE PUNJAB.

The Year-Book of Australia, 1886, 1889 and 1890. 8vo. London.

MESSRS. KEGAN PAUL, TRENCH, TRÜBNER & Co., LD. LONDON.

Monthly Weather Review, May 1891. 4to. Calcutta, 1891.

Original Meteorological Observations, May 1891. Fcp. Calcutta, 1891.

METEOROLOGICAL REPORTER TO THE GOVERNMENT OF INDIA.

Bulletin of the Microscopical Society of Calcutta, Vol. I, No. 10. 8vo. Calcutta, 1891.

Fourth Report of the Microscopical Society of Calcutta for the year 1891. 8vo. Calcutta, 1892.

MICROSCOPICAL SOCIETY OF CALCUTTA.

Grammar of the Bengali Language. By John Beames. 8vo. Oxford, 1891.

OXFORD UNIVERSITY.

Annual Report of the Director of the Royal Alfred Observatory for the years 1888 and 1889. Fcp. Mauritius, 1889 and 1890.

Mauritius Meteorological Results for 1889. Fcp. Mauritius.

ROYAL ALFRED OBSERVATORY, MAURITIUS.

Synopsis of the Results of the Operations of the Great Trigonometrical Survey of India, Vol. XXIII. The South KonKan Coast series of the Southern Trigon. 4to. Dehra Dun, 1891.

Vol. XXIV. The Mangalore Meridional series of Southern Trigon. 4to. Dehra Dun, 1891.

TRIGONOMETRICAL BRANCH, SURVEY OF INDIA, DEHRA DUN.

### PERIODICALS PURCHASED.

- Allahabad. North Indian Notes and Queries—Vol. I, No. 10.
- Berlin. Deutsche Litteraturzeitung,—Jahrgang XII, Nr. 45–47.
- Braunschweig. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften,—Heft V, 1888.
- Calcutta. Indian Medical Gazette,—Vol. XXVII, No. 1.
- Cassel. Botanisches Centralblatt,—Band XLVIII, Heft 4 und 5.
- Geneva. Archives des Sciences Physiques et Naturelles,—Tome XXVI, No. 12.
- Göttingen. Der Königl. Gesellschaft der Wissenschaften,—Göttin- gische Gelehrte Anzeigen, Nrn. 20 und 21.
- Leipzig. Annalen der Physik und Chemie,—Band XLIV, Heft 4.
- . Beiblätter, Band XV, Stück 11.
- London. The Annals and Magazine of Natural History,—Vol. VIII (6<sup>th</sup> Series), No. 48.
- . The Chemical News,—Vols. LXIV, Nos. 1673 and 1674; LXV, 1675–77.
- . The Entomologist's Monthly Magazine,—Vol. II (2<sup>nd</sup> Series) No. 24.
- . The London, Edinburgh and Dublin Philosophical Magazine, —Vol. XXXII (5<sup>th</sup> Series), Nos. 198 and 199.
- . The Messenger of Mathematics,—Vol. XXI, No. 7.
- . The Quarterly Journal of Microscopical Science,—Vol. XXXII, Part 3.
- New Haven. The American Journal of Science,—Vol. XLII (3<sup>rd</sup> Series), No. 251.
- Paris. L' Academie des Sciences,—Comptes Rendus des Séances, Tome CXIII, Nos. 18–20.
- . Revue Scientifique,—Tome XLVIII, Nos. 25 et 26; XLIX, 1–3.
- . Revue Critique d' Histoire et de Littérature,—Tome XXXII, Nos. 45–47.

### BOOKS PURCHASED.

- CHALMERS, JAMES. Pioneering in New Guinea. 8vo. London, 1887.
- LUMHOLTZ, CARL. Among Cannibals; an account of four years' travels in Australia and of Camp Life with the aborigines of Queensland. 8vo. London, 1889.
- WOODFORD, CHARLES MORRIS. A Naturalist among the Head-Hunters; being an account of three visits to the Salomon Islands in the years 1886, 1887 and 1888. 8vo. London, 1890.

PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR MARCH, 1892.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 2nd March, 1892, at 9 P. M.

Hon'ble Sir A. W. Croft, K. C. I. E., M. A., President, in the chair.

The following members were present :—

H. K. W. Arnold, Esq., Bábu Nobinchánd Burál, E. C. Cotes, Esq., Bábu Saratchandra Dás, Dr. A. F. R. Hoernle, A. Hogg, Esq., Rev. H. B. Hyde, C. Little, Esq., Kumár Rameswár Maliáh, Bábu Asutosh Mukhopádhyaýa, T. R. Munro, Esq., L. de Nicéville, Esq., J. D. Nimmo, Esq., Pandit Haraprasád Sástri, Dr. J. H. Tull Walsb, C. R. Wilson, Esq., J. Wood-Mason, Esq.

Visitors :—C. P. Landon, Esq., T. M. Munro, Esq., Rev. F. H. de Winton (Colombo).

The minutes of the last meeting were read and confirmed.

Forty-three presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were balloted for and elected Ordinary Members :—

Hon'ble Raja Oodaypratab Sing, Raja of Bhingá, Oudh.  
Bábu Gopal Ballabh Das, M. A.  
Prof. Nrisimha Chunder Mukerjee.

The following gentlemen are candidates for election at the next meeting :—

Bábu Janaki Nath Bhattacharjee, Professor, Ripon College, Calcutta,

proposed by C. Little, Esq, M. A., seconded by C. R. Wilson, Esq., M. A.

Surgeon Captain F. P. Maynard, I. M. S., proposed by Dr. J. H. Tull Walsh, seconded by L. de Nicéville, Esq., F. E. S.

The COUNCIL proposed the following gentleman for election as an Associate Member at the next meeting :—

Pundit Satyavrata Samasrami, Calcutta, on account of his being the most distinguished Vedic Scholar in India and having edited a number of works for the Bibliotheca Indica.

The following gentleman has expressed a wish to withdraw from the Society :—

Deputy Surgeon-General J. G. Pilcher.

The SECRETARY reported the death of the following member :—

Asutosh Gupta, Esq., C. S.

The SECRETARY read the names of the gentlemen who had been appointed by the Council to serve on the various Committees for the present year.

#### FINANCE AND VISITING COMMITTEE.

|                              |                        |
|------------------------------|------------------------|
| H. K. W. Arnold, Esq.        | Dr. J. Scully.         |
| Bábu Pratápa Chandra Ghosha. | Colonel J. Waterhouse. |
| Dr. A. F. R. Hoernle.        | J. Wood-Mason, Esq.    |
| A. Pedler, Esq.              |                        |

#### LIBRARY COMMITTEE.

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| Nawáb Abdul Latif Bahádur.   | Pandit Mahámahopádhyáya Mahes-<br>chandra Nyáyaratna. |
| H. K. W. Arnold, Esq.        | L. de Nicéville, Esq.                                 |
| Bábu Gaurdás Bysack.         | A. Pedler, Esq.                                       |
| Dr. D. D. Cunningham.        | Hon. Dr. Mahendralál Sarkár.                          |
| Bábu Pratápa Chandra Ghosha. | Dr. J. Scully.  |
| Dr. A. F. R. Hoernle.        | C. H. Tawney, Esq.                                    |
| Prince Jahán Qadr Muhammad   | Colonel J. Waterhouse.                                |
| Wáhid Ali Bahádur.           | J. Wood-Mason, Esq.                                   |
| J. Mann, Esq.                |   |
| Bábu Asutosh Mukhopádhyáya.  |   |

#### PHILOLOGICAL COMMITTEE.

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| Nawáb Abdul Latif Bahádur. | Bábu Nilmani Mukerji.       |
| J. Beames, Esq.            | Bábu Asutosh Mukhopádhyáya. |



|                                      |                              |
|--------------------------------------|------------------------------|
| Bábu Gaurdás Bysack.                 | Pandit Mahámahopádhya Mahes- |
| Dr. A. Führer.                       | chandra Nyáyaratna.          |
| G. A. Grierson, Esq.                 | Captain D. C. Phillott.      |
| Bábu Pratápa Chandra Ghosha.         | Bábu Rajkumár Sarvádhikari.  |
| Dr. A. F. R. Hoernle.                | Sir Sayid Ahmad.             |
| Colonel H. S. Jarrett.               | Hon. Dr. Mahendralál Sarkár. |
| Maulvi Khudá Baksh <u>Khán</u> Bahá- | Pandit Haraprasád Shástri.   |
| dur.                                 | C. H. Tawney, Esq.           |
| C. J. Lyall, Esq.                    | Captain R. C. Temple.        |
| J. Mann, Esq.                        | Dr. G. Thibant.              |
| Bábu Bhudeva Mukerji.                | A. Venis, Esq.               |

## COINS COMMITTEE.

|                           |                   |
|---------------------------|-------------------|
| Dr. A. Führer.            | Dr. J. Scully.    |
| Dr. A. F. R. Hoernle.     | V. A. Smith, Esq. |
| J. H. Rivett-Carnac, Esq. |                   |

## HISTORY AND ARCHÆOLOGICAL COMMITTEE.

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|------------------------|------------------------------|
| Hon. Justice Amir Ali. | Bábu Pratápa Chandra Ghosha. |
| H. K. W. Arnold, Esq.  | Mahámahopádhya Kavirája      |
| J. Beames, Esq.        | Shyamaldás.                  |
| Bábu Gaurdás Bysack.   | J. H. Rivett-Carnac, Esq.    |
| W. H. P. Driver, Esq.  | Captain R. C. Temple.        |
| Dr. A. Führer.         | J. Wood-Mason, Esq.          |

## NATURAL HISTORY COMMITTEE.

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|------------------------|-----------------------|
| Dr. A. W. Alcock.      | L. de Nicéville, Esq. |
| E. C. Cotes, Esq.      | Dr. Fritz Noetling.   |
| Dr. D. D. Cunningham.  | R. D. Oldham, Esq.    |
| J. F. Duthie, Esq.     | S. E. Peal, Esq.      |
| Dr. G. M. Giles.       | Dr. J. Scully.        |
| Dr. G. King.           | J. Wood-Mason, Esq.   |
| C. S. Middlemiss, Esq. |                       |

## PHYSICAL SCIENCE COMMITTEE.

|                       |                              |
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| Dr. J. R. Adie.       | Bábu Asutosh Mukhopádhya.    |
| Dr. A. W. Alcock.     | Dr. Fritz Noetling.          |
| P. N. Bose Esq.       | R. D. Oldham, Esq.           |
| Bábu Gaurdás Bysack.  | A. Pedler, Esq.              |
| Dr. D. D. Cunningham. | Dr. D. Prain.                |
| J. Eliot, Esq.        | Hon. Dr. Mahendralál Sarkár. |
| S. R. Elson, Esq.     | Dr. J. Scully.               |

Dr. G. M. Giles.

Dr. G. King.

Rev. Father E. Lafont.

J. J. D. La Touche, Esq.

C. S. Middlemiss, Esq.

Dr. W. J. Simpson.

Colonel H. Thuillier.

Colonel J. Waterhouse.

J. Wood-Mason, Esq.

Pañdit Hari Mohan Vidyábhúṣaṇ read a note on the Buddhist Bhava Chakra, as described by Kshemendra. Communicated by the Philological Secretary.

*The Buddhist Bhava Chakra (Cycle of Existence) by Hari Mohan Vidyábhúṣaṇ.*

The theory of Pratítya-Samutpáda (causal formation, or evolution,) has ever been regarded by the Buddhists as containing the essence of Buddha's doctrine, and occupies the highest place in the philosophy of Buddhism, and occurs in both schools of Buddhism, in the lesser and the greater vehicles. The Páli Mahávagga and the Lalita-Vistara of the Northern Buddhist literature, both explain it in the same way. Mr. Foucaux has published a French translation of the latter in the "Annales du Musée Guimet," and Professor Sir Monier Williams gives an account of the theory in his "Buddhism," p. 102. But these, being merely translations from the texts (Páli and Sanskrit), do not throw any additional light on the interpretation of the original.

In course of reading the Avadána Kalpalatá with Babu Sarat Chandra Das, which is being published for the Bibliotheca Indica, I came across the 75th Pallava called Pratítya Samutpáda Avadána which consists of only 11 Ślokas.

Here the great poet Kshemendra has so clearly set forth the theory in his inimitable style of versification that one is almost tempted to regard it as the key to the abstruse Buddhist ontology which is so imperfectly understood.

I have carefully studied Sir Monier Williams' account of the theory, and the comparison which he has made between Buddhism and the Vedánta and Sánkhyā schools of philosophy. I have also compared the text of the Kalpalatá with the controversial argumentation of Váchaspati Misra in Bhámatí, and I find that there are additional materials to be drawn from the latter for a thorough elucidation of the famous theory.

The Kalpalatá runs as follows:—

THE TEXT.

सर्वमविद्यामूलं संसारतदप्रकारवैचित्रम् ।

ज्ञातुं वक्तुं हर्तुं कः शक्नोऽन्यः सर्वज्ञात् ॥ १ ॥

आवद्धां सस्त्रिमान् पूर्वं जिनो जेतवने स्थितः ।  
 अश्रेषदश्रीं भगवान् भिक्षुसंघमभाषत ॥ २ ॥  
 षट्शत श्रेयसे प्रज्ञाकोकनिम्बकमानसाः ।  
 प्रतीत्यसमुत्पादं वः कथयामि यद्यात्मनम् ॥ ३ ॥  
 अविद्यावासनेवेयं दुःखस्त्रयस्य भूयसः ।  
 संसारविषयदत्तस्य मूलबन्धविधायिनी ॥ ४ ॥  
 तत्प्रत्ययास्तु संस्काराः कायवाक्मानसात्मकाः ।  
 संस्कारोत्पन्नं विज्ञानं मनः षष्ठेन्द्रियात्मकम् ॥ ५ ॥  
 तत्प्रत्ययं नामरूपं संज्ञासन्दर्शनाभिधम् ।  
 मनः षष्ठेन्द्रियस्थानं षडायतनमप्यतः ॥ ६ ॥  
 षडायतनसंस्लेषः स्पर्शं हृत्विधीयते ।  
 षट्स्पर्शानुभवो यच्च वेदना सा प्रकीर्तिता ॥ ७ ॥  
 तथा विषयसंस्लेश-रागात् दृष्ट्या प्रजायते ।  
 कामादिषु तदुद्भूतमुपादानं प्रवर्त्तते ॥ ८ ॥  
 उपादानोद्भवः कामरूपारूपमयो भवः ।  
 नानायोनिपरादृष्ट्या जातिर्भवसमुद्भवा ॥ ९ ॥  
 जरामरश्म्योक्तादि-सन्ततिर्जातिसंश्रया ।  
 अविद्यादिनिरोधेन तेषामुपरमक्रमः ॥ १० ॥  
 प्रतीत्योत्पादोऽयं बह्वगतिरविद्याकृतपदः  
 स चिन्धो युष्माभिर्विजगन्विश्रामश्मिभिः ।  
 परिज्ञातः सन्धग्नर्जातिं क्लिप्तं क्वासे तनुतां  
 तनुत्वं सम्प्राप्तः सुखतरत्रिवार्य्यश्च भवति ॥ ११ ॥

## TRANSLATION.

(1.) Who except the Omniscient can understand, explain, and dissipate, the manifold operations of this tree of Samsāra, of which Avidyā is the root ?

(2.) In ancient times, when the blessed all-seeing Lord Buddha was residing at the Jeta grove in Śrāvastī, he spoke thus to the assembled Bhikshus :—

(3.) Oh Bhikshus, whose minds have become purified by the light of wisdom, listen to me. I will explain to you the law of causes and effects in their proper order :—

(4.) The all enveloping Avidyá is the radical up-binding cause of Saṃsára, the great tree of poison which is full of misery.

(5.) Avidyá is the efficient cause of Saṃskáras, which have in them the essence of body, speech, and mind. Saṃskára gives rise to Vijnána (consciousness), which has in it the conception of mind.

(6.) From Vijnána comes Náma-Rúpa, the idea of individuality, which brings into operation the six organs of sense.

(7.) The connection, or contact, of Namá-Rúpa with the six organs of sense is called Sparsá. Sensation caused by contact with the senses is called Vedaná.

(8.) Vedaná operating on objects produces Trishṇá (desire). The activity of desire is called Upádána.

(9.) Upádána produces Bhava (re-incarnation), in the three states, namely Káma, Rúpa, and Arúpa.

Re-incarnation causes species, *i. e.*, moving to different kinds of existence.

(10.) Játi, or individualized existence, brings on old age, misery, and death. Cessation from Avidyá stops all these sufferings.

(11.) This cycle of causality based on Avidyá is of manifold operation. You, O Bhikshus, who enjoy peace and retirement in solitude should fully comprehend it by meditation. So that in course of time Avidyá becoming weakened may be dissipated.

The Buddhists presuppose the existence of certain aggregates of atoms (some internal and some external) which constitute this universe. The external aggregates constitute the elements of earth, water, fire, &c. The internal or mental aggregates consist of Skandhas or groups of sensation, knowledge, feeling, &c. All these taken together constitute the basis of all personal existence. The personal existence is formed out of these by the cycle of causality called Pratitya Samutpáda headed by Avidyá, a term which has been variously rendered by scholars as Nescience, Ignorance, &c.

First of all Avidyá operates on the basis of the impersonal existence of a being, or in other words on the union of the two kinds of aggregates, and thereby generates what is called Saṃskára.

It must not be here supposed that by the appearance of Saṃskára Avidyá at all disappears. It continues to work as a concurrent cause with Saṃskára. Saṃskára in its turn causes consciousness, or Vijnána, a term by which the Buddhists convey the idea of soul. When Vijnána appears, Saṃskára also continues to operate as a concurrent cause; Vijnána again generates Náma and Rúpa, *i. e.*, the individual being.

The individual being is possessed of the six organs of sense. The operation of these six organs of sense is called *Sparsá*. The state of pleasure, pain, or indifference, produced by *Sparsá*, is called *Vedaná*. *Vedaná*, or Sensation, working in reference to objects external or internal produces desire. Desire again in reference to its objects generates a kind of activity or *Upádána*, a word which conveys the same idea as the well known Buddhist term "Karma." This activity causes *Bhava*, *i. e.*, a new existence based on a new set of aggregates. This again by *Upádána*, now acting as a concurrent cause, is moved to existence in species, *i. e.*, *Játi*. The condition of existence in the species, be it in a god of long life or in a short lived insect, is old age, misery, and death.

In this process it is evident that a cause, or a system of causes, operating on each other, or on the aggregates, produces effects which are changeful according to the nature of Karma in the individual being. In Buddhism though it is generally held that everything is transient and illusory, the identity or oneness of an entity in all its embodiments is maintained. This is clearly illustrated by the writers of the *Játakas* of Buddha and other saintly Buddhists. For at the end of each *Játaka* its hero is made to declare that in such and such birth he was a god, a tiger, or a worm, and so on.

The idea of *Ekotíbháva* the continued oneness of an entity in all its embodiments thus pervading the doctrine of Buddhism forces us to think that Dharma, or phenomena, alone are transient and non-permanent, and not the principal entity. The successions of phenomena and the conditions of existence are changeful, the entity or *Sattva* that enjoys or suffers remaining all the while the same.

The Buddhists think that it is possible to liberate the *Sattva*, the individual self, from the influence of *Avidyá*, and thereby from the working of the cycle of causality believed to be the prime mover of the *Bhava Chakra*.

The following papers were read :—

1. *Ráma-tankis*,—By Man Mohan Chakravarti, M. A., B. L.
2. *A vocabulary of the Korwa language collected*,—By W. CROOKE, B. A., C. S.
3. *On the Topography of Old Fort William, Calcutta*.—By C. R. WILSON, M. A. *Philological Secretary*.

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

## LIBRARY.

The following additions have been made to the Library since the meeting held in February last.

## TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

- Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. XIII, Nos. 2-6.
- . —————. American Journal of Mathematics, Vol. XIII, Nos. 3 and 4.
- . —————. Register for 1890-91.
- Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Notulen, Deel XXIX, Aflevering 3.
- . —————. Tijdschrift voor Indische Taal-, Land-en Volkenkunde. Deel XXXV, Aflevering 1.
- Bombay. Bombay Natural History Society,—Journal, Vol. VI, No. 3.
- . The Indian Antiquary,—Vol. XXI, Part 256.
- Budapest. Soci t  Hongroise de G ographie,—Bulletin, Tome XIX, Nos. 8-10.
- Calcutta. Asiatic Society of Bengal,—Proceedings, No. 1, January 1892.
- . Indian Engineering,—Vol. XI, Nos. 6-9.
- . Photographic Society of India,—Journal, Vol. V, No. 2.
- Cassel. Des Vereins f r Naturkunde zu Kassel,—Bericht, XXXVI-XXXVII.
- Florence. La Societ  Africana d' Italia,—Buletino, Tome VII, Fascicolo 5<sup>o</sup> e 6<sup>o</sup>.
- Halifax. Nova Scotian Institute of Natural Science,—Proceedings and Transactions, Vol. VII, Part 4.
- Havre. Societ  de G ographie Commerciale du Havre,—Bulletin, Novembre-D cembre 1891.
- Jassy. Societ ii Științifice Și Literare din Iași,—Arhiva, Anno II, Fasc. 10-12.
- Li ge. Societ  G ologique de Belgique,—Annales, Tome XVIII, No. 2 ; XIX, 1.
- London. Geological Society,—Quarterly Journal, Vol. XLVIII, No. 189.
- . Nature,—Vol. XLV, Nos. 1160-63.
- . The Academy,—Nos. 1029-32.
- . The Athen um,—Nos. 3352-55.
- Melbourne. Royal Society of Victoria,—Transactions, Vol. III, Part I.

- Mexico. La Sociedad Científica "Antonio Alzate,"—Memorias y Revista, Tome V, Nos. 1 y 2.
- Naple. La Società Africana d' Italia,—Bollettino, Anno X, Fasc. 11 et 12.
- New York. American Museum of Natural History,—Annual Report of the Trustees for 1890-91.
- Paris. Journal Asiatique,—III<sup>e</sup> Série, Tome VI; V<sup>e</sup>, VI; VI<sup>e</sup>, IV-VI, X; VII<sup>e</sup>, XI, Nos. 1 et 2, XIII, No. 1, XIV-XIX.
- . La Société de Géographie,—Bulletin, Tome XII, No. 3.
- . ———. Compte Rendu des Séances, No. 1, 1892.
- Philadelphia. Academy of Natural Sciences of Philadelphia,—Proceedings, Part II, 1891.
- ———. American Philosophical Society,—Proceedings, Vol. XXIX, No. 135.
- Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno VI, No. 11.
- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Tome XX, Nos. 11 et 12.
- Taiping. Government of Perak,—Perak Government Gazette, Vol. V, Nos. 2-4.
- Vienna. Der K. K. Zoologisch-botanischen Gesellschaft in Wien,—Verhandlungen, Band XLl, Nos. 3 und 4.
- Washington. United States National Museum,—Proceedings, Vol. XIII.
- Zagreb. Hrvatskoga Arkeologiokoga Druzstva,—Viestnik, Godina XIV, Br. 1.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- DELISLE, MADAME L. Choix de Lettres D' Eugène Burnouf, 1825-1852. 8vo. Paris, 1891.
- RĀY, PRATĀPA CHANDRA, C. I. E. The Mahabharata, translated into English Prose, Part LXXI. 8vo. Calcutta, 1891.

### MISCELLANEOUS PRESENTATIONS.

- Returns of the Rail-borne Traffic of the Central Provinces for the quarter ending 30th September, 1891. Fcp. Nagpur, 1892.  
CHIEF COMMISSIONER, CENTRAL PROVINCES.
- Resolution reviewing the reports on the working of the District Boards in Bengal during the year 1890-91. Fcp. Calcutta, 1891.

- Resolution reviewing the reports on the working of Municipalities in Bengal during the year 1890-91. Fcp. Calcutta, 1891.
- Returns of the Rail and River-borne Trade of Bengal during the quarter ending the 30th September, 1891. Fcp. Calcutta, 1892.

## GOVERNMENT OF BENGAL.

- Return of an Article on Opium by Dr. Watt, Reporter on Economic Products with the Government of India, recently written by him, and intended to be published in the Sixth Volume of the Dictionary of Economic Products of India. Fcp. London, 1891.
- Statistical Abstract relating to British India from 1880-81 to 1889-90. 8vo. London, 1891.
- The Indian Antiquary, Vol. XXI, Part 256. 4to Bombay, 1892.
- Third Report of the Royal Commission appointed to inquire into the subject of Mining Royalties; with minutes of evidence and appendices. Fcp. London, 1891.
- Usha. Vol. II, Part I. 8vo. Calcutta, 1892.

## GOVERNMENT OF INDIA, HOME DEPARTMENT.

- Scientific Results of the Second Yarkand Mission; based upon the collections and notes of the late Ferdinand Stoliczka, Ph. D. Hymenoptera. By Frederick Smith. 4to Calcutta, 1878.

## GOVERNMENT OF INDIA, REV. AND AGRI. DEPARTMENT.

- Annual Administration Reports of the Forest Department (Southern and Northern Circles), Madras Presidency, for the official year 1890-91. Fcp. Madras, 1891.
- Results of Observations of the fixed Stars made with the Meridian Circle at the Government Observatory, Madras, in the years 1871, 1872 and 1873. 4to Madras, 1892.
- South-Indian Inscriptions. Tamil Inscriptions of Rajaraja, Rajendrachola, and others in the Rajarajesvara Temple at Tanjavur (Archæological Survey of India, Vol. II, Part I). By E. Hultzsch, Ph. D. 4to Madras, 1891.

## GOVERNMENT OF MADRAS.

- Report on the Administration of the N.-W. Provinces and Oudh for the year ending 31st March, 1891. Fcp. Allahabad, 1892.

## GOVERNMENT OF N.-W. PROVINCES AND OUDH.

- Handleiding tot de Kennis der flora van Nederlandsch Indië. Deel II, Stuk 1. Door Dr. J. G. Boerlage. 8vo. Leiden, 1891

## GOVERNMENT OF NETHERLANDS INDIA, BATAVIA.

- Appendix No. III. to Agricultural Glossary of the N.-W. P. By W. Crooke, Fcp.

## DR. A. F. R. HOERNLE.

- Johns Hopkins University Studies in Historical and Political Science.



- Ninth Series, I-II. Government and Administration of the United States. By Westel W. Willoughby, A. B., and William J. Willoughby, A. B. 8vo. Baltimore, 1891.
- Johns Hopkins University Studies in Historical and Political Science. III—IV. The History of University Education in Maryland. By Bernard C. Steiner A. M. (Yale). 8vo. Baltimore, 1891.
- . V—VI. The Communes of Lombardy from the VI. to the X. Century. By William Klapp Williams, Ph. D. 8vo. Baltimore, 1891.
- . VII—VIII. Public Lands and Agrarian Laws of the Roman Republic. By Andrew Stephenson, Ph. D. 8vo. Baltimore, 1891.
- . IX. State and Federal Government in Switzerland. By John Martin Vincent, Ph. D. 8vo. Baltimore, 1891.
- Dessertations presented to the Board of University Studies of the Johns Hopkins University for the degree of Doctor of Philosophy:—
- A Contribution to the Embryology and Phylogeny of the Pycnogonids. By T. H. Morgan. 8vo. Baltimore, 1891.
- A Rhetorical Study of the Leptinean Orations. By J. E. Harry. 8vo. Baltimore, 1891.
- Archaisms of Terence mentioned in the Commentary of Donatus. By Kirby Williams Smith. 8vo. Baltimore, 1890.
- Ortho-Sulpho-Para-Toluic Acid and some of its Derivatives. By Wyatt W. Randall. 8vo. Baltimore, 1891.
- Paraxylenedisulphonic Acid. By Jesse H. Holmes. 8vo. Baltimore, 1890.
- Researches on the Double Halides. By Charles E. Saunders. 8vo. Baltimore, 1891.
- Some Halogen Substitution-Products of Benzoic Sulphinide and the changes caused in their taste by changes in composition. By Rudolf de Roode. 8vo. Baltimore, 1890.
- Sulphon-Fluorescein and other Sulphon-Phthaleins. By John White, Jr. 8vo. Baltimore, 1891.
- The Dramatic and Mimetic Features of the Gorgias of Plato. By Barker Newhall, M. A. 8vo. Baltimore, 1891.
- The Supreme Court of the United States. By Westel W. Willoughby. 8vo. Baltimore, 1890.

## JOHNS HOPKINS UNIVERSITY, BALTIMORE.

- Monthly Weather Review, June 1891. 4to. Calcutta, 1892.
- Original Meteorological Observations, June 1891. 4to. Calcutta, 1892.
- METEOROLOGICAL REPORTER TO THE GOVT. OF INDIA.
- Bulletin of the Microscopical Society of Calcutta, Vol. I, No. II. 8vo. Calcutta, 1892.

## MICROSCOPICAL SOCIETY OF CALCUTTA.

Return of Wrecks and Casualties in Indian Waters for the year 1890.  
Fcp. Calcutta, 1891.

PORT OFFICER, CALCUTTA.

Bibliography of the Chemical Influence of Light. By Alfred Tucker-  
man Ph. D. 8vo. Washington, 1891.

Experiments in Aerodynamics. By S. P. Langley. 4to. Washington,  
1891.

Index to the Literature of Columbium, 1801-1887. By Frank W.  
Traphagen, Ph. D. 8vo. Washington, 1888.

The Toner Lectures, No. IX. Metal over-work and premature disease  
among public and professional men. By Charles K. Mills, M. D.  
8vo. Washington, 1885.

SMITHSONIAN INSTITUTION, WASHINGTON.

North American Fauna, No. 5. 8vo. Washington, 1891.

UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON.

Catalogue of the Yale University, 1891-92. 8vo. New Haven, 1891.

YALE UNIVERSITY.

### PERIODICALS PURCHASED.

Allahabad. North Indian Notes and Queries,—Vol. I, No. 11.

Calcutta. Indian Medical Gazette,—Vol. XXVII, No. 2; and Index to  
Vol. XXVI.

Geneva. Archives des Sciences Physiques et Naturelles.—Tome XXVII,  
No. 1.

Leipzig. Annalen der Physik und Chemie.—Band XLV, Heft 1.

———. ————. Beiblätter, Band XV, Stück 12; XVI, 1.

London. The Chemical News,—Vol. LXV, Nos. 1678-81.

Paris. Revue Scientifique,—Tome XLIX, Nos. 4-7.

### BOOKS PURCHASED.

REHATSEK, E. The Rauzat-us-Safa, Vol. I, Part I. Edited by F. F.  
Arbuthnot, M. R. A. S. (Oriental Translation Fund, New Series. I).  
8vo. London, 1891.

**PROCEEDINGS**  
**OF THE**  
**ASIATIC SOCIETY OF BENGAL,**  
**FOR APRIL, 1892.**

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 6th April, 1892, at 9-15 P. M.

Hon'ble Sir A. W. Croft, K. C. I. E., M. A., President, in the Chair.

The following members were present :—

H. K. W. Arnold, Esq., Bábu Gaurdás Bysack, E. C. Cotes, Esq., Bábu Sarat Chandra Dás, The Most Rev. Dr. Paul Goethals, Rev. H. B. Hyde, W. H. Jobbins, Esq., C. Little, Esq., Kumár Rameswár Maliáh, Bábu Asutosh Mukhopádhya, T. R. Munro, Esq., L. de Nicéville, Esq., R. D. Oldham, Esq., F. J. Rowe, Esq., Pandit Haraprasád Shástri, Dr. J. H. Tull Walsh, C. R. Wilson, Esq.

Visitors :—Dr. W. W. Sheppard, W. J. Simmons, Esq., F. H. Smith, Esq.

The minutes of the last meeting were read and confirmed.

Twenty-five presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were ballotted for and elected Ordinary Members :—

Bábu Janaki Nath Bhattacharjee.  
Surgeon-Captain F. P. Maynard.

The following gentleman proposed by the Council at the last meeting was ballotted for and elected an Associate Member :—

Pandit Satyavrata Samasrami.

The following gentlemen are candidates for election at the next meeting:—

Hon'ble Sir C. A. Elliott, K. C. S. I., C. I. E., Lieutenant-Governor of Bengal, proposed by the President, seconded by Col. J. Waterhouse.

G. W. Forrest, Esq., B. A., Assistant Secretary to the Government of India, Home Department, proposed by Col. J. Waterhouse, seconded by C. Little, Esq., M. A.

Lieutenant W. A. Harrison, R. E., Fort William, proposed by F. J. Rowe, Esq., M. A., seconded by C. Little, Esq., M. A.

Colonel T. H. Haldich, R. E., Survey of India, proposed by Col. J. Waterhouse, seconded by C. Little, Esq., M. A.

The PRESIDENT announced that in consequence of his approaching departure from India on furlough, it would be necessary for him to place his resignation in the hands of the Society. In doing so, he begged again to express his thanks to the Society for the honour they had done him in electing him a second time to the office of President, an honour of which he was deeply sensible.

The following papers were read:—

1. *An Account of the Journey of a Bengal Pandit to Tibet in 1037–38 A. D., by Bromton, the founder of the Grand Hierarchy of Tibet.*—By BABU SARAT CHANDRA DÁS, C. I. E.

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

2. *Brief note on the site of Ghiaspúr, Bengal.*—By H. BEVERIDGE, Esq., C. S.

Thomas in his initial coinage of Bengal, J. A. S. B. for 1867, pp. 50, 51 and 62 mentions a mint-town in Bengal named Ghiaspúr and says that he has been unable to identify it. I beg to suggest that it is Ghiaspúr on the left bank on the Bhagirathi between Baluchar and Jangipur.

On the right bank of the Bhagirathi on the way from Baranagar (famous for Rani Bhowani's temples) to Raghunathganj opposite Jangipur, there is a place called Ghiásábád. It is described by Captain Layard in J. A. S. B. for 1853, p. 577, and two stones from there are now in the Indian Museum. (*Vide* Dr. Anderson's Catalogue, Vol. II, s. v. Ghiásábád.)

At Ghiasabad I saw the dargah described by Captain Layard. It is in a desolate condition, but contains four Mahomedan tombs. One is in the centre and is higher than the others. I was told that it was the tomb of Ghiásuddin Sultan Ahl-i-Qoresh, and that the other three were those of his wife and two daughters. Captain Layard was unable

to make out what Ghiassuddin this was. I beg to suggest that it was Bahadur Khan or Bahadur Shah who also had the name of Ghias or Ghiassuddin. (See Thomas and the Riyáz.) Bahadur Shah was skinned according to Ibn Batuta and the skin was taken to Delhi, but the body may have remained.

The other name of Ghiásabád is Bádrihat (not Bodrihat, or Badrihat) and Hunter speaks of this as the Hindu name. But this is doubtful. May it not be a contraction for Bahadurihat, *i. e.*, the market of Bahadur Shah ?

I have not visited the Ghiaspur or the other side of the river. It is about 2 miles higher up the river than Ghiásabád. I am told that there is nothing there, that the place has been washed away, and that there is also jungle. Bahadur Shah, or Ghiás, whoever he was, may have had his city on both sides of the river just like Murshidabad was. Ghiáspúr is disguised in the map under the name Goyespoor. If the Ghiás of Ghiasabad be not Bahadur Shah he may be the Ghiássuddin who was killed in battle with Nasiruddin. The words "near Gaur" may be a mistake. Of course Ghiásabád may really be Ghiáspur.

3. *Remarks on the Fauna of Narcondam and Barren Island.*—By D. PRAIN, ESQ., M. B.

During a botanical visit to these two islands, the results of which are now being elaborated, the writer, though unable and indeed unqualified to devote much attention to their fauna, could not avoid coming in contact to some extent with their animal and insect life. And perhaps his few rough notes made at the time, if thrown into a connected form, may induce by their perusal some qualified animal biologist to visit and investigate them thoroughly. In Mr. Mallet's exhaustive monograph of the geological structure and physiological aspects of the islands\* their flora and fauna are only casually mentioned; similarly, in the writer's forthcoming notice of their vegetation, there can be but incidental allusions to their topography, geology, or zoology. Yet from what the writer was himself able to observe it is probable that their zoology will prove as interesting as their geology or their botany. It need hardly be said that the notes which follow allude entirely to air-breathing creatures and that no reference will be made to the marine fauna of the localities.

MAMMALIA :—A rat swarms everywhere on both islands and is the most plentiful mammal present. Examples preserved in the Indian Museum, obtained in Barren Island by Mr. Oldham, show that the

\* *Memoirs of the Geol. Survey of India*, vol. xxi, pp. 251—286.

species is the Andamanese form of the widely distributed Tree-Rat (*Mus rattus* VAR. *andamanensis*.)\*

In Narcondam at dusk a frugivorous bat was observed flitting from tree to tree, and in Barren Island the writer came upon an example of *Ficus Rumphii*, on the outer aspect of the outer cone and about half a mile to the north of the landing place at the hot-spring, which was the home of a colony of these creatures. The writer was able to reach a point on the cliff almost overlooking the tree and where he was not more than twenty-five yards away from the bats. He was able to see that they were of a very dark brown (almost black) colour but, having no fowling-piece, he could not secure a specimen.† It is not improbable that, as in the case of the rats, the bats on the two islands belong to the same species.

Goats have more than once been landed on both islands. On Narcondam there were however none to be seen and when one recollects that for a considerable portion of the year the island is absolutely waterless the fact is not surprising. And those formerly landed on Barren Island must also have perished, for a few years ago, Col. Tucker, then in charge of the Andamans, found it necessary to land five more. During our visit we several times saw three goats in company and as we discovered among the lava blocks the skeletons of two others it is not impossible that we were thus able to account for the whole five. The three seen together were all adults, perhaps therefore they have either not begun to breed or their young have been unable to survive. A well-trodden foot-path across the lava causeway near the landing-place shows that the goats come daily, at least during the dry season, to drink at the only spring the island possesses, hot-water charged with over 200 grains per gallon of saline matter.‡ Each morning during the writer's

\* *Catal. of Mammalia in the Indian Museum*, pt. ii, p. 63.

† Had a specimen been shot it probably could not have been secured, for a direct descent from the writer's position to the foot of the tree was impracticable and to reach the spot where the specimen must have fallen would have entailed:—1, a return to the landing-place (two hours work to begin with); 2, rowing half a mile to the mouth of the gully in which the tree stood; and (granting that the sea-mouth of the proper gully was hit off and, if it was, that a landing could have been effected—neither event being at all a necessary consequence,) 3, a search for the particular tree involving a climb of over 800 feet through a particularly difficult jungle with much the same prospect of ultimate success that there would be in the proverbial search for "a needle in a haystack." But this should only whet the appetite of the true collector for a visit to the islands; it will however show that the geologist or botanist who visits the place with but a limited time at his disposal, must confine his attention to his own subject and can do but *dilettante* work in any other direction.

‡ *Memoirs of the Geol. Survey of India*, vol. xxi, p. 277.

visit we could see when we landed, from the new foot-prints on the wet sand round the spring and from the fresh dung there and along the pathway, that the goats had visited the spot overnight.\*

**BIRDS:**—A brief sketch of the Avi-fauna of the islands has already been written by Mr. A. O. Hume.† His visit to each island was however very short; it may not therefore be uninteresting to give a list of the birds seen by him and to mention in addition those seen and recognised by the writer. It is unnecessary to say that even now the list must be very far from complete.

*List of the Birds of Narcondam and Barren Island.*

1. CUNCUMA LEUCOGASTER Gmel. (White-bellied Sea-Eagle.) *Stray Feathers* ii, 149.

Very plentiful in both islands, but especially in Narcondam, where to watch six or eight of them sweep and wheel and dart at each other, apparently in play, far overhead, was a most fascinating occupation. While ascending the mountain that composes the island we saw what was evidently the nest of this species at about 1,500 ft. elev.

**DISTRIB.** India, Burma, Andamans, Nicobars, Malaya.

2. COLLOCALIA LINCHI Horsf. (Rock Swiftlet.) *Stray Feathers* ii, 157.

A swiftlet is very common on both islands and can be seen as one rows along the coast darting in and out from every cavern hollowed by the sea under the old lava-flows. As no edible birds'-nests are found on either island this is most probably the species that one observes.‡

**DISTRIB.** Andamans, Nicobars, Malaya.

\* The landing of goats on such islands has little to recommend it from the economic point of view while the humanitarian aspect of the act has two sides. It is no doubt praiseworthy to attempt to stock such islands with goats in the hope that their flesh may prove of use to shipwrecked mariners, but to deliberately condemn the animals to a death by thirst—as is done every time that goats are landed on Narcondam—appears to the writer to be an act which should not be repeated. Nor is it at all certain that the landing of goats on Barren Island may not be—all the physical conditions of the island considered—an act of even more refined cruelty.

† *Stray Feathers*, vol ii, pp 103–110. The localities are again mentioned in connection with the birds themselves in Mr. Hume's detailed list of Andamans birds, l. c. pp. 139–324.

‡ It ought to be observed however that some recent writers, (very notably Guillemard, in the *Cruise of the Marchesa*, vol. ii), return to the view which Hume, l. c., so strenuously opposes and apparently satisfactorily refutes, that *Collocalia Linchi* is the swift which makes edible nests. If Guillemard be right then the **Rock Swiftlet** referred to by Mr. Hume and the writer must be a different species.

3. HALCYON ATRICAPILLUS Gmel. (Small Kingfisher.) *Stray Feathers* ii, 168; also p. 104.

This, Mr. Hume says, *l. c.* p. 104, is most probably the Kingfisher he observed on Barren Island. Oddly enough the writer saw no Kingfisher on Barren Island, but several individuals, perhaps of this species, were very actively employed on the coast at the north-east corner of Narcondam.

DISTRIB. India, Burma, Andamans, Nicobars.

4. RHYTICEROS NARCONDAMI Hume. (The Narcondam Hornbill). *Stray Feathers* i, 411; ii, 176.

This species, which is confined to Narcondam, is exceedingly plentiful there. It is very far from shy, for on one occasion when the writer and his attendants were busy cutting down a tree, three or four of these birds, apparently attracted by the noise, came and settled above us, continuing to scream and chatter overhead, while the tree vibrated under our strokes, for some time before making up their minds to fly away.

DISTRIB. Endemic.

5. PALAEOORNIS AFFINIS Tytler. (Red-cheeked Andaman Paroquet.) *Stray Feathers* ii, 184.

Common on both islands.

DISTRIB. Andaman group, including Coco Islands and Preparis.

6. EUDYNAMYS MALAYANA Cab. (Andaman Koel). *Stray Feathers* ii, p. 192.

The writer saw this Koel several times during his stay on Narcondam; Mr. Hume did not happen to have an opportunity of noting the species.

DISTRIB. India, Burma, Andamans, Nicobars, Malaya.

7. ARACHNECHTHRA ANDAMANICA Hume. (Andaman Sun-Bird). *Stray Feathers* ii, 198.

Observed by Mr. Hume on both islands, not seen by the writer.

DISTRIB. Andaman group, including Coco Islands and Preparis.

8. OTOCOMPSA EMERIA Shaw. (Red-Whiskered Bulbul.) *Stray Feathers* ii, 225.

Observed by Mr. Hume on Barren island, not seen by the writer.

DISTRIB. India, Burma, Andamans, Nicobars (introduced).

9. CORVUS LEVAILLANTII Lesson. (The Bow-billed Corby). *Stray Feathers* ii, 243.

The writer one day noticed five of these large Andaman Crows



on Barren Island. There were none there apparently when Mr. Hume visited the island.

DISTRIB. Himalaya; India; Burma, Andamans; Malaya.

10. CARPOPHAGA AENEA Linn. (Imperial Pigeon.) *Stray Feathers*, ii, 260.

Noticed once on Narcondam.

DISTRIB. Himalaya; India; Indo-China, Andamans; Malaya.

11. CARPOPHAGA BICOLOR Scop. (Pied Fruit-Pigeon.) *Stray Feathers* ii, 260.

Exceedingly plentiful on both islands; a visitant from the southward.

DISTRIB. Malaya; Nicobars; Andamans (a visitant).

12. CALOENAS NICOBARICA Linn. (The Nicobars Fruit-Pigeon.)

Noticed several times on Narcondam, and once (three individuals together) on Barren Island, on the inner aspect of the outer crater to the south of the landing-place; a visitant from the Nicobars.

DISTRIB. Nicobars; Malaya: Andamans (a visitant).

13. CIRREPIDESMUS MONGOLICUS Pallas. (Mongolian Shore-Plover.) *Stray Feathers* ii, 289.

Rather common on both islands.

DISTRIB. Eastern Asia.

14. TRINGOIDES HYPOLEUCUS Linn. (Sand-Piper.) *Stray Feathers* ii, 299.

Very common on both islands.

DISTRIB. Cosmopolitan.

15. GALLINULA PHOENICURA Penn. (Water-Hen.)

Barren Island. This was not met with by Mr. Hume and it is not a bird that one would expect to see in these islands. Yet each time we landed on Barren Island and each time we returned to the beach from the interior we observed in the vicinity of the small hot-spring at the landing-place what appeared to us to be the same individual of this species. On being disturbed it walked leisurely away and disappeared among the crevices of the adjacent black lava-flow. Mr. Hume notes his having met with the species in suitable localities everywhere from the Great Coco to Acheen; we must therefore suppose that the individual we saw had by some accident reached the island from one of the neighbouring members of the group and was making the best of the situation.

DISTRIB. India; Indo-China, Andamans; Nicobars, Malaya.

16. *DEMIEGRETTA SACRA* Gmel. (Blue Reef-Heron.) *Stray Feathers* ii, 304.

Common on both islands.

DISTRIB. India, Burma, Andamans, Nicobars.

17. *ARDEOLA GRAYII* Sykes. (Pond-Heron.) *Stray Feathers* ii, 309.

Barren Island only (*Hume*); not seen by the writer.

DISTRIB. India; Andamans (a visitant).

18. *STERNULA MELANAUCHEN* Temm. (Snowy Tern.) *Stray Feathers* ii, 319; also p. 107.

Barren Island (*Hume*).

DISTRIB.\* Malaya; Nicobars; Andamans.

The common Fowl is said to have been landed on both islands along with the goats, there is now, however, no trace of its existence. Possibly the large lizard—*Hydrosaurus salvator*—which is common, at least on Narcondam, may be held responsible for its disappearance, nothing being more certain than that a fowl, if nesting on the ground, must sooner or later fall a victim to this voracious creature.

REPTILES:—There is on Narcondam at least one land-snake, for the writer and his companion (Mr. McCausland, commander of the "*Nancowry*") came upon one cast-off skin in the centre of the island.

Lizards, both iguaniform lizards and skinques, are very common on Narcondam though not at all frequent on Barren Island. The whole of the crested ones were very shy but the skinques were the reverse of timid.† The large water-lizard, *Hydrosaurus salvator*, is very common on Narcondam and is so unused to being disturbed that it waits till one comes so close as to be able to touch it before turning aside into the jungle. It was most common near the north bay where there is a small sandy beach frequented by turtles. Doubtless here, as elsewhere, the

\* In this list of birds only the distribution within the limits of South-Eastern Asia (India and Ceylon; Indo-China; Malaya and Northern Australia) is given, a more detailed account of the distribution for the few that extend beyond this area being, for our present purpose, unnecessary.

† Having one forenoon crossed the island from the landing-place near the anchorage at the north-east corner to the north bay the writer with his companion (Mr. Kellog, Gunner of the "*Nancowry*") rested for lunch in the shade of the Coconut grove there; while eating we were amused to watch the skinques prospecting for the crumbs that fell aside; after a little—we in the meantime sitting as still as possible—some of the bolder or more confident lizards climbed our legs in search of more. We observed besides that others of them disputed with the hermit-crabs which swarmed there for a share of the nutty portion of some opened coco-nuts that we had thrown aside after drinking the "milk."

eggs of the turtle form one of the staple foods of the *Hydrosaurus*, to the omnivorous propensities of which the writer has already had occasion to allude.† In Barren Island none of these lizards were seen but it is not at all improbable that they are present, for there are two small bays at the south-west corner where there are sandy beaches with a *Pandanus* fence and some Coco-nut trees behind. Owing to the strong swell and heavy surf the writer was unable to land at either of these places, nor did he succeed in crossing the outer cone at a point whence he could reach them from the interior. It is, however, not at all unlikely that turtles visit these sandy patches and, if so, there is no doubt that, if *Hydrosaurus* exists on the island, he will be in evidence there.

CRUSTACEANS :—Besides hermit-crabs, which are very plentiful, there are, at least on Barren Island, land-crabs.\* And, as might be surmised, *Grapsus* is plentiful on the rocks along the coast and is a source of interest to the Blue Reef-Heron and some of the other sea-fowl.

OTHER AIR-BREATHING CREATURES :—The writer did not see a single beetle on Barren Island, but perhaps the season of his visit (March—April) had something to do with their absence. One or two were met with on Narcondam—the specimens obtained including, amongst others, a Golden-Beetle.

Spiders are common on both islands, particularly on Narcondam, where also a scorpion is to be found. It was, however, only seen once, when digging up an *Amorphophallus* tuber, and was not preserved.‡

Ants are very common, the two chief kinds being the common red mango-ant, or a species very like it, both physically and physiologically; and a very small species that makes long powdery tunnels along the outside of, and sometimes also makes its home inside, the stems and branches of various shrubs, *e. g.*, it is common to find it inside living branches of a species of *Leea* and of two species of *Ficus* (*F. brevicuspis* and *F. hispida* var. *daemonum*).

Among insects, besides a sand-fly and a mosquito, whose presence goes without saying, there is a very striking form, only noticed however in Barren Island, in the shape of a small hornet which builds sometimes a discoid nest composed of single cells, mouth downwards, in juxtaposition, and sometimes a long narrow nest of single

\* *Journ. As. Soc. Beng.* vol. lx, pt. 2, p. 402, [footnote].

† Land-crabs were not observed either on Narcondam or on Barren Island, but Mr. Wood Mason has very kindly shown the writer specimens of a land-crab that are preserved in the Indian Museum; these were obtained in Barren Island by Mr. Oldham.

‡ The writer's native collector promptly treated it as vermin, and ere a protest could be uttered had crushed it between two stones.

cells in one or two rows on the under-surface of slender twigs.\* Its sting is very sharp at the time; fortunately the irritation passes off almost completely in half-an-hour or so; unfortunately the nests are very numerous on all the drier slopes where there is any jungle.

Butterflies are not numerous in either island. On Narcondam one species (*Cynthia erota*) is plentiful, and another (*Huphina lichinosa*) is common; the other species are, at least at the season of the writer's visit, but poorly represented. On Barren Island all the species seen are, at that season, particularly scarce. The writer collected on Narcondam a few of most of the kinds seen, and during his visit to Barren Island he had the pleasure of the company of Mr. R. Wimberley, of the Port Blair Commission, whose ardour as a lepidopterist is well-known to his Indian brethren. As Mr. Wimberley came on purpose to collect the butterflies of Barren Island the writer paid but little attention to them; he had hoped that Mr. Wimberley might prepare a note, which could not fail to be highly interesting, on the species he had collected. Mr. Wimberley has not seen his way to do this; he has, however, most obligingly supplied the writer with a list of the species obtained by him; this list is given below *verbatim*. As regards the specimens collected on Narcondam the writer has had the privilege of the kind assistance of Mr. deNicéville, who has most obligingly examined the small collection and named the species.†

#### *List of Butterflies seen on Barren Island.*

(Prepared by Mr. R. Wimberley, Port Blair.)

1. HYPOLIMNAS BOLINA Linn. ♂ two.
2. NACADUBA CÆLESTIS DeNicév. Several.
3. CASTALIUS (species, could not tell).

\* To the writer's perhaps prejudiced imagination it appeared that it preferred making its nest on *Capparis sepiaria* to building elsewhere. The arrangement is excellent; an outlying sprawling branch hooks itself unobserved to one's leg or one's arm; the next movement sets the whole bush a-shaking and before one is aware his head and face form the *point d'appui* for a whole army of angry wasplets. The nests, from their shape and situation, are particularly difficult to see, and after forming the firmest resolve to be more wary next time, one only *knows* that he has blundered into another nest when it is necessary to pick the creatures off his face and from out his hair. So far from trying to obtain specimens our principal object was to keep out of the creature's way.

† While thanking Mr. de Nicéville for his kindness in naming this small collection, the writer would take this opportunity of mentioning that Mr. de Nicéville has also kindly pointed out that the butterfly mentioned in *Jour. As. Soc. Beng.* lix, pt. 2, p. 256, as feeding on *Calotropis gigantea*, and as a recent introduction into the Andamans is not *Danaüs genutia*, as there stated, but *Danaüs chrysippus*.

4. *ARHOPALA CENTAURUS* Fabr. ♀ one.
5. *HEBOMOIA ROEPSTORFII* Wood-Mason. Several.
6. *IXIAS ANDAMANA* Moore. Several.
7. *HUPHINA NAMA* Moore. Two or three.

Unfortunately Mr. Wimberley does not say if it is the Andamans race (*coruscans*) of *Arhopala centaurus*, or one of the other local forms, that he obtained.

Besides the species in Mr. Wimberley's list the writer observed two others on Barren Island. One of these was the common "Wandering Snowflake" (*Leptosia xiphia*) which was seen in a gully on the east side of the island on the outer aspect of the outer cone; in the same gully the wings of a bird-eaten example of a very bright *Lycaenid* were picked up. From this it will be seen that our knowledge of Barren Island butterflies is capable of further extension. The same remark applies with perhaps even force to the list of Narcondam butterflies which follows:—

*List of Butterflies seen on Narcondam.*

(Of the species marked (!) specimens have been examined and named by Mr. L. de Nicéville.)

1. *CYNTHIA EROTA* Fabr. !

Several of both sexes caught. This is the commonest butterfly on Narcondam, the male being much more usual than the female though both are "abundant." Mr. Wimberley and the Revd. Mr. Latham-Browne have informed me that though not rare, the species is not "abundant" in South Andaman and that there it frequents damp hollows. In Narcondam it is plentiful everywhere from sea-level up to 800—850 feet elevation.

DISTRIB. N. E. India; Burma; Andamans.

2. *PARTHENOS GAMBRISIUS* Fabr. !

DISTRIB. Eastern Bengal; Indo-China; Andamans; Malay Peninsula.

3. *LAMPIDES ELPIS* Godart. !

One male.

DISTRIB. Himalaya (Sikkim); India; Burma; Andamans; Malaya.

4. *CATOCHEYSOPS CNEJUS* Fabr. !

One female.

DISTRIB. India; China; Indo-China; Malaya; Andamans and Nicobars; Australia; Polynesia.

## 5. LEPTOSIA XIPHIA Fabr.

One specimen caught on high ground near the north end of the island. Not previously found in the Andamans, though a distinct form (VAR. *nicobarica* Doherty) occurs in the Nicobars.

DISTRIB. India; Indo-China; Malaya.

## 6. HUPHINA LICHINOSA Moore!

One female; after *Cynthia erota* the commonest butterfly.

DISTRIB. India; Indo-China; Malaya; Andamans.

## 7. IXIAS ANDAMANA Moore.

Seen during our ascent of the peak at about 1,200 feet elevation; no example was obtained.

DISTRIB. Andamans.

By reviewing the distribution of the birds and butterflies (of which two groups, so far as these remarks go, anything precise is known) we may perhaps form some idea of the general relationship of the fauna of these two islands to that of the nearest adjacent lands. For it is extremely probable that, though neither group is completely detailed in its list, these lists nevertheless are representative. And it is equally probable that all the groups of air-breathing creatures will, when thoroughly known, be found to owe their presence here to the agencies that are accountable for the presence of the species enumerated.

The two islands, though spoken of ordinarily as members of the Andaman group, are only to be admitted as such with a very considerable qualification, since in reality they belong to quite a different physio-graphical system from that to which the Andamans proper are to be referred.

The Andamans themselves are, as in well-known, undoubtedly a continuation of the chain of tertiary sandstone hills known as the Yomah of Arracan, the connecting links being Diamond Island off the south coast of Arracan, Preparis Island and the Coco Group, the same system of peaks reappearing with certain limitations and modifications\* in some

\* For example, at the southern end of Great Andaman there are to be found, besides the sandstone about Port Blair which is exactly like that of the Coco Group and of Diamond Island, a different kind of sandstone rock in the "Archipelago" to the north-east of Port Blair and a coralline limestone in the "Sentinels" to the south-west; whether the "Archipelago" sandstone recurs in the Nicobars the writer is unable to say, the "Sentinel" limestone undoubtedly does, *e. g.*, in Batti Malv.

at least of the Nicobar Islands. Beyond the Nicobar group this system is continued southwards, not as is commonly said, (and perhaps generally supposed), into Sumatra, but into the Nias, a chain of islands lying along the west coast of Sumatra.

The two volcanic islands under discussion—as well as a third peak, Flat Rock, which reaches the surface but no more at a point some 50 miles south of Barren Island—are separated from the Andaman chain proper by a strip of sea 90 miles wide and over 1,000 fathoms in depth. In all probability therefore we see in these islands a northward continuation of the chain of volcanoes that stretches upwards from Flores and Sumbawa through the whole length of Java and of Sumatra to Barren Island and Narcondam and perhaps even beyond them to the extinct volcanic peaks of Popah in Upper Burma and of Han-Shuen-Shan in Western Yunnan. But even if this be true there is little doubt that both Barren Island and Narcondam conform essentially to the class of "Oceanic" islands and never have possessed any previous land-connection with neighbouring islands either to the south or to the west, or with continental Asia to the North-east. The present physical conditions in Narcondam appear moreover to be very ancient; there is no trace of a crater at the top of its peak\* which rises 2,330 feet above the level of the Andaman Sea, and the whole island is clad with a dense jungle much richer in species than the forest on Barren Island is. But though the present biological features of Barren Island are of much more modern aspect, is it not necessary to consider that island as really less ancient than Narcondam. The topography of its outer cone, combined with the historical fact of recent activity on the part of the volcano, points to the possibility of some catastrophe similar to that which devastated Krakatau having once happened in Barren Island. And if this has been the case it would follow that the island must have required, even if previously covered with vegetation, to be stocked *de novo* with vegetable and animal life. Still, granting that the present fauna and flora of Barren Island are of more recent introduction than those of Narcondam, the fact remains that we must look upon every species present, even in the island with the older biological features, as an immigrant one.

Dealing first with the birds since these may include both voluntary and involuntary immigrants, we find that of the eighteen species enumerated, the Sea-Eagle, all the sea- and shore-fowl, the three Fruit-Pigeons and the large Corby, making altogether ten species, or 55 per

\* The appearance of the hill indicates however that there never has been a crater.

cent. of the list, are probably deliberate visitants. And though the Sea-Eagle has become a permanent resident and breeds on the spot, perhaps most of the others are still seasonal visitants and nothing more. This is certainly the case with the Fruit-Pigeons, two of which, *Carpophaga bicolor* and *Caloenas nicobarica* come annually from the Nicobars or from Malaya; the third, *Carpophaga aenea*, may come from Malaya or from Indo-China. Equally is this the case with Pond-Heron, which is a visitant from India, and it may be the case with the Sand-Plover and the Sand-Piper which are, in all probability, visitants from the north, and with the Snowy-Tern which is probably a visitant from the south. Perhaps the Blue Reef-Heron, though probably at first a deliberate immigrant, is now, like the Sea-Eagle, a permanent resident.

The Rock-Swiftlet and the Small King-fisher may either have come deliberately or may have been driven by stress of weather to the islands. The former is now certainly, the latter is probably, a permanent resident. The Swiftlet, if driven here involuntarily, must have been an immigrant under the influence of the south-west monsoon, the King-fisher may have reached the island under the influence of either the south-west or the north-east monsoon.

The Water-Hen may also have been driven here involuntarily, but is quite as likely to be a deliberate, though an inadvertent, immigrant. In either case it has probably come from the Andamans, whence also the large Corby has certainly come; the latter has probably, however, not come deliberately but has been driven by stress of weather.

The Paroquet and the Sunbird, the Koel and the Bulbul are probably all involuntary immigrants, the two former under the influence of the south-west, the two latter under the influence of either monsoon.

The most interesting bird of the list is the Narcondam Hornbill, not merely because it is endemic in that island,—pointing to its arrival there being an event of very considerable antiquity since it has had time to develop peculiarities that appear to entitle it to specific rank, and indicating moreover that the event is one which has recurred very infrequently, if at all—but because, there being no Hornbills in the Andaman group proper, whence birds driven by the south-west monsoon must have been derived, we are led to conclude that it owes its presence in the island to the influence of the usually weaker north-east monsoon.

The probabilities of the case are more compactly indicated in the subjoined table.



*Derivation of the Avifauna of Narcondam and Barren Island.*

| SPECIES INTRODUCED       | POSSIBLY |            | CERTAINLY. |            | PROBABLY. |            |
|--------------------------|----------|------------|------------|------------|-----------|------------|
|                          | Volunt.  | In-volunt. | Volunt.    | In-volunt. | Volunt.   | In-volunt. |
| From India or Indo-China | 7        | .....      | 4          | .....      | 5         | .....      |
| „ Andamans or Malaya     | 9        | .....      | 5          | .....      | 7         | .....      |
| By N.-E. Monsoon ...     | .....    | 4          | .....      | 1          | .....     | 2          |
| „ S.-W. Monsoon ...      | .....    | 7          | .....      | 2          | .....     | 4          |
| Total ...                | .....    | .....      | .....      | .....      | 12        | 6          |

18

The butterflies must all of necessity be examples of involuntary immigration, and though not of necessity all immigrants under the influence of winds, have probably in most cases been driven thither by one or other of the monsoons.

Leaving out of account those of Barren Island, two of which have not been specifically identified while a third has not had the particular local race determined, and considering only those of Narcondam, we see that one—*Leptosia xiphia*—has of necessity come from the north-east, and one *Ixias andamana*—has of necessity come from the south-west; all the others may have arrived under the influence of either monsoon.

Meagre as our knowledge of the Fauna of these islands is, we seem justified in concluding that the predominance of an Andamans element in it is altogether due to the fact that they are nearer the Andaman Group, from the direction of which a strong monsoon blows for the greater part of each year. At the same time it is clear that the opposite monsoon, though blowing with less force and over a wider sea, is not altogether inactive, but on the contrary must be held accountable for the introduction of certain species which, though they have reached these islands from Indo-China, have not yet succeeded in passing beyond them to the Andaman Group proper. The precise extent of either influence it would however be premature, in the present state of our knowledge, to attempt to assess.

4. *Further materials for a Malayan flora.*—By DR. G. KING, F. R. S.  
The paper will be published in the Journal, Part II.

5. *The Calcutta (Chatanati) Factory, first week of its History.*—By  
THE REV. H. B. HYDE, M. A.

Job Charnock and his party actually began their third and final

occupation of the village of Chatanati on the 24th of August, 1690. This is the true foundation day of the City of Calcutta. There exists at the India Office a series of eleven volumes, extending to 1706 the first of which is entitled "*Diary and Consultation Book for affairs of the Rt. Hon'ble English, East India Company, kept by the Rt. Worshipful the Agent and Council beginning 16th July, 1690.*" From this the extracts following are taken. They disclose the state of things with which the Agent and Council had to contend during their first week of settlement.

It will be remembered that after a couple of months occupation of the village in the cold weather of 1686 and 1687, during which the Nawab's Commissioners gave him promises of recognition and support which their master refused to ratify, Charnock attacked the Thana forts, Higili and Balasore. About November of 1687, after some 9 months of this disastrous warfare, Charnock, a second time, attempted a settlement at Chatanati. On this occasion he remained nearly a year and erected some factory buildings. The Company's prospects in Bengal are not wholly unpromising when in September Captain William Heath, the Company's Naval Commander-in-Chief arrived and insisted in carrying off in his ship the whole of the officials of the factory. After a stay at Madras Charnock and the Bengal Council returned on the *Princess* and finally established the Chatanati factory.

The *Diary* above-mentioned records:—"1690, August 23rd. On board the *Maddapollam*." [The party had quitted the *Princess*, perhaps at Balasore, and had embarked on a *Ketch* to ascend the Hugly River.] "Ordered Mr. William Skinner Pylott to leave the *Maddras* Friggat and go on board the *Maddapollam* to help her go to Chutanuttee."

They ascended the River safely as far as Sankral, a village on the west bank of the river just below the present Botanic Gardens, and within sight of the Thana Fort which stood on the site, it is believed, of Dr. King's house and was then held by the Nawab's Government. The *Diary* continues:—

"August, 24th. This day at Sankraul ordered Captain Brooke to come up with his vessel to Chutanuttee where we arrived about noon; but found the place in a deplorable condition, nothing being left for our present accommodation and the rain falling day and night. We are forced to betake ourselves to boats, which considering the season of the year, is very unhealthy. *Mellick Burcoordar* and the country people at our leaving this place burning and carrying away what they could. On our arrival here the Governor of Tanna sent his servant with a compliment."

This *Mullick* had formerly been Governor of Hugly and in January 11th, 1687 had acted as one of the Nawab Shasteh Khan's three Mun-

subdars or Commissioners to treat with Charnock for the establishment of the new factory. The articles were concluded but the Nawab did not confirm them and it was believed the whole negotiation were merely a ruse to secure to the Nawab time for his military preparations against the English. In November, 1687, he was again employed during the second settlement for a similar purpose, this time as sole Commissioner, and, though Captain Heath in his headstrong manner refused to listen to him, professing to believe that the recent death of Mullick's brother in war with the English had incurably prejudiced him against the Company's interests, he was apparently really desirous of adjusting peace. Heath on the 8th of November embarked Charnock and all his Council and subordinates on board his vessels and so abandoned the Chatanati factory buildings to be pillaged by the natives.

Mr. Henry Stanley and Mr. Mackrith had been sent on as Charnock's representatives to occupy Hugly. They arrived there about a fortnight before the latter reached Chatanati. Charnock anticipating that the commonest conveniences of life would be unobtainable on his arrival, wrote to Stanley to ask for supplies to which request Sir Henry Yule preserves a portion of a reply [H. D. ii, 283].

"The necessaries your worship, &c., gave us a note of are such of them as are ready to be had, herewith sent, *viz.*

1 pr. of *Gurras*, 10 as. per pces [thought to be a sort of coarse cotton cloth, *gárhá*].

3 large Dishes of our own stores from Madrass.

2 dozen of Trencher plates belonging to Mr. Croke, such as he sold for 2 $\frac{3}{4}$  rupees per *corge* [*i. e.*, per score.]

The rest shall follow".....

On *Thursday, the 28th of August*, the first consultation of the Bengal Council was held at the newly re-established factory, it is worth quoting in full from the *Chatanati Diary* :—

"At a consultation—Present.

The Rt. Worshipful Agent Charnock.

Mr. Francis Ellis.

Mr. Jere[miah] Peachie.

Resolved that a letter be sent to Mr. Stanley, &c., to come from Hugly and bring with them what Englishmen are there that the warr with the French may be proclaimed and also that Commissions be given to all command[ers] of ships in order to the prosecution of the same.

In consideration that all the former buildings here are destroyed, it is resolved that such plans be built as necessity requires and as cheap as possible, *viz.*

1. A warehouse.

2. A dining room.
3. The Secretary's Office to be repaired.
4. A room to sort cloth in.
5. A cook-room with its conveniences.
6. An apartment for the Company's servants.
7. The Agent's and Mr. Peachie's house to be repaired which were part standing and a house to be built for Mr. Ellis, the former being totally demolished.
8. The Guard House.

These to be done with mudd walls and thatched till we can get ground whereon to build a factory.

Resolved that 2000 maunds of wheat and 200 maunds horse grain be bought at Manloa [Mandoa?] that being the cheapest place and here to be provided 6000 maunds rice, 200 maunds butter and 200 maunds of oyle (and 200 maunds oyle) [*sic*] to be sent to Fort George.

JOB CHARNOCK.

FRANCIS ELLIS.

JEREMIAH PEACHIE.

J. HILL, *Secretary.*

A few days later under date of *August 31st*, the Agent and Council record the following memorandum—

“Received advices from Mr. Meyerell at Ballasore that Captain Haddock departed this life the 23rd instant as also that a Portuguese vessel was arrived bringing news of the French Fleets coming to the bay and that the Dutch Commissary is coming with 4 shippes from Negapatam. Governor Pitt with 5 ships from Maddrass also Captain Heath from said place and that 3 Danes Shippes from Trincumbar are ready to joyne with them.

“*September 5th.* All the English according to order being arrived from Hughly, war was proclaimed against the French.”

These hostilities against the French were the result of a declaration of war against that nation by King William dated 7th May, 1689, which by His Majesty's accession on the following 9th September, to the Treaty called “The grand alliance” implied a general attack on French trading interests throughout the world. The Dutch and Danish vessels mentioned in the foregoing memorandum were coming to support the British in their attack upon the French Indiamen.

So began a desultory naval warfare which lasted in Indian waters for several years.

The Chatanati Diary thus exhibits to us Charnock and his Council of 2, his few factors and his 30 soldiers passing the first week of what proved to be their final and successful attempt to found the factory

which has become the City of Calcutta, under most deplorable circumstances.

They could not live ashore because of the excessive rain and because of their former mud-built houses only three were even partly standing; therefore they made the best of it in sloops and country boats, in addition to this they expected to be engaged in immediate war with the French.

It would seem that many months passed before they materially bettered their condition for from two extracts from the Fort St. George letters preserved by Sir Henry Yule, (which he says convey the whole information he had been able to collect respecting the first year or two of this establishment of Charnock's.) We learn that so late as May of the next year, 1691.

"They (in Bengal) could dispose of little [merchandize] nor have they safe goodowns to secure them from damage, and the truth is they live in a wild unsettled condition at Chuttinutee, neither fortified houses nor goodowns, only tents, hutts and boats, with the strange charge of near 100 soldiers, guardship, &c."

This "guardship" suggests that they had not succeeded in erecting the projected guardhouse, and was apparently a "great portuguez frigott" purchased by Charnock for the purpose. [Hedge's Diary ii, pp. 87 and 88]. It is probable that the Mahomedan Government wholly prohibited the erection of anything like a defensible building by the English in the Chatanati village.

6. *On the Flora of the Black Mountain.*—By SURGEON CAPTAIN WESTHROP-WHITE, I. M. S., *communicated by the Natural History Secretary.*

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

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## LIBRARY.

The following additions have been made to the Library since the meeting held in March last.

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*presented by the respective Societies and Editors.*

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- . Royal Geographical Society,—Proceedings, Vols. XIII, No. 12; XIV, 1-2.
- . Royal Microscopical Society,—Journal, Part 6, 1891.
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- . The Athenæum,—Nos. 3358-60.
- Melbourne. Royal Society of Victoria,—Proceedings, New Series, Vol. III.
- . ———. Transactions, Vol. II, Part I.
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Nos. 25 and 26.

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———. The Journal of Botany,—Vol. XXIX, No. 348; XXX, 349.

———. The Messenger of Mathematics,—Vol. XXI, Nos. 8 and 9.

———. The Quarterly Journal of Microscopical Science,—Vol.  
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- . Annales de Chimie et de Physique,—Tome XXIV (6<sup>me</sup> Série), Décembre 1891; XXV, Janvier et Février, 1892.
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- . Revue Scientifique,—Tome XLIX, Nos. 8-12.
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- . Vols. XXXIX and XL. The Sacred Books of China, the texts of Tàoism, translated by James Legge. Parts I and II. 8vo. Oxford, 1891.
- REHATSEK, E. The Rauzat-us-Safa, Vol. II, Part I. Edited by F. F. Arbuthnot, M. R. A. S. (Oriental Translation Fund, New Series, I) 8vo. London, 1892.
- Report on the Scientific Results of the Voyage of H. M. S. "Challenger" during the years 1873-76. Deep-Sea Deposit. 4to. London, 1891.
- ROSCOB, SIR H. E. AND SCHORLEMMER, C. A Treatise on Chemistry. Organic Chemistry, Vol. III, Part 6. 8vo. London, 1892.

PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR MAY, 1892.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th May, 1892, at 9-15 P. M.

C. H. Tawney, Esq., C. I. E., in the Chair.

The following members were present:—

Nawab Abdul Latif Khan Bahadur, G. A. Grierson, Esq., T. H. Holland, Esq., Rev. H. B. Hyde, Kumár Rameswár Maliáh, L. de Nicéville, Esq., J. D. Nimmo, Esq., H. M. Rustomjee, Esq., E. Thurston, Esq., Dr. J. H. Tull Walsh, C. R. Wilson, Esq.

Visitor:—H. W. Sparkes, Esq.

The minutes of the last meeting were read and confirmed.

Sixteen presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were balloted for and elected Ordinary Members:—

Hon'ble Sir C. A. Elliott, K. C. S. I., C. I. E.

G. W. Forrest, Esq., B. A.

Lieutenant W. A. Harrison, R. E.

Colonel T. H. Haldich, R. E.

The SECRETARY announced that Raja Oday Pertab Sing, Raja of Bhinga, had compounded his subscription as a non-resident member by the payment in a single sum of Rs. 300.

The following papers were read :—

1. *Rajah Káns*,—By H. REVERIDGE, ESQ., C. S.

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

2. *An account of an old inscription found at Burtrá in the district of Márwár*,—By MUNSHI DEBIPERSHAD OF JODHPORE. Communicated by the Philological Secretary.

(Abstract).

Burtrá is a village situated nearly 20 miles east of Jhálor in Márwár. Here, under a tree, a stone was found about 1 foot 6 inches square, bearing an inscription in the Nágari character. The villagers, believing that the stone marked the position of some hidden treasure, for a long time preserved it with great care, till they learnt the purport of the writing. From this it appears that the stone belonged to a well which was built by Rúpádeví, a daughter of Chácha, the Rájá of Jhálor, and was consecrated by her, in the reign of her brother Sámyanta Sińha, on Monday, the 7th Jyaisřha, Sańvat 1340. It also appears from the inscription that Rúpádeví was married to Tejas Sińha, and had a son called Kshetra Sińha.

The stone is evidently a monument of the Chauhán Rájás of Jhálor, who belonged to the Sońágira clan. It gives the following names :—

- (1). Samara Sińha.
- (2). Udaya Sińha.
- (3). His son Chácha.
- (4). His son Sámyanta Sińha.

The founder of this dynasty, Ketu, gained possession of the fort of Jhálor in Sańvat 1218. The name of the hill on which the fort was built was Sońágiri, whence the family of Ketu were called Sońágiras.

The son of Ketu was Samara Sińha, from whom Udaya Sińha was descended. According to Firishta, Shams-ud-Dín Altamsh attacked Udaya Sińha in Sańvat 1268 for not paying tribute, and reduced him to obedience.

Chácha, the son of Udaya Sińha, in Sańvat 1319 built a temple to the goddess Chámuńdá, which was situated in a pleasant valley in Jaswant-pura, a district of Márwár. Sámyanta was Chácha's son. The inscription belongs to his reign.

Rájá Kanardeo, the son of Sámyanta Sińha, fought bravely for many years with Alá-ud-dín Khiljí, who attacked him in the fort of Jhálor, but in Sańvat 1368 the fort was taken, and Kanardeo was killed with his son Virámdeo. Maldeo, the brother of Kanardeo, who escaped, submitted to Alá-ud-dín, and was made Killádár of Chittor, as we learn from the *Ain-i-Akbarí*.

There are still to be found in Márwár and Mewár many Sonágira Chauháns who are descended from Maldeo.

3. *Noviciæ Indicæ, V. An undescribed Mezoneuron from the Andaman Group,—By D. PRAIN, Esq., M. B.*

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

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### LIBRARY.

The following additions have been made to the Library since the meeting held in April last.

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*presented by the respective Societies and Editors.*

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- . ————. Sitzungsberichte, Mathematisch—physikalischen classe, Heften I und II, 1891.
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**PROCEEDINGS**  
OF THE  
**ASIATIC SOCIETY OF BENGAL,**  
FOR JUNE & JULY, 1892.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 6th July, 1892, at 9-15 P. M.

A. PEDLER, Esq., F. C. S., Vice-President, in the chair.

The following members were present :—

Dr. A. Alcock, H. K. W. Arnold, Esq., Bábu P. N. Bose, Bábu Man Mohan Chakravartí, G. W. Forrest, Esq., Bábu Bhupendra Sri Ghosha, Bábu Pratápa Chandra Ghosha, G. A. Grierson, Esq., A. Hogg, Esq., The Rev. H. B. Hyde, Bábu Asutosh Mukhopádhyáya, Bábu Nilmani Mukerjea, Pandit Mahámahopádhyáya Maheschandra Nyáyaratna, L. de Nicéville, Esq., R. D. Oldham, Esq., Dr. D. Prain, Hon. Dr. Mahendralál Sarkar, Pandit Haraprasád Sástri, Dr. W. J. Simpson, Dr. J. H. Tull Walsh, Colonel J. Waterhouse, C. R. Wilson, Esq., J. Wood-Mason, Esq.

Visitor :—Bábu Mahendra Nath Roy.

The Council reported that no meeting was held in May, as a quorum of members was not present.

Seventy presentations were announced, details of which are given in the Library List appended.

The following gentlemen are candidates for election at the next meeting :—

Pandit Behary Lall Chaubo, proposed by Dr. A. F. R. Hoernle, seconded by G. A. Grierson, Esq.

Lieutenant Donald Baker, proposed by C. R. Wilson, Esq., seconded by Colonel J. Waterhouse.

H. H. The Maharaja Pratap Narain Singh of Ajodhya, proposed by C. R. Wilson, Esq., seconded by C. H. Tawney, Esq.

Samuel Charles Hill, Esq., Bengal Educational Service, proposed by J. Crawford, Esq., seconded by Colonel J. Waterhouse.

Bábu Asutosh Pramanick, Merchant, proposed by Bábu Pratápa-chandra Ghosha, seconded by Pandit Haraprasád Sástri.

The Rev. Henry Whitehead, M. A., Principal, Bishop's College, proposed by The Rev. H. B. Hyde, seconded by C. R. Wilson, Esq.

The following gentleman has expressed a wish to withdraw from the Society :—

Dr. Aghore Chunder Chatterjee.

The Secretary reported the death of the following member :—

A. V. Nursing Row, Esq., F. R. A. S.

The Chairman reported that The Hon. Sir C. A. Elliott, Lieutenant-Governor of Bengal, was willing to accept the office of President.

The Secretary read a circular from the Royal Society of New South Wales, enumerating prizes to be given for original researches on certain subjects connected with Australia.

The following papers were read :—

1. *Some new inscriptions of Bhuvaneśvar, District Puri*.—By BĀBU MAN MOHAN CHAKRAVARTI, M. A., B. L., *Subordinate Executive Service of Bengal*.

(Abstract).

This paper gave an account of several new stone inscriptions, found at Bhuvaneśvar, in the district of Puri, Bengal.

The inscriptions were 9 in number, *viz.* (A) one on the Paraśurám-eśvar temple, (B) one on the Vaitala Deul, (C) seven on the Bara Deul, or great tower of Bhuvaneśvar.

(A) The first named temple was lying in a delapidated condition. From its general shape, its scroll-work, its carvings of men, animals, birds and plants, it could not be put later than the tenth century. Its porch had three entrances. Immediately over the entrance from the south were four lines in early Kuṭiḷa characters, of which the purport appeared to be that by order of the lord of Śri-Kaliṅga, offerings were made by one Vedáchárya (probably a royal officer or *purohita*) to Páráseśvar Bhaṭṭaka, a Brahmin. Apparently Bhuvaneśvar, and probably Orissa, was then under the rule of Kaliṅga kings.

(B) On the outside of the north wall of the porch of the Vaitál Deul were four lines in Sanskrit character, the first two being the well-known couplet written by copyists of Sanskrit manuscripts at the end of

their copies, to the effect that the letters should be "equal in size, even-headed, thick, and with spaces between."

Besides these four lines there were several single letters, perhaps mason's letters, and at one place in Uriya character काश्रिपति गजपति or the lord of Kási, the lord of elephants."

(C) The Bara Deul inscriptions were discovered by Bábu M. M. Chakravarti on the inside of the projecting walls of the porch, four being on the south side, and three on the north. With the exception of the lowermost one on the north side, the inscriptions belonged to the reigns of three Orissan kings, Aniyañka Bhíma Deva, Anañga Bhíma Deva, and Narasiñha Deva.

The inscriptions recorded gifts to the temple, usually for the purpose of lighting lamps.

The first inscription on the south side belonged to Narasiñha Deva IV, and was dated, "Friday, the Śukla *ekádaśi* of the month Makar in the fourth *añka* of the flourishing reign of Anika Bhíma Deva." This, according to Bábu M. M. Chakravarti's calculations, was equivalent to Friday, 14th January, 1166 A. D., which would also agree with other inscriptions of Narasiñha Deva IV, discovered by Bábu M. M. Chakravarti. The second inscription on the north side was dated "Tuesday, the Kṛishṇa *pratipada* of the month Dhau, in Ś'akábda 1140," which was equivalent to Tuesday, 4th December, 1218 A. D.

In conclusion, the author of the paper invited the attention of scholars to the rich mine of antiquities that still remained to be explored in and round Bhuvaneśvar. These very inscriptions if carefully transcribed either by patient comparison on the spot, or from faithful ink impressions, would probably throw much light on the mediæval kings of Orissa. In spite of the researches of Stirling, Prinsep, Hunter and Rájendralála Mitra, the history of Orissa was very obscure. The *Mádalá Pánji* was still its main basis and the *Mádalá Pánji* was a very unsafe and confusing guide, being itself based on unsatisfactory, imperfectly recorded, and often contradictory traditions. The work should be deposed from the high pedestal which it now occupied, and placed in its proper rank, as a corroborative document only.

2. *Is Mailapur the ancient Manipur of the Mahabharata?*—By S. T. KRISHNAMACHARYA, Esq., *Attorney-at-law.* Communicated by THE PHILOLOGICAL SECRETARY.

3. *The Korkus.*—By W. H. P. DRIVER, Esq.

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

4. *A note on the Parganas of Murshidabad.*—By H. BEVERIDGE, Esq., C. S.

In Akbar's reign, Bengal Proper was divided into 19 Sarkárs

containing 682 estates or parganas. This arrangement was made about the year 1582, and is commonly ascribed to Rajah Todar Mal. Lists of the contents of the Sarkárs are given in the *Ain*, and Mr. Blochmann made much use of them when he was elucidating the old geography of Bengal. Unfortunately there are many errors in the MSS. of the *Ain*. Sometimes these can be corrected by referring to the lists in Tieffenthaler, but more effectual help is afforded by Grant's analysis in the Fifth Report, and by local knowledge. Grant's lists are those of Jaffar Khan's arrangement of 1722, but he also supplies the names of the old Sarkárs.

The object of this note is to compare the lists in the *Ain* with those in the Statistical Account of Bengal. I only do this for Moorshidabad, and I would suggest that similar comparisons be instituted for other districts. In this way the lists might appear in a correct form in the forthcoming translation of the second volume of the *Ain*.

The present district of Murshidabad is mainly comprised in Todar Mal's Sarkár of Tándah, *alias* Audambar, *alias* Audner. This Sarkár extended southwards from Agmahal, *i. e.*, Rajmahal and included parganas both in the Rañh and the Bagri, that is, on both sides of the Bhlágirathi, as far south as Chunakhali, or a little to the south of the town of Murshidabad. The rest of the Rañh was included in Sarkár Sharífabad. The remainder of the district, *i. e.*, the portion lying south and east of Chunakhali seems to have been included in Sarkárs Mahmudabad and Bárbakábád. The pargana of Plassey in the extreme south and which perhaps now wholly belongs to Nadia was included in Sarkár Sátgáon according to Grant. I cannot find it in the *Ain*, unless it is the Belkasi which is there entered as included in Mahmudabad. Belkasi is not very like Plassey, but in Tieffenthaler the name appears as Belessi.

On comparing the lists in the *Ain*, pp. 394–408 with that in the Statistical Account of Bengal, IX, 232–36, I find the following correspondencies :—

I. SARKÁR TANDAH, *Ain*, p. 394.

- |                  |                          |
|------------------|--------------------------|
| 1. Ashraf Bhág.  | 11. Kásipur.             |
| 2. Buitáli.      | 12. Kátgárh.             |
| 3. Chang Nadiya. | 13. Kumar Pratáp.        |
| 4. Chunakháli.   | 14. Mangalpur.           |
| 5. Daudsháhi.    | 15. Nasíbpur.            |
| 6. Dhawa.        | 16. Nawa Nagar.          |
| 7. Diwánapur.    | 17. Samas <u>K</u> hani. |
| 8. Gankar.       | 18. Swarupsingh.         |

- |                |                  |
|----------------|------------------|
| 9. Ibrahimpur. | 19. Sultunuzial. |
| 10. Kankjol.   |                  |

II. SARKÁR SHARÍFÁBAD, *Áin*, p. 406.

- |                      |                   |
|----------------------|-------------------|
| 1. Akbarshahi.       | 6. Fathsingh.     |
| 2. Bárbaksingh.      | 7. Husainuzial.   |
| 3. Bazar Ibrahimpur. | 8. Khargaon.      |
| 4. Bhátsála.         | 9. Mahalandi.     |
| 5. Bihrol.           | 10. Manaharsháhi. |

III. SARKÁR MAHMUDÁBÁD, *Áin*, p. 397.

- |                      |               |
|----------------------|---------------|
| 1. Fathipur Nausika. | 3. Kutubpur.  |
| 2. Kulberia.         | 4. Pátkabári. |

IV. SARKÁR BÁRBAKÁBÁD, *Áin*, p. 403.

- |               |                |
|---------------|----------------|
| 1. Bárbakpur. | 3. Guzarhát.   |
| 2. Gowás.     | 4. Laskharpur. |

I do not think that these lists are at all complete, nor will it be found that the spellings of the *Áin* and of the Statistical Account exactly agree. Indeed one of my objects is to show that they do not, and that the text of the *Áin* wants revision. Thus Chunakháli is disguised in the *Áin* under the name of Jonaghattí, and the old and extensive parganas of Gowás and Gankar appear there as Kahas and Gankarah. Some well-known parganas do not appear at all in the *Áin*. For example, Ghiásábád, which Grant places, no doubt correctly, in Sharifabad, is not mentioned in the *Áin*. Under Sarkár Mahmudabad, we find Babhangola and Barmapur. Can these be Bhagwángola and Berhampur?

The name Sharifabad for the Sarkár comprising the Raṛh is interesting for it suggests the family of Husain Shah, the famous king of Gaur. An ancestor of his is said to have been Sharif of Mecca, and his father's name was Ashraf. Perhaps the latter gave his name to the pargana of Ashraf Bhág. In the *Áin* this pargana appears under the name of Darsan Ashrafnahal, and in Tieffenthaler as Darsan Ashrafbhál.

I ought to mention that I have been assisted in making my lists by a valuable map in Col. Gastrell's report on Murshidabad, in which the principal parganas are shown.

If we had similar maps of other districts, or even with the aid of the pargana maps in the Survey Office, a map might be made of the 19 Sarkárs which would show the divisions of Bengal in 1582. Another might be made showing the Sarkárs of Orissa and Assam. A third map might be made showing Jaffar Khan's 13 Chaklas corresponding to the 34 Sarkárs of Todar Mal. No doubt the labour would be con-

siderable, and it would be necessary to make many local inquiries in order that the names of the parganas might be correctly given. But they would be valuable historical documents. Perhaps Mr. Beames, who has already done something for the geography of the Akbarnáma, might undertake the task.

5. *Note on the Topography of the river in the 16th century from the Húglí to the Sea as represented in the Da Asia of De Barros*.—By C. R. WILSON, Esq., M. A.

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

6. *Note on three North Indian Butterflies*—*Euthalia nara*, *E. sahadeva*, and *E. anyte*. By LIONEL DE NICEVILLE, F. E. S., C. M. Z. S.

*Euthalia nara*, Moore, *E. sahadeva*, Moore, and *E. anyte*, Hewitson, have always proved to be puzzling species both to collectors and cabinet naturalists. *E. nara* was described from a female, *E. sahadeva* from a male, and *E. anyte* also from a male. All three species occur in Sikkim. That region has been so thoroughly well worked entomologically of recent years that it is inconceivable that the opposite sexes of three such large butterflies should be still uncaptured, and, on looking over the material at my disposal in consequence of the receipt of a letter from Mr. H. J. Elwes, suggesting that *E. sahadeva* is the male and *E. nara*\* the female of one species, I find that I can discriminate the opposite sexes of all the three species with ease. The short diagnoses given below will, I think, enable any one having specimens of these species to distinguish between them without difficulty. In "The Butterflies of India" I described as the supposed male of *E. nara*, a specimen which now proves to be the true female of *E. nara*; what I, at the time of writing, took to be *E. nara* female turns out to be the true female of *E. sahadeva*. It is strange that Mr. Elwes should have omitted *E. anyte* from his "Catalogue of the Lepidoptera of Sikkim," as it has been recorded from thence more than once. In the Proc. Zool. Soc. Lond., 1891, p. 279, Mr. Elwes describes the supposed female of *E. anyte*.\* I am unable to follow his description, nor can I agree with his conclusions, as I contend that *E. nara* and *E. anyte* are female and male respectively of one and the same species, which stands under the former name. *Euthalia iva*, Moore, described as a male from Darjeeling, is probably a female, and has still to be re-discovered.

\* Since this article was put into type I have heard again from Mr. Elwes, and he tells me that the specimens which he took to be the females of *E. nara* are really the opposite sex of *E. sahadeva*.



## 1. EUTHALIA NARA, Moore.

*Adolias nara*, Moore, Trans. Ent. Soc. Lond., new series, vol. v, p. 78, n. 35, pl. viii, fig. 1, *female* (1859); id., Butler, Proc. Zool. Soc. Lond., 1868, p. 602, n. 17; *Euthalia nara*, de Nicéville, Butt. of India, vol. ii, p. 197, n. 493 (1886); id., Elwes, Trans. Ent. Soc. Lond., 1888, p. 357, n. 175; *Adolias anyte*, Hewitson, Ex. Butt., vol. iii, *Adolias* pl. ii, fig. 5, *male* (1862); id., Butler, Proc. Zool. Soc. Lond., 1868, p. 603, n. 23; *Euthalia anyte*, de Nicéville, Butt. of India, vol. ii, p. 198, n. 494 (1886); id., Elwes, Proc. Zool. Soc. Lond., 1891, n. 279.

HABITAT: *E. nara*:—Unknown (*Moore and Butler*); Sikkim; N. Khasi Hills (*de Nicéville*); Sikkim; Buxa, Bhutan, July and August; Khasia, 4,500 ft., September (*Elwes*); *E. anyte*:—East India (*Hewitson and Butler*); Sikkim; Nepal (*de Nicéville*); Sikkim; Bhutan; Naga Hills (*Elwes*).

The female of *E. nara* may be known from that sex of *E. sahadeva* by its smaller size; by its more golden (less greenish) bronzy colour on the upperside; by the posterior spot of the discal white band in the first median interspace of the forewing being very narrow and therefore appearing to be more elongated; and on the underside of both wings being more greenish (less golden) bronzy; and in the hindwing "in the submarginal small black spots" present in the true female of *E. sahadeva* "being replaced by a diffused line darker than the ground-colour," this line being characteristic of the male of *E. nara* (*E. anyte*), while both sexes of *E. sahadeva* have a series of rounded black dots on the underside of the hindwing, one in each interspace except the submedian, which has two; these dots, moreover, being further removed from the outer margin than the diffused line is in both sexes of *E. nara*.

In Colonel A. M. Lang's collection a female of this species from Sikkim is correctly named.

## 2. EUTHALIA SAHADEVA, Moore.

*Adolias sahadeva*, Moore, Trans. Ent. Soc. Lond., new series, vol. v, p. 80, n. 39, pl. viii, fig. 3, *male* (1859); id., Butler, Proc. Zool. Soc. Lond., 1868, p. 601, n. 11; *Euthalia sahadeva*, de Nicéville, Butt. of India, vol. ii, p. 199, n. 495 (1886); id., Elwes, Trans. Ent. Soc. Lond., 1888, p. 357, n. 176; *E. nara*, var., id., Proc. Zool. Soc. Lond., 1891, p. 278.

HABITAT: Unknown (*Moore*); Nepal (*Butler*); Nepal; Sikkim; Assam (*de Nicéville*); Sikkim (*Elwes*); *E. nara*, var.:—Naga Hills (*Elwes*).

FEMALE (hitherto underscribed). EXPANSE: 3·9 to 4·1 inches. Differs from the female of *E. nara*, Moore, in its larger size. UPSERSIDE, *forewing* with the posterior spot of the discal band, broad, twice as broad as in *E. nara*. UNDERSIDE, *hindwing* with a series of small round submarginal black spots, one in each interspace except the submedian, which has

two. In the female of *E. nara* these spots are replaced by a continuous diffused line of a darker shade of colour than the ground, which, moreover, is placed considerably nearer the outer margin than is the series of black spots in *E. sahadeva*. The shape of the hindwing in both sexes is also characteristic, in *E. sahadeva* it is much more square, therefore broader, and less regularly rounded than in *E. nara*.

*E. confucius*, Westwood, was described from China from a female specimen. Under this name are two specimens of what I consider to be the true female of *E. sahadeva* in Colonel A. M. Lang's collection, probably named by Mr. Moore; the latter probably also recording this species from Darjeeling in Proc. Zool. Soc. Lond., 1865, p. 767, under the name of *E. confucius*. The female is figured by Messrs. H. Grose Smith and W. F. Kirby in "Rhopalocera Exotica," pt. xvii, pl. *Euthalia* iii, figs. 1, 2 (1891), and differs from the same sex of *E. sahadeva* in having the discal band of the forewing much wider, and the spots on both wings yellow ("stramineous"), instead of white as in *E. sahadeva*. The male is said to be very similar to the female. It is an abundantly distinct species.

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### LIBRARY.

The following additions have been made to the Library since the meeting held in May last.

### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

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- . ————. Tijdschrift voor Indische Taal-, Land-en Volkenkunde, Deel XXXV, Aflevering 2.
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 ———. Royal Statistical Society,—Journal, Vol. LV, Part 1.  
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- Mexico. La Sociedad Científica “Antonio Alzate,”—Memorias y Revista, Tome V, Nos. 5 y 6.
- Moscow. La Société Impériale des Naturalistes de Moscou,—Bulletin, No. 4, 1891.

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**PROCEEDINGS**  
**OF THE**  
**ASIATIC SOCIETY OF BENGAL,**  
**FOR AUGUST, 1892.**

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd August, 1892, at 9-15 P. M.

**HON'BLE SIR C. A. ELLIOTT, K. C. S. I., C. I. E.,**  
President, in the Chair.

The following members were present :—

Nawab Abdul Latif Khan Bahadur, H. K. W. Arnold, Esq., Bábu Gaurdás Bysack, G. W. Forrest, Esq., Babu Pratápa Chandra Ghosha, G. A. Grierson, Esq., F. G. Hickson, Esq., T. H. Holland, Esq., The Rev. H. B. Hyde, C. Little, Esq., R. D. Mehta, Esq., J. D. Nimmo, Esq., A. Pedler, Esq., Dr. D. Prain, Hon. H. H. Risley, Pandit Haraprasád Shástri, Dr. W. J. Simpson, C. R. Wilson, Esq.

Visitors :—The Rev. K. E. Barrow, A. C. Elliott, Esq., C. J. L'Estrange, Esq., C. W. Odling, Esq.

The minutes of the last meeting were read and confirmed.

Forty-three presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were balloted for and elected Ordinary Members :—

Pandit Behary Lall Chaube.  
Lieutenant Donald Baker.  
H. H. The Maharaja Pratap Narain Singh.  
Samuel Charles Hill, Esq.  
Bábu Asutosh Paramanick.  
The Rev. Henry Whitehead.

The following gentlemen are candidates for election at the next meeting :—

Bábu Narsingh Dutt, Howrah, proposed by G. A. Grierson, Esq., seconded by C. R. Wilson, Esq.

R. Greevan, Esq., C. S., proposed by C. H. Tawney. Esq., seconded by C. R. Wilson, Esq.

The following gentlemen have expressed a wish to withdraw from the Society :—

A. M. Markham, Esq., C. S.

The Rev. Walter A. Hamilton.

The Hon. H. H. Risley brought forward a motion to revive the Ethnological Committee and the appointment of an Ethnological Secretary who should be in charge of a new part of the Journal.

It was unanimously resolved that a third section dealing with Anthropology, Ethnography and Folklore be added to the Journal and that the Council be authorized to enter into negotiations with the Government of Bengal in order to obtain a grant in connection therewith.

Mr. C. R. Wilson read a short note on an old picture of the riverside in the north part of Calcutta in 1788.

*Note on an old Picture of the Riverside in the north part of Calcutta in 1788.*

This picture is one of a set of nine pictures of old Calcutta in the possession of the Asiatic Society of Bengal. There is also a very large copy of it at Belvedere. The date is 1788. It obviously represents a house, temple, and bathing ghats, in the northern part of Calcutta. There is the steeple of a church in the distance. The difficulty is to determine the precise spot. I have spent a good deal of time in the attempt to do this. Remembering that the present Strand was once covered with water I have walked up and down the northern part of it, and have examined all the buildings which lie to the east of the roadway. I have thus discovered the temple and all that remains of the buildings seen in the picture.

The most conspicuous object in the picture is a large three-storied house built by the waterside and behind it a smaller two-storied house. The three-storied building, was in 1788, the Thakur Bari of Babu Jugul Kisore Addy, and the two-storied building was his house of residence. Babu Jugul Kisore had bought the land from a Madrassee called Naina Pá and built the Thakur Bari upon it. At his death the property came to his son Nanda Lal Addy who only survived his father a few years. The

next owner of the property was Nanda's son Doyal Chand Addy, who was in his day a distinguished resident of Calcutta. He was a great rider and kept a large stud of horses. I find his name in October 1806 as one of the signatories of an address to Sir Henry Russel then Chief Justice of Bengal. Doyal Chand died in 1835. His son Babu Raj Ballub Addy is still living and is an old man of 72. It is to him and to Babu Gaurdás Bysack that I am indebted for my information about this old Calcutta family. The three-storied Thakur Bari is not now in existence. It is shown in Simms' Survey of Calcutta in 1849, but it has since been pulled down, and the site sold and covered with huts and sheds. The two-storied house is still standing in Dharmahatta Street at the corner of Darpa Naraian Tagore's Street. The house is much altered, but I have been all over it, and I am convinced that it is the same house as that shown in the picture.

The little temple is also still standing, but is almost hidden away from sight by a large shed belonging to Messrs. Ralli Bros. built close up beside it and behind it. It is a temple of Siva and belongs to a Biswas family.

The picture shows at least two ghats. I am a little uncertain as to their names. The one adjacent to the temple and immediately north of it was called the Rám Sítá Ghat; the other to the south of this, according to the maps of Wood and Upjohn, was called Hurreenant Dewan's Ghat in 1785-95, but from some valuable maps which have been kindly lent me by Babu Gaurdás Bysack it appears that in 1830 the Rám Sítá Ghat had disappeared and that the second ghat was called the Seebtolah Ghat. This name, however, is given by Wood and Upjohn to another ghat further north of this spot which seems also to have disappeared by 1830. There were therefore in 1788 three ghats near this place—the Seebtolah Ghat, the Ram Sita Ghat and Hurreenant Dewan's Ghat. The first two were subsequently done away with, and the name Seebtolah was transferred to the third ghat.

The spire in the distance belongs to the Armenian Church. The warehouses along the river side south of Jogul Kisore Addy's Thakur Bari have mostly disappeared, many of them having been pulled down to make room for the Mint.

The following papers were read :—

1. *Notes on the old plans of Forts and Towns of the East India Company preserved by the French at Pondicherry*,—By G. W. FORREST, Esq., B. A.

2. *Note on the date of Nur Qutb Alam's death*,—By H. BEVERIDGE, Esq., C. S.

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

3. *Note on the Indian and Malay Peninsula Butterflies comprised in the subgenus Stictoploea of the genus Euploea*.—By LIONEL DE NICÉVILLE, Esq., F. E. S., C. M. Z. S.

I recently received the following pathetic letter from the Rev. Walter A. Hamilton :—“ I am to-day sending you by parcel-post a box containing 500 specimens of *Euploea* from the Khasi Hills. Will you kindly sort and name them for me? I have had to give it up, having nearly worn my eyes out in trying to discriminate between the various described species, the differences between which appear to be minute.” The collection on examination consisted practically of two species, and as Mr. Hamilton was good enough to say I might keep any I required, I sorted them very carefully, and picked out specimens of all such as appeared to be in any way abnormal. I propose to deal in this Note with the *Stictoploeas*. In Part VII of Mr. Moore’s “*Lepidoptera Indica*” six species are given from Sikkim, Assam, and Burma. I give below a key to these species which graphically brings out the points on which Mr. Moore relies in separating them.

**Key to certain Indian species of the subgenus STICTOPLŒA.**

- A. Upperside, forewing with numerous spots on the disc in addition to the submarginal and marginal series.
  - a. Of large size; upperside, hindwing with complete submarginal and marginal series of spots.
    - E. (STICTOPLŒA) HOPEI, Assam.
  - b. Of small size; upperside, hindwing in the male (as described) with three submarginal spots only, (six marginal spots figured); female with additional marginal spots.
    - E. (STICTOPLŒA) PYGMŒA, Assam.
  - c. Of large size; upperside, hindwing with three or two submarginal spots.
    - E. (STICTOPLŒA) BINOTATA, Sikkim.
- B. Upperside, forewing with no spots on the disc, submarginal and marginal series of spots as in A.
  - a. Upperside, hindwing with complete submarginal and marginal series of spots.
    - E. (STICTOPLŒA) HARRISI, Burma.
  - b. Upperside, hindwing with three submarginal spots.
    - E. (STICTOPLŒA) CROWLEYI, Burma.
  - c. Upperside, hindwing immaculate.
    - E. (STICTOPLŒA) REGINA, Assam.

In the work above referred to Mr. Moore does not record *E. harrisi* from the Malay Peninsula, though he previously\* gave Malacca and Cochin China amongst other places as its habitat. Mr. Butler also in his original description of *S. binotata* records it from Borneo as well as

\* Proc Zool. Soc. Lond., 1883, p. 320, n. 4.

from India. Mr. Moore in his Monograph of the *Euploea* does not record it from Borneo, but describes from thence *S. tyrianthina*. There is something mysterious about the latter species. Having originally\* described it from Borneo and Sumatra, Mr. Moore, in Lep. Ind., p. 138, records it from Sumatra only. In the original description it is said to be similar to *S. harrisi* on the upperside of the forewing, i. e., richly glossed with blue. But in Lep. Ind. it is said to be "without the blue gloss." Again, in Captain Shopland's List of the Butterflies collected by him in Aracan, Burma, p. 4, *E. tyrianthina* is recorded. I am almost certain that there is no *Stictoploea* in any part of India that is not blue-glossed, and as Captain Shopland most probably named his specimens at the British Museum, and as none but blue-glossed species occur in India, I think Mr. Moore must be mistaken in saying that the species is not blue-glossed. As originally described Mr. Moore placed it between two blue-glossed species (*S. harrisi* and *S. pygmaea*), and all the indications would go to show that it is a blue-glossed species, in which case it is probably another synonym of *E. harrisi*.

*E. pygmaea* may, I think, be dismissed at once, as it is obviously only a stunted form of *E. binotata*. I possess from the Khasi Hills an even smaller specimen than the type, with which it agrees in markings. The two commonest forms in the Khasi Hills are *E. binotata* and *E. regina*, but the other three described species also occur there, but less commonly. Every gradation exists between the most heavily-marked *E. hopei* on the one side and the most sparsely-marked *E. regina* on the other, as represented in these Khasi Hill specimens, and I can come to no other conclusion than that we have here to deal with a single protean species which must stand as *E. (Stictoploea) harrisi*, Felder. Although this single species has been split up into six by three different entomologists (Moore having described three, Felder two, and Butler one), this by no means exhausts the number of species which might be created on similar lines, as there is hardly any combination in the different arrangement of the discal spots of the forewing and the marginal and submarginal spots of both wings which might not be met with were sufficient material available; at any rate, in the nearly one hundred set specimens and two hundred unset ones now before me as I write, there are numerous individual specimens which are quite as distinct as any hitherto described. And the species is obviously variable throughout its range, though in the Khasi Hills of Assam, where it appears to be commonest, these variations are the most numerous, and comprise the extreme north-westerly (Sikkim) form which seems to always possess the discal spots on the

\* l. c., p. 320, n. 5.

apperside of the forewing, and the southerly (Burma and Malay Peninsula) form in which these spots are invariably absent, but in which there is usually (not invariably) a prominent submarginal and marginal series of spots on the hindwing which are not usually found in the north-westerly form.

I give below a brief description of the species as I think it should be known, together with its synonymy in full. In the latter I include the *Stictoploea microsticta* of Butler, described without locality, as it is a form which appears to occur commonly in the Khasi Hills. Mr. Moore says it is a broader-winged insect in both wings than *E. hopei*, but as will be found stated below, even the shape of the wings in this species is inconstant.

#### EUPLŒA (STICTOPLŒA) HARRISII, Felder.

*Euploea harrisii*, Felder, Reise Novara, Lep., vol. ii, p. 328, n. 451, *male* (1865); *Stictoploea harrisii*, Moore, Journ. Linn. Soc. Lond., Zoology, vol. xxi, p. 31 (1886); *E. (Stictoploea) harrisii*, Elwes and de Nicéville, Journ. A. S. B., vol. iv, pt. 2, p. 416, n. 13 (1886); *Stictoploea harrisii*, Moore, Proc. Zool. Soc. Lond., 1883, p. 320, n. 4, pl. xxx, fig. 8, *male*; idem, id., Lep. Ind., vol. i, p. 136, pl. lii, figs. 1, *male*; 1a, *female* (1890); *E. harrisii*, Distant, Rhop. Malay., p. 411, n. 17 (1886); *Euploea grotei* (*female* only), Felder, l. c., p. 339, n. 470, pl. xli, fig. 7, *female* (1865); id., Butler, Trans. Linn. Soc. Lond., Zoology, second series, vol. i, p. 535, n. 3 (1877); id., Distant, l. c., p. 36, n. 17, pl. iii, fig. 3, *male* (1882); id., Marshall and de Nicéville, Butt. Ind., vol. i, p. 91, n. 77 (1882); id., Watson, Journ. Bomb. Nat. Hist. Soc., vol. iii, p. 19, n. 22 (1888); id., Adamson, Cat. of Butt. collected in Burma, p. 6, n. 33 (1889); idem, id., Notes on *Danainæ* of Burma, p. 14 (1889); *Stictoploea grotei*, Butler, Journ. Linn. Soc. Lond., Zoology, vol. xiv, p. 302, n. 4 (1878); id., Moore, Proc. Zool. Soc. Lond., 1878, p. 824; *Euploea hopei*, Felder, l. c., p. 328, n. 452, *male* (1865); id., Marshall and de Nicéville, l. c., p. 92, n. 78, pl. ix, fig. 18, *male* and *female* (1882); id., Watson, Journ. Bomb. Nat. Hist. Soc., vol. iii, p. 19, n. 23 (1888); id., Adamson, Cat. of Butt. collected in Burma, p. 6, n. 34 (1889); idem, id., Notes on *Danainæ* of Burma, p. 14 (1889); id., Manders, Trans. Ent. Soc. Lond., 1890, p. 517, n. 10; *Stictoploea hopei*, Butler, Journ. Linn. Soc. Lond., Zoology, vol. xiv, p. 302, n. 5 (1878); id., Moore, Proc. Zool. Soc. Lond., 1883, p. 319, n. 1; idem, id., Lep. Ind., vol. i, p. 138, pl. liii, figs. 1, *male*; 1a, *female* (1890); *E. (Stictoploea) hopei*, de Nicéville, Journ. A. S. B., vol. li, pt. 2, p. 55, n. 133 (1882); id., Elwes, Trans. Ent. Soc. Lond., 1888, p. 302, n. 16; *Stictoploea microsticta*, Butler, Journ. Linn. Soc. Lond., Zoology, vol. xiv, p. 302, n. 6 (1878); id., Moore, Proc. Zool. Soc. Lond., 1883, p. 320, n. 7; *Euploea microsticta*, Marshall and de Nicéville, l. c., p. 94, n. 80 (1882); *Stictoploea binotata*, Butler, Journ. Linn. Soc. Lond., vol. xiv, p. 302, n. 7 (1878); id., Moore, Proc. Zool. Soc. Lond., 1883, p. 319, n. 2, pl. xxx, fig. 4, *male*; idem, id., Lep. Ind., vol. i, p. 138, pl. liii, figs. 2, *male*; 2a, *female* (1890); *E. (Stictoploea) binotata*, Wood-Mason and de Nicéville, Journ. A. S. B., vol. lv, pt. 2, p. 347, n. 13 (1886); *E. binotata*, Watson, Journ. Bomb. Nat. Hist. Soc., vol. vi, p. 33, n. 14 (1891); *Stictoploea ragina*, Moore, Proc. Zool. Soc. Lond., 1883, p. 319, n. 3; idem, id., Lep. Ind., vol. i, p. 140, pl. liii, fig. 3, *male* (1890); *S. pygmaea*, id., Proc. Zool. Soc. Lond., 1883, p. 320, n. 6; idem, id., Lep. Ind., vol. i, p. 139, pl. lii, figs. 3, *male*; 3a, *female* (1890); *S. crowleyi*, id., Lep. Ind., vol. i, p. 138, pl. lii, fig. 2, *male* (1890).



HABITAT: Sikkim, Bhutan, Assam, Burma, Malay Peninsula, Cochinchina.

EXPANSE: ♂, 2·8 to 4·2; ♀, 3·4 to 4·2 inches.

DESCRIPTION: MALE. UPPERSIDE, *forewing* glossed with magnificent blue throughout; two prominent black impressed elongated sexual brands in the submedian interspace placed one above the other, the anterior rather the shorter; marginal blue dots varying from none to nine, when present invariably commencing at the anal angle and never reaching the apex of the wing; a submarginal series of larger spots varying from five to eight, and shewing great variation in size; an angulated series of discal spots placed beyond the discoidal cell, varying from none to five, also very variable in size; a spot at the outer posterior end of the cell and another on the costa between the origin of the first and second subcostal nervules, both sometimes present, sometimes absent. *Hindwing* rich dark piceous, becoming lighter towards the costa, the latter broadly cinereous; marginal white dots none in some specimens, to a complete series of twelve in others; a submarginal larger series varying from nine to ten, very inconstant in size, when present always commencing from the apex of the wing; sometimes with, sometimes without two discal bluish-white spots divided by the third median nervule beyond the discoidal cell. UNDERSIDE, *both wings* rich dark piceous; some white dots at the extreme base of the wings; the markings as above, but invariably much smaller, white, or bluish-white, as variable as on the upperside; sometimes with, sometimes without a spot at the end of each discoidal cell. *Forewing* with the inner margin broadly cinereous. FEMALE differs from the male in the inner margin of the forewing being straight instead of strongly outwardly bowed, and in the absence of the sexual brands on the upperside, which are represented in some specimens by a small blue streak; all the markings on both sides in both wings as variable as in the male. UNDERSIDE, *forewing* with two elongated bluish-white streaks in the submedian interspace. This latter marking is very useful, and by it a female *Stictoploea* can be at once identified, as it occurs in no other group of *Euploea*.

The shape of the forewing in this species shews considerable variation, some specimens being much broader than others, while the apex of the wing is also somewhat produced in some examples, much rounded in others.



## LIBRARY.

The following additions have been made to the Library since the meeting held in July last.

## TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

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- Bombay. The Indian Antiquary,—Vol. XX, No. 255.
- Bordeaux. La Société Linnéenne de Bordeaux,—Actes, Vol. XLIV.
- Calcutta. Asiatic Society of Bengal,—Proceedings, No. 4, April, 1892.
- . Geological Survey of India,—Records, Vol. XXV, Part 2.
- . Indian Engineering,—Vol. XII, Nos. 2-5, and Index to Vol. XI.
- . Photographic Society of India,—Journal, Vol. V, Nos. 7 and 8.
- Dorpat. Der Naturforscher-Gesellschaft bei der Universität Dörpat,—Sitzungsberichte, Band IX, Heft 3.
- Florence. La Società Italiana di Antropologia, Etnologia e Psicologia Comparata,—Archivio per L' Antropologia e la Etnologia, Tome XXII, Fascicolo I.
- Graz. Des Naturwissenschaftlichen Vereines für Steiermark,—Mittheilungen, Jahrg, 1891.
- The Hague. Koninklijk Instituut voor de Taal,- Land-en Volkenkunde van Nederlandsch-Indië,—Bijdragen tot de Taal- Land-en Volkenkunde van Nederlandsch-Indië, Deel VI, Aflevering 3.
- Leige. Société Géologique de Belgique,—Annals, Tome XIX, No. 2.
- Leipzig. Der Deutschen Morgenländischen Gesellschaft,—Zeitschrift, Band XLVI, Heft 1.
- London. Institution of Electrical Engineers,—Journal, Vol. XXI, No. 99.
- . Nature,—Vol. XLVI, Nos. 1182-85.
- . The Academy,—Nos. 1051-54, and Index to Vol. XLI.
- . The Athenæum,—Nos. 3374, 3375 and 3377.
- . Zoological Society of London,—Proceedings, Part I, 1892.
- Manchester. Manchester Literary and Philosophical Society,—Memoirs and Proceedings, Vol. V, No. 1.
- Moscow. La Société Impériale des Naturalistes de Moscou,—Bulletin, No. 1, 1892.

- Mussoorie. The Indian Forester,—Vol. XVIII, No. 7.
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- Rome. La Società Degli Spettroscopisti Italiani.—Memorie, Tome XXI, No. 5.
- St. Petersburg. Comitè Géologique,—Bulletins, Tome, X, Nos. 6-9; XI, 1-4.
- . ————. Mémoires, Vol. XIII, No. 1.
- Sydney. Linnean Society of New South Wales,—Proceedings, Vol. VI, Part 4.
- Taiping. Perak Government,—Gazette, Vol. V, Nos. 17-21.
- Toronto. Canadian Institute,—Transactions, Vol. II, Part 2.
- Trieste. La Società Adriatica di Scienze naturali in Trieste,—Bollettino, Tome, XIII, Parts 1 et 4.
- Wellington. Polynesian Society.—Journal, Vol. I, No. 1.
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### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- BYSACK, GAUR DASS. Passages from the Autobiography of a Bengalee gentleman of sixty years ago. 8vo. Calcutta, 1892.
- DAY, C. R. The Music and Musical Instruments of Southern India and the Deccan. 4to. London, 1891.

### MISCELLANEOUS PRESENTATIONS.

- The Thirty-fourth Annual Report of the Trade and Commerce of Chicago for the year ending December 31st, 1891. 8vo. Chicago, 1892.  
BOARD OF TRADE, CHICAGO.
- An Appeal to the Canadian Institute on the Rectification of Parliament. 8vo. Toronto, 1892.
- Annual Archæological Report and Canadian Institute (Session 1891), being an Appendix to the Report of the Minister of Education, Ontario. 8vo. Toronto, 1891.  
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- Notes on the Annual Statements of the Registration Department of the Central Provinces for the year 1891-92. Fcp. Nagpur, 1892.
- Report of the Sanitary Commissioner of the Central Provinces for the year 1891. Fcp. Nagpur, 1892.
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Index to the Genera and Species described in the Memoirs of the Geological Survey of India, Palæontologia Indica, up to the year 1891. 4to. Calcutta, 1892.

GEOLOGICAL SURVEY OF INDIA.

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Annual Report on the Police Administration of the Town of Calcutta and its Suburbs for the year 1891. Fcp. Calcutta, 1892.

Annual Returns of the Charitable Dispensaries under the Government of Bengal for the year 1891. Fcp. Calcutta, 1892.

Report on the Legal Affairs of the Bengal Government for the year 1891-92. Fcp. Calcutta, 1892.

Reports of the Alipore and Hazáribágh Reformatory Schools for the year 1891. Fcp. Calcutta, 1892.

GOVERNMENT OF BENGAL.

The Indian Antiquary, Vols. XX, Parts 255; XXI, 261 and 262. 4to. Bombay, 1892.

Usha, Vol. II, Part 2. 8vo. Calcutta, 1892.

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Annual Report of the Archæological Survey, Madras, for the year 1891-92. Fcp. Madras, 1892.

Progress Report of the Archæological Survey, Madras, for the last quarter of the year 1891-92. Fcp. Madras, 1892.

GOVERNMENT OF MADRAS.

Report on the Sanitary Administration of the Punjab for the year 1891. Fcp. Lahore, 1892.

GOVERNMENT OF THE PUNJAB.

Copy of a plan of Fort William, Calcutta, in the year 1759.

GOVERNMENT OF PONDICHERRY.

Indian Meteorological Memoirs, Vol. V, Part I. 4to. Calcutta, 1892.

Memorandum on the snowfall in the mountain districts bordering Northern India and the abnormal features of the weather in India during the first five months, with a forecast of the probable character of the South-West Monsoon rains of 1892.

METEOROLOGICAL REPORTER TO THE GOVERNMENT OF INDIA.

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KENNELF, DR. J. V. Die Verwandtschaftsverhältnisse der Arthropoden (Schriften herausgegeben von der Naturforscher-Gesellschaft bei der Universität Dorpat, VI). 8vo. Dorpat, 1891.

NATURFORSCHER GESELLSCHAFT DER UNIVERSITÄT, DORPAT.

Proceedings of the Trustees of the Newberry Library, Chicago, for the year ending January 5th, 1892. 8vo. Chicago, 1892.

NEWBERRY LIBRARY, CHICAGO.

DANIELSSEN, D. C. Den Norske Nordhavs—Expedition, 1876-1878, XXI. Zoologi. Crinoida and Echinida. 4to. Christiania, 1892.

NORWEGIAN NORTH-ATLANTIC EXPEDITION.

Scientific Memoirs by Medical Officers of the Army of India, Part VII. 4to. Calcutta, 1892.

SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

General Report on the Operations of the Survey of India during 1890-91. Fcp. Calcutta, 1892.

Synopsis of the results of the operations of the Great Trigonometrical Survey of India, Vol. XXIII. The South Konkan Coast Series. 4to. Dehra Dun, 1891.

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SURVEYOR-GENERAL OF INDIA.

Observations faites à l'Observatoire Météorologique de l'Université de Kiew, April and May 1892. 8vo. Kiew, 1892.

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MUYBRIDGE, EADWEARD. The Science of Animal Locomotion; an Electro-Photographic Investigation of Consecutive Phases of Animal movements. 8vo. Philadelphia, 1891.

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BLYTT, A. The probable cause of the displacement of beach-lines. 8vo. Christiania, 1889.

VIDENSKABS-SELSKABS, CHRISTIANIA.

A Catalogue with Descriptive Notices of the Portraits, Busts, etc., belonging to Yale University, 1892. 8vo. New Haven, 1892.

Catalogue of the Officers and Graduates of Yale University in New Haven, Connecticut, 1701-1892. 8vo. New Haven, 1892.

Report presented by the Board of Managers of the Observatory of Yale University to the President and Fellows, for the year 1891-92. 8vo. New Haven, 1892.

YALE UNIVERSITY, NEW HAVEN.

PERIODICALS PURCHASED.

- Allahabad. North Indian Notes and Queries,—Vol. II, No 4.  
 Braunschweig. Jahresbericht über die Fortschritte der Chemie und  
 verwandter Theile anderer Wissenschaften, Heft 1, 1889.  
 Calcutta. Indian Medical Gazette,—Vol. XXVII, No. 7, and Supple-  
 ment for July 1892.  
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 XXVII, No. 6.  
 Leipzig. Annalen der Physik und Chemie,—Band, XLVI, Heft, 2.  
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BOOKS PURCHASED.

- AUFRECHT, DR. THEODOR. Florentine Sanskrit Manuscripts. 8vo. Leip-  
 zig, 1892.  
 Dastan-i-Masih; a Persian Manuscript.  
 Usha, Vol. II, Part 2. 8vo. Calcutta, 1892.

PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR NOVEMBER, 1892.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 2nd November, 1892, at 9 P. M.

L. DE NICEVILLE, Esq., F. E. S., C. M. Z. S., in the Chair.

The following gentlemen were present :—

Bábu Narsingh Dutt, The Most Rev. Dr. Paul Geothals, G. A. Grierson, Esq., C. Little, Esq., A. S. Lovelock, Esq., Dr. J. H. Tull Walsh, C. R. Wilson, Esq.

The minutes of the last meeting were read and confirmed

Seventy-one presentations were announced, details of which are given in the Library List appended.

The Secretary reported that the following gentlemen had been elected Ordinary Members of the Society during the recess, in accordance with Rule 7 :—

R. Greeven, Esq., C. S.  
Bábu Narsingh Dutt.  
George Lyell, Esq.  
A. S. Lovelock, Esq.  
Dr. F. J. Drury.  
Dr. Frederic H. Norvill.

The following gentlemen are candidates for election at the next meeting :—

F. B. Shawe, Esq., proposed by C. Little, Esq., seconded by Dr. A. F. R. Hoernle.

Bábu Sarat Chandra Chatterjee, proposed by Pandit Haraprasad Sastri, seconded by Bábu Gaurdas Bysack.

Bábu Panchanan Mukherji, proposed by Pandit Haraprasad Sastri, seconded by Bábu Gaurdas Bysack.

The Council proposed the following gentleman for election as an Associate Member at the next meeting :—

P. J. Brühl, Esq., of Seebpur College. Mr. Brühl is a diligent student of Physics and Botany and is distinguished by his profound knowledge of Ranunculaceæ.

The following gentleman has expressed a wish to withdraw from the Society :—

H. W. Reynolds, Esq., C. S.

The Secretary reported the death of the following member :—

Pandit Prannath Sarasvati, M. A., B. L.

The following papers were read :—

1. *Note on the Indian Butterflies comprised in the subgenus Pademna of the genus Euplœa*.—By LIONEL DE NICEVILLE, Esq., F. E. S., C. M. Z. S.

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

2. *A specimen of the Padumāwati*.—By G. A. GRIERSON, Esq., C. S.  
The paper will be published in the Journal, Part I.

3. *The Communal Barracks of Primitive Races*.—By S. E. Peal, Esq.  
The paper will be published in the Journal, Part II.

4. *An account of an old copper plate Solankhi Múlarája*.—By MUNSHI DEBIPRASAD. Communicated by the Philological Secretary.

(Abstract.)

This copper plate was produced in a Márwár court in A. D. 1872, and again in A. D. 1881, in connection with a law suit. It bears an inscription purporting to be a gift of land to a Bráhmaṇ who had come to Márwár from Kanauj. The Bráhmaṇ is called Durga Áchárya, the son of Dúrlabha Áchárya. The land granted is described as the village Barnak in Satyapur [Sanchor] which was bounded by the four villages Banar Gandauk, and it is said to be the site of the modern village of Balerám. The grant is made by the well-known Solankhi king Múlarája, and is dated Saṃvat 1051, Mágha Sudhi 15 on the occasion of the lunar eclipse. This date corresponds with Saturday, 19th January 995 A. D. when there was a lunar eclipse visible at Lañka.



## LIBRARY.

The following additions have been made to the Library since the meeting held in August last.

## TRANSACTIONS, PROCEEDINGS, AND JOURNALS,

*presented by the respective Societies and Editors.*

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- . ————. Verslagen en Mededeelingen, Afdeling Letterkunde, 3<sup>e</sup> Reeks, Deel VIII.
- . ————. ————. Afdeling Natuurkunde, 3<sup>e</sup> Reeks, Deel VIII.
- Batavia. Bataviaasch Genootschap van kunsten en Wetenschappen,—Tijdschrift voor Indische Taal,—Land-en Volkenkunde, Deel XXXVI, aflevering 1.
- . ————. Verhandelingen, Deel XLVII, 1<sup>o</sup> Stuk.
- Berlin. Berliner Entomologische Zeitschrift,—Band XXXVII, Heft 2.
- . Der Königlischen Akademie der Wissenschaften zu Berlin,—Abhandlungen, 1891.
- . ————. Sitzungsberichte, I-XXV.
- Bombay. Bombay Natural History Society,—Journal, Vol. VII, Nos. 1 and 2; and Index to Vol. VI.
- . The Indian Antiquary,—Vol. XXI, Parts 263 and 264.
- Brussels. La Société Royale Malacologique de Belgique,—Annales, Tome XXV.
- . ————. Procès-Verbal, 6th Septembre 1890—6th Juin, 1891.
- Calcutta. Asiatic Society of Bengal,—Journal, Part I, No. 2, 1892.
- . ————. Proceedings, Nos. 5-7, 1892.
- . Geological Survey of India,—Records, Vol. XXV, Part 3.
- . Indian Engineering,—Vol. XII, Nos. 6-18.
- . Mahabodhi Society,—Journal, No. 5, 1892.
- . Photographic Society of India,—Journal, Vol. V, Nos. 9 and 10.
- Ceylon. Ceylon Branch of the Royal Asiatic Society,—Journal, Vol. XI, No. 39.
- Chicago. The American Antiquarian and Oriental Journal,—Vol. XIV, Nos. 4 and 5.
- Copenhagen. La Société Royale des Antiquaires du Nord,—Mémoires, Nouvelle Série, 1891.

- Dresden. Gesellschaft Iris zu Dresden,—Deutsche Entomologische Zeitschrift, Band V, Heft 1.
- Dublin. Royal Irish Academy,—Cunningham's Memoirs, No. 7.  
 ————. ————. Transactions, Vol. XXIX, Parts 18 and 19.
- Florence. La Società Africana d' Italia,—Bullettino, Tome VIII, Nos. 1-3.
- Frankfurt, a. M. Der Senckenbergische Naturforschende Gesellschaft,—Bericht, 1892.
- Giessen. Der Oberhessischen Gesellschaft für Natur-und Heilkunde,—Bericht, Band XXVIII.
- The Hague. Koninklijk Instituut voor de Taal,—Land-en Volkenkunde van Nederlandsch-Indië,—Bijdragen tot de Taal—Land-en Volkenkunde van Nederlandsch-Indië, 5o Volgreeks, Deel VII, Aflevering 4.
- Hamburg. Naturhistorischen Museum in Hamburg,—Mitteilungen, Jahrgang IX, Heft 2.
- Hamilton. Hamilton Association,—Journal and Proceedings, Session, 1891-92.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Juillet—Août, 1892.
- Ithaca. Cornell University,—Library Bulletin, Vol. III, No. 1.
- Königsberg. Der Physikalisch—Ökonomischen Gesellschaft zu Königsberg,—Schriften, Jahrgang XXXII.
- Leipzig. Der Deutschen Morgenlandischen Gesellschaft,—Zeitschrift, Band XLVI, Heft 2.
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 ————. Anthropological Institute of Great Britain and Ireland,—Journal, Vol. XXI, No. 4.  
 ————. The Athenæum,—Nos. 3378-90.  
 ————. Geological Society,—Quarterly Journal, Vol. XLVIII, Part 3.  
 ————. Institution of Electrical Engineers,—Journal, Vol. XXI, No. 100.  
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 ————. Nature,—Vol. XLVI, Nos. 1186-98.

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- . Royal Astronomical Society,—Monthly Notices, Vol. LII, Nos. 6–8.
- . Royal Geographical Society,—Proceedings, New Series, Vol. XIV, Nos. 6–8.
- . Royal Microscopical Society,—Journal, Part 3, 1892.
- . ————. List of Fellows, 1892.
- . Royal Society of London,—List of Fellows, 30th November, 1891.
- . ————. Philosophical Transactions, Vol. CLXXXII (A and B).
- . ————. Proceedings, Vol. L, No. 307; LI, Nos. 309–12.
- . Royal Statistical Society,—Journal, Vol. LV, Part 2.
- . Zoological Society of London,—Proceedings, Part 2, 1892.
- Mexico. La Sociedad Científica “Antonio Alzate”,—Memorias y Revista, Tome V, Nos. 7–12.
- Mussorie. The Indian Forester,—Vol. XVIII, Nos. 8–10.
- Naple. La Società Africana d’Italia,—Bollettino, Anno XI, Fasc. 5 et 6.
- Paris. Journal Asiatique,—VIII<sup>e</sup> Série, Tome XIX, Nos. 2 et 3.
- . La Société de Géographie,—Bulletin, Tome XIII, Nos. 1 et 2.
- . ————. Comptes Rendus des Séances, Nos. 12–14, 1892.
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- . ————. Mémoires, Tome V, Nos. 2 et 3.
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- Rome. La Società Degli Spettroscopiste Italiani,—Memorie, Tome XXI, Nos. 6–8.
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- Sydney. Linnean Society of New South Wales,—Proceedings, 2<sup>nd</sup> Series, Vol. VII, Part 1.
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- . ————. Journal of the College of Science, Vol. V, Part 2.
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- . ————. Osservazioni Meteorologiche, Anno 1891.
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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR DECEMBER, 1892.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 7th December, 1892, at 9 P. M.

THE HON'BLE SIR C. A. ELLIOTT, K. C. S. I., C. I. E.,  
President, in the Chair.

The following members were present :—

Nawab Abdul Latif Khan Bahadur, O. G. Arthur, Esq., G. A. Grierson, Esq., Dr. A. F. R. Hoernle, The Rev. H. B. Hyde, W. A. Lee, Esq., C. Little, Esq., C. J. Lyall, Esq., R. D. Mehta, Esq., T. R. Munro, Esq., L. de Nicéville, Esq., A. Pedler, Esq., The Rev. G. Sandberg, Pandit Haraprasád Shástri, E. Thurston, Esq., Dr. J. H. Tull Walsh, C. R. Wilson, Esq.

Visitors :—Captain J. Crane, A. C. Daniell, Esq., Captain W. A. Eaton.

The minutes of the last meeting were read and confirmed.

Sixty-one presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were balloted for and elected Ordinary Members :—

F. B. Shawe, Esq.  
Babu Sarat Chandra Chatterjee.  
Babu Panchand Mukherji.

The following gentleman, proposed by the Council at the last meeting, was ballotted for and elected an Associate Member :—

P. J. Brühl, Esq.

The following gentlemen are candidates for election at the next meeting :—

His Highness the Maharajah Scindia, proposed by The Hon. Sir C. A. Elliott, seconded by C. J. Lyall, Esq.

E. A. Gait, Esq., I. C. S., Shillong, proposed by H. Lusson, Esq., seconded by T. D. Beighton, Esq.

E. D. Maclagan, Esq., M. A., I. C. S., proposed by H. Lusson, Esq., seconded by General R. Maclagan.

P. Sundaram Pillay, Esq., Trivandrum, proposed by C. Little, Esq., seconded by C. R. Wilson, Esq.

The following gentlemen have expressed a wish to withdraw from the Society :—

Major C. T. Bingham, B. S. C.

Babu Kirán Chándra Roy.

Moulvie Delawar Hosaen Ahmad.

The Hon. Justice A. Wilson.

The SECRETARY read a letter, No. 4027-F, dated 3rd November, 1892, from the Government of Bengal, covering copy of a communication from the Private Secretary to His Honour the Lieutenant-Governor of Bengal.

No. 172.

FROM

THE PRIVATE SECRETARY TO HIS HONOUR  
THE LIEUTENANT-GOVERNOR OF BENGAL,

TO

THE SECRETARY TO THE  
GOVERNMENT OF BENGAL,  
FINANCIAL DEPARTMENT.

*Dated Darjeeling, the 27th September, 1892.*

SIR,

SIR CHARLES ELLIOTT is desirous of creating an endowment for the encouragement of original research in Physical Science in Bengal. He proposes that the endowment shall consist of the sum of Rs. 5,000 invested in the Government 4 per cent. promissory notes, and yielding

an annual return of Rs. 200, and he hereby makes application that this sum may, with the sanction of the Local Government, be vested in the Treasure of Charitable Endowments under Act VI of 1890, and that a scheme may be settled for the administration of the endowment.

2. The outline of the scheme, as it presents itself to him, is as follows :—

(a) The prize, *i e.*, the annual sum received as interest, is to be awarded, whether in cash or partly in the form of a gold medal and partly in cash, for any original essay giving the results of original research or investigation in any branch of Physical, Chemical, Mathematical or Natural Science composed and published during the calendar year on account of which the prize is given. It shall be called the "Elliott Prize for Scientific Research."

(b) Any Native of Bengal, including any Eurasian or domiciled European residing in Bengal, may compete for the prize.

(c) The Trustees to be appointed under section 5 (1) of Act VI of 1890 to administer the property, shall be—

The President of the Asiatic Society.

The Vice-Chancellor of the Calcutta University.

The Director of Public Instruction, Bengal.

(d) These Trustees shall have power to consult as experts—

The Superintendent, Botanical Gardens.

Ditto, Geological Survey.

The Meteorological Reporter to Government of India.

The Superintendent, Imperial Museum.

The Principal, Medical College, Calcutta.

The Professor of Physiology, Medical College.

The Director or Managing Secretary to the Indian Association for the advancement of Science.

The Professor of Physical Science, Presidency College, Calcutta.

„ Chemistry, Presidency College, Calcutta

„ Mathematics, „ „ „

(e) The endowment to have effect from 1st January 1893. The essays of competitors to be sent in to the President, Asiatic Society, by the end of December of each year. The prize to be adjudged to the best competitor and awarded publicly at the Annual General Meeting of the Asiatic Society in February.

- (f) The Trustees to announce, in January of each year, to which of the four branches of science named in (a) the competitors for the prize shall address themselves.
- (g) Preference to be given to researches leading to discoveries likely to develop the industrial resources of Bengal. In the case of no essay being deemed by the Trustees to be of sufficient merit, no prize to be awarded, but the amount to be retained so that in any future year two or more prizes may be given, or the prize enhanced in the case of an exceptionally good essay.

I have the honour to be,

SIR,

Your most obedient servant,

(Sd.) J. W. CURRIE, *Captain,*  
*Private Secretary.*

The SECRETARY stated that the Council had authorized the President to act as a Trustee, and agreed to the prize being awarded at the Annual General Meeting (carried unanimously).

The SECRETARY read a letter, No. 347, dated 10th November 1892, from the Government of India, Home Department, covering copy of a communication from Her Majesty's Secretary of State for India.

1286.

Public (Records),  
No. 64.

INDIA OFFICE,

LONDON, 13th October, 1892.

To

HIS EXCELLENCY THE MOST HONOURABLE  
THE GOVERNOR-GENERAL OF INDIA  
IN COUNCIL.

MY LORD MARQUIS,

In reply to Your Excellency's letter, No. 11, Education, dated 30th August, I have to inform you that no proposal for the transfer of the Oriental MSS. and works now in the Library of this Office to the custody of the British Museum has been brought to the notice of myself or of my Predecessor.

2. Should such a proposal be hereafter submitted, the representations of the Asiatic Society of Bengal forwarded with your letter under reply shall receive due consideration.

I have, etc ,

(Sd.) KIMBERLY.

The following papers were read :—

1. *Note on the Bestowal of Indian Kingships by Lot.*—By L. A. WADDELL, Esq., M. B., M. R. A. S.

In the Proceedings of the Society for November last year, Mr. Tawney draws attention to the fact that in a collection of Jaina tales—the *Kathá Kośa*—and also in the *Kathá Sarit Ságara*, the Indian Kingships are occasionally described as bestowed by lot or ordeal, and Mr. Tawney invites further communications from other than Jaina sources. I find the same practice mentioned in a Buddhist work; *viz.*, the Biography of the Indian Buddhist Monk Atisha (or Dipaṅkára) written by his lamaist pupil Bromton shortly after Atisha's death in 1050 A. D. And a variant of the same story appears in Táránátha's History of Indian Buddhism under the Chapter on King Gopála. In describing the origin of the Pála dynasty of Magadha, with the later members of which Atisha seems to have been intimately associated, his biographer states that the founder of the Pála dynasty (*viz.*, Go-pála) was originally a Yogi of The Middle Country who went to the shrine of *Marici*<sup>1</sup> in the South of India and prayed for a kingdom and kingly knowledge to administer it. The image replied 'Go towards the East.' In obedience to this command the Yogi travelled eastwards, and latterly reached a city where the king was being changed, and at that time the kingship had fallen to the lot of the son of a female Cow-keeper who was giving way to her grief. The Yogi on enquiring about her trouble was informed that her son had just been elected king; and on asking why that was a cause for grief rather than joy, he was told that to be made the king of that country practically meant death. The Yogi then offered himself as a substitute for the Cow-keeper's son and was gladly accepted and installed as king. Now it had happened that the queen-consort of a previous king had on dying been reborn as a wicked Nágini, who regularly devoured all the subsequent kings on the first night after their installation. So this Yogi remained all night chanting his *dharánis* to his tutelary goddess Marici with sword<sup>2</sup> in hand, and when the Nágini appeared in the form of a great serpent it was killed by the force of these *mantras*. In the morning, when the servants came as usual to remove the corpse of the king of the previous day, they were astonished to find the king alive and the Nágini dead instead. The Yogi was then confirmed in the Kingship and named Go-pála although he was not really a Go-pála or Cow-keeper, but only the Cow-keeper's substitute. And it is added 'Only Bhangala was under him.'

<sup>1</sup> Táránátha calls the goddess *Chanda*.

<sup>2</sup> Táránátha says 'with the staff emblematic of his tutelary goddess.'

2. *Identification of the old Orissan port of Chitratata, the 'Che-li-ta-lo' of Hiuen Tsiang.*—By L. A. WADDELL, ESQ., M. B., M. R. A. S.

In regard to few of the ancient Indian sites described by Hiuen Tsiang, have more widely divergent attempts at identification been made than in the case of the old Orissan port of 'Che-li-ta-lo.' St. Martin,<sup>1</sup> Cunningham,<sup>2</sup> Fergusson,<sup>3</sup> &c., having each selected widely different sites, in various parts of Orissa and Western Bengal—over 200 miles apart, and none of them satisfy the pilgrims' description even in a general way.

This wide divergence of opinion has been due partly to the want of local knowledge on the part of the writers and also to the geographical vagueness of the country of 'U-cha' in which this port was located, owing to the non-identification of the preceding capital of Karnasuvarna from which the pilgrims' route is calculated and described.

In a recent paper,<sup>4</sup> I have fixed the site of the capital of Karnasuvarna as being almost certainly at Kásonnagar near the Kauchannagar suburb of Burdwan town. And by the same process which proved so successful in that deltaic inquiry, *viz*, by searching along the old rivers of the delta for the survival of the name and also taking into account the traditional capital and ports of the people, I have been led to determine locally the site of the Old Orissan port of 'Che-li-ta-lo.'

At the time of Hiuen Tsiang's visit, *circa* 640 A. D. Yájápur,<sup>5</sup> was undoubtedly the capital of the country of 'U-cha'—the northern portion of Orissa which lay to the south-west of Karnasuvarna, and to the north-east of 'Kong-u-tha' (Khordhá) north of Kalinga. Indeed the 'U-cha' of the pilgrim seems intended to represent the Sanskrit *Yá-ja*.

Hiuen Tsiang describes the port thus:—"On the south-eastern "frontiers of the country (of U-cha) on the borders of the ocean, is "the town of Che-li-ta-lo,<sup>6</sup> about 20 li<sup>7</sup> round. Here it is merchants

<sup>1</sup> *Memoires Contrees Occident.*, ii, 395.

<sup>2</sup> *Ancient Geography of India.*

<sup>3</sup> *Jour. Royal As. Soc.*, vi.

<sup>4</sup> *Note on King S'ásańka who defaced the stone foot-prints of Buddha at Pátaliputra circa 600 A. D. and on his lost kingdom of Karnasuvarna*—An Appendix to the *Discovery of the exact site of Aśoka's classic capital of Pátaliputra—the Palibothra—of the Greeks; and description of the superficial remains.*—By L. A. WADDELL, published by The Government of Bengal, Calcutta, 1892.

<sup>5</sup> Still locally spelt as above, but usually pronounced 'Jájpnr.'

<sup>6</sup> And a note by the Chinese editor states Fa-hing or 'city of departure'—though it is not stated whether this is a definition of the site or the etymology of its name. Beal (H. Tsiang, II, p. 233) has shown that the second or 'Southern' Charitrapura of Julien has no place in the text.

<sup>7</sup> *i. e.*, over 3 miles in circumference.



“depart for distant countries, and strangers come and go and stop here on their way. The walls of the city are strong and lofty. Here are found all sorts of rare and precious articles. Outside the city are five convents one after the other; their storeyed towers are very high and carved with figures of the saints exquisitely.”<sup>1</sup>

In the locality here indicated—in exact keeping geographically with the distances and directions noted by the pilgrim—in the Mahanadi delta, about 15 miles below Cuttack, we find the older channel of the great Mahanadi River is still known as the ‘*Chitratola River*,’ although no village or town of that name now exists on its banks. But at the highest point of this part of the Mahanadi channel, where the name of Chitratola still clings to this branch of the Mahanadi, at the village of Nendra, opposite Kendwapatana lock of the Kendrapara canal, the villagers point out the site of the old port on what is now a vast expanse of sand in the river bed. And they relate the tradition that the town and port of Chitratola which stood there, was cut away by the river long before the Mahratta occupation of Orissa; and that most of its inhabitants removed to the northern bank of the river and further down the delta to Kendwapatana and Kendrapara.

The former proximity of this port, the sea and its tidal character, are attested by the name of the other branch, here given off by the Chitratola River, *viz.*, the *Nun Nadi* or ‘The Salt River,’ which again joining the Chitratola River further down, discharges into the sea at False Point. And along the Chitratola and Nun Rivers is found growing luxuriantly the dwarf Screw-pine which fringes the salt-water swamps near the sea.

The site of Chitratola is now inland about 50 miles from the present coast line and about 15 miles above tidal limits—the seaboard having retired before the immense amount of silt brought down by the Mahanadi from the Central Indian Highlands, from a hill-area, according to Hunter,<sup>2</sup> of 45,000 square miles. And, as the Mahanadi delta is very short and deep, the alluvial accretion must have buried up much of the remains seen by the pilgrims over 1,200 years ago. The great demand also for blocks of stone to stay the erosions of the Mahanadi River and latterly for the irrigation and transit canals must have consumed most of the superficial stones.

But there are still a good many old remains in the high tract immediately to the south of and continuous with the eroded site of Chitratola, consisting of several old tanks, carved lateritic blocks strewn throughout the adjoining villages of Nendra and Manikpur; and several

<sup>1</sup> Hsien Tsiang, BEAL'S Translation, II, 205.

<sup>2</sup> *Orissa*, I, 47.

old Jaina and Saivic Hindu images of laterite and basalt enshrined in buildings of great carved laterite blocks rudely piled together, and evidently survivals of the wreck of former temples, thus preserved by the inhabitants of these decayed villages. I had no leisure to explore the neighbourhood, but a careful search through the adjoining villages on both banks of the rivers would doubtless reveal numerous other remains and traces of the Buddhist convents which were in its neighbourhood. I was informed that many carved stones exist in the adjoining villages of Samitunga, Santpur, Santolo, Bandapur—one to two miles to the south of Nendra.

The modern restoration of Hiuen Tsiang's phonetic transcription of the name of this port, as adopted by Julien, and followed by subsequent writers, *viz.*, 'Charitra' is thus doubtfully correct. The original name seems more nearly to resemble or be identical with the still current name—'Chitratola.' Most of the Orissan place-names of a Sanskritic origin are found to have preserved their mediæval form remarkably well. The pargana or parish between this site and the present seabord is called 'Chhedra Kila' in the old Muhammadan maps. And the relatively recent formation of this part of the delta is well seen in the adjoining parganas which are named *Suknai* or 'the dry,' and *Nayakhand* or 'the new tract.'

This identification is of considerable geological interest, as it affords data for estimating the rate of the process of deltaic land-formation within the past 1,250 years.

3. *Note on the 'Ma-gu-ta' or CHA-RUNG KHÁ-SHAR STUPA—a celebrated place of Lamaist pilgrimage in Nepal.*—By L. A. WADDELL,  
M. B., M. R. A. S.

One of the celebrated places of Lamaist pilgrimage, outside Tibet, is the *Chá<sup>1</sup>-rung kha-shar Chhö-rtén*, about two miles to the north-east of Khatmandu. Immense numbers of Tibetans, both lamas and laity, visit the place every winter and encamp in the surrounding field for making their worship and offerings and circumambulating the sacred spot. It is the chief place of lamaist pilgrimage in Nepal, attracting far more votaries than the Sambhunáth Stupa, which is not far distant. Its special virtue is reputed to be its power of granting all prayers for worldly wealth, family and everything else asked for. Dr. Buchanan-Hamilton, in his account of Nepal, written about the beginning of the present century, gives a drawing of the monument, which is of a almost simple hemispherical form, of the type of the earliest stupas; and Wright<sup>2</sup> under the title of 'Temple of Bodhnáth' gives a rough chromo-

<sup>1</sup> Spelt *pya*.

<sup>2</sup> *Nepal*, pp. 22, 100.

lithograph of its more modern appearance with its additional buildings and investing wall. But no description or account of the monument seems to be on record.

As I have obtained a copy of the printed booklet which is sold at the stupa to the pilgrims, I here give a short abstract of its contents, which are interesting as showing how the Stupa is brought into intimate relations with the chief legendary and historic persons of early Lamaism. The print is a new revision by Punya Vajra and another disciple of "the great Lama Zhab-dkar." This latter Lama, I am informed, lived about thirty years ago, and gilded the short spire of the stupa and built the present investing wall.

The book states as follows:—

"This Stupa enshrines the spirit of the Buddhas of the ten directions, and of the Buddhas of the three times, (*i. e.*, the present, past and future), and of all the Bodhisatwas, and it holds the Dharma-kāya.

"When King Thi Srong Detsan<sup>1</sup> asked The Guru,<sup>2</sup> at Samyas,<sup>3</sup> to tell him the history of the *Ma-gu-ta* stupa in Nepal, made by the four sons of 'the bestower of gifts' named 'the poor mother Pya-rdsi-ma (Fowl-keeper),' then the Guru thus related (the story):—

"In a former *Kalpa*—time beyond conception—the Bodhisatwa Mahásatwa Avalokiteśwara, approached the Tathagatha Amitabha and prayed for the animals immersed in the miry slough, and after saving these he went to Mount Potála. There he saw hosts of unsaved animals, innumerable like unto mounds of *murwa*<sup>4</sup> lees, and (seeing this he) wept. Two of his pitying tears were born into Indra's heaven as god's daughters, named respectively Kangma and the Little Kang-ma or Kang-chhung-ma. This latter having stolen in heaven some flowers, was as a punishment, reborn in earth, in a low pigherd's family in Maguta in Nepal, under the name of Sambhara or 'the Chief Happiness,' her mother's name being Purna. On marriage she had four sons, and her husband's early death left her with the sole care of the family. She with her family undertook the herding and rearing of geese for the wealthy, and in this pursuit having amassed much wealth, she—Ma-pya-rdsi-ma (or mother Fowl-keeper)—decided to build a large Stupa in honor of the Tathagatha. She, thereon, went to the king and begged for a site, saying, she wanted only so much ground as one hide could cover.

<sup>1</sup> The king of Tibet who introduced Lamaism.

<sup>2</sup> *i. e.*, Padma Sambhava, or Ugyan the founder of Lamaism.

<sup>3</sup> The first lamaist monastery in Tibet.

<sup>4</sup> The millet seed (*elusine crocanum*) about the size of mustard seed, from which is made the Himalayan beer.

The king assented saying, '*Cha-rung*,' which literally means 'do' + 'can,' *i. e.*, 'you can do (so)'<sup>1</sup>. Then she cutting a hide into thin thongs (forming a long rope) enclosed that very large space which now is occupied by this chaitya. And she, with her four sons, and a servant, and an elephant and an ass, as beasts of burden, brought earth and stones and commenced to build this chaitya by their own personal labour.

"Then the king's ministers appealed to the king to stop such an ambitious building, as they asserted its magnificence put to shame the religious buildings of the king and the nobles. But the king answered '*Kha-Shor*'—which literally means 'mouth + (has) spoken'<sup>2</sup>—and so refused to interfere. (Thus is the name of the Stupa—'*Cha-rung Kha-shor*'—accounted for).

"After four years, when only the base had been laid, the mother died, but her sons continued the building till its completion. And in the receptacle was placed one Magadha measure (*drona*) of the relics of the Tathagatha Kaśyapa. This event was celebrated by the manifestation in the sky, above the Stupa, of Kaśyapa himself, and the circles of celestial Buddhas and Bodhisatwas, and their hosts of retinue, and amongst showers of flowers the gods contributed divine music and rained perfume. Earthquakes thrice occurred, and through the glory of the assembled divinities there was no darkness for five nights.

"One of the sons then prayed 'May I in my next rebirth be born as a great scholar (to benefit mankind)'—and he was born as Thonmi Sambhota<sup>3</sup>—(the introducer of the so-called 'Tibetan' character and the first translator of Indian Buddhist texts into Tibetan) *circa* 650 A. D.

"The second son prayed in a similar manner, and was reborn as 'The Bodhisatwa'<sup>4</sup>—(the abbot of the first monastery of Tibet).

"Then the elephant or *lang-po* (hearing these prayers) said 'These two neglecting me, who contributed so much assistance, are asking all the good things for themselves, therefore, let me be reborn in a form to destroy them or their work.' And he was afterwards reborn as Langdarma—(the persecutor of Lamaism).

"The third son, hearing the elephant's request, prayed that he might be reborn in a form to neutralize the evil of the elephant's incarnation; and he was born as Hlo-lung phel kyī rdorje—(the lama who murdered Langdarma, the Julian of Lamaism).

<sup>1</sup> This story, and indeed the greater part of the legend, seems to have its origin in a false etymology of the proper names.

<sup>2</sup> *Vide* previous footnote.

<sup>3</sup> The 750 who introduced to Tibet of a written character, and the first Tibetan translations from the Indian Scriptures.

<sup>4</sup> The Indian Buddhist monk Santarakshita who was the abbot of the first monastery of Tibet (Samyas).

This Stupa is also worshipped by the Nepalese Buddhists, *viz.*, the Newars—the semi-aborigines of the Nepal valley, and the Murmi, a cis-Himalayan branch of Tibetan stock. The name ‘Maguta’—pronounced ‘Makuta’—is doubtless a contraction for *Makuta bandhana*, the pre-Buddhist ‘crested chaitya’ such as existed at Buddha’s death at Kusinagara, in the country of the Mallas—a tribe which I believe to be the same which penetrated latterly to the adjoining country of Nepal and there established the ‘Mall’ dynasties.

4. *Burmese Buddhist Rosaries.*—By L. A. WADDELL, M. B.,  
M. R. A. S.

In my contribution on Lamaic Rosaries I made incidental reference to the rosary as used by the Southern Buddhists. I have now, mainly through the kindness of Mr. Mounng Hpo Myin of Rangoon, obtained a set of the various kinds of rosaries used by the Burmese Buddhist monks and also some interesting information on the subject.

The rosary is admitted by the learned Burmese monks or *phungyis* to be of comparatively recent introduction into Burmese Buddhism, where it has been in use for some centuries at least. Its exact time and mode of introduction is, however, unknown; but it is believed by the Burmese monks to have been unknown in, and not obtained from, Indian Buddhism. And in this connection I may note that in none of the many Indian Buddhist sculptures, and Ajanta frescoes examined by me—even the most modern—have I found a rosary in the hands of the monks or as a part of their outfit. My own opinion is, that it was probably brought to Burma from India by pilgrims during the latest Tantric stage of Buddhism about the 11th cent. A. D., when, according to the more reliable Tibetan accounts, the rosary held a conspicuous place in the mystical and highly impure form of Buddhism then existing throughout India.

Now-a-days in Burma it is quite exceptional to find any monk or lay devotee without a rosary; and the monks support their use of it by a quotation from one of Buddha’s own *sutras* or sermons in

**Rosary in general use.**

the collection of the *Tika Anguttara Nikāya*, which is believed by many to date to the first Council in the year

**Reason alleged for use of rosary.**

of Buddha’s death, and in which occurs the following passage:—

“*Uposathan upawasantena paruparodhapati sangutta kammanta* “*navita rotappa, khayavayagananam karontena vitinamitabhun.*” Which “may be translated—“Those who observe *uposatha* should pass their

“time in COUNTING the number of times of decay and of the breaking “up of all nature.” The occurrence here of the word ‘counting’ is held to justify the use of the rosary.

The rosary is known by its Burmese name of *Tsi-puthi* ဝိပဇ္ဇာဝိစုတိ:

**Its name.** which literally means ‘the mind garland,’ i. e., the meditation-rosary, and the exercise of telling the beads is believed to facilitate the abstraction of the mind from worldly matters and its concentration on the topics enunciated.

Like the lamaist rosary it consists of 108 beads, corresponding, it is alleged, to the 108 symbols on Buddha’s sole or foot-prints.

**The number of beads.** Its general form is the same as that of the Bo-dhi-tse rosary of the gelukpa Lamas, except in the absence of the strings of ‘counters’ of the latter. The central bead, through which the two ends of the rosary string are passed, is extra to the 108, and it is surmounted, as in the gelukpa rosary, by two or more beads, spherical and discoid in shape, to form a vase.

**General form.** The material of which the beads are made varies according to the taste and means of the owner, or in the case of the monks, the donor, of the rosary. The most common rosary consists of beads made from cocoa-nut shell, darkened by steeping in oil, and turned on a lathe into ovoid, spherical or discoid beads. Beads are also turned from the black heart wood of a certain tree, from the bones and tusks of elephants, the horn of the bison, &c. The rosaries of varnished pellets, noted in my previous paper,<sup>1</sup> are also not uncommon. Light and tiny rosaries of amber, &c., are mostly used by ladies. A most rare and costly rosary found occasionally amongst the wealthy lay devotees is formed of compressed sweet scented flowers, pressed into cakes of a wood-like hardness and then turned on a lathe into beads. Such beads retain their perfume, it is said, for ages. This is the nearest approach to the more primitive rosary *viz.*, a garland of flowers.

The rosary formula in most common use amongst the Burmese Buddhists is, as previously noted by me, the pessimistic *Trividya*: ANITYA, DUKHA, AN-  
**The formulæ for the beads.** *ĀTMĀ*—‘*All is transitory, painful and unreal!*’

After this, the next most common use to which the rosary is put is to tell off the attributes of Buddha, and less frequently the attributes of The Three Holy Ones.

<sup>1</sup> The number in that case should also have been given as 108, the particular rosary seen by me at that time having been broken and incomplete.

The late king Thebaw's father was a great patron of the rosary, and used to bestow it freely as a royal gift.

5. *Græco-Roman Influence on the Civilization of Ancient India.* Supplementary Note.—By V. A. SMITH, Esq., M. R. A. S., INDIAN CIVIL SERVICE.

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

6. *De Ranunculaceis Indicis Disputationes*—*Scriptis* P. J. BRÜHL.

(Abstract.)

The present paper is the first of three which will deal chiefly with those species of Ranunculaceae which grow within the limits of the Indian Empire, and in those countries which can, or might be reached by travellers making India their base. We shall, however, also refer incidentally to species growing in more distant places, whenever the subject matter renders it desirable for us to do so. In the preface we have a few words to say about the material which has been the object of our investigations and about a certain abbreviated notation, grown out of one used by Professor Drude, which we have found convenient to use.

We have thought it expedient to devote a whole paper to *Aquilegia*, about which there appears to exist a good deal of confusion in various herbaria; thus in Boissier's *Supplementum* we find reference made, under the name of *Aquilegia pubiflora*, to a form which is only indirectly related to that Wallichian species. When endeavouring to bring order and law into the chaos of Indian forms, we found ourselves compelled to extend our studies over the whole genus. The American specimens in the Calcutta Herbarium are, however, not numerous enough, to write a detailed monograph of the whole of the species, although their number is sufficiently large to investigate their true relationships and come to certain definite conclusions with respect to the degree of variability exhibited by the species which group themselves round *A. formosa*.

We have consequently concentrated our attention chiefly on the group of species or varieties which arrange themselves round the typical *A. vulgaris* as a centre and, as it appears, as a parent form. We may also state that our investigation, which has, of course, been directed more especially to the Indian *Aquilegias*, has led us to the same result at which Hooker and Thomson arrived years ago when studying European and Asiatic *Aquilegias* in connection with the publication of the *Flora Indica*; that is to say, all the so-called Himalayan and

European, together with several Siberian species are only varieties which branch off from the genuine *Aquilegia vulgaris* and which, notwithstanding a frequently striking diversity in aspect, are still connected with the parent form by traceable links. Such connecting links exist especially in that region where the Himalaya, the Kara Korum, the Kwenlun, and the Hindu Kush meet, a fact which is not without significance. We are convinced that the number of species has been unduly multiplied by botanists who, having a sharper eye for differences where they exist than for intermediate forms in which those differences do not exist, attribute too great importance to characters which, in the nature of things, are essentially variable. We shall, however, not follow up the subject any further, but confine ourselves to stating the main results to which our investigation of the genus *Aquilegia* has led us. They are the following:—

(1) Neither the presence nor absence, nor the nature of the indumentum of the vegetative parts can serve as specific characters.

(2) The leaves are so variable as regards degree of division and shape and size of leaflets, that it is absolutely impossible to separate species by them.

(3) All parts of the flower which have reference to cross-fertilization by insects are essentially variable.

(4) The close relationship of the various forms of *Aquilegia* explains the ease with which they form hybrids.

(5) Plants, the same in all essential characters, may originate in regions which are widely apart, not only from the same parent form, but also from essentially different varieties.

(6) Forms belonging to the same variety may sometimes be found in distant places in consequence of some younger variety reverting to the parent type in regions into which the latter has not penetrated directly.

(7) The genus *Aquilegia* is one of the more recent among *Ranunculaceæ*, being probably derived from the parent form of *Isopyrum grandiflorum* and *Isopyrum microphyllum*, and exhibiting also relationships to *I. anemonoides* and *I. biternatum*.

(8) The genus *Aquilegia* appears to have originated in Eastern Asia, and spread from its birth-place in two streams, one invading Europe and spreading into the Himalaya along the ranges which form the western boundary of the ancient Gobi Sea, the other overrunning North-America and forking off through the hills of China proper towards the eastern termination of the Himalaya.

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



## 7. Notes on the Banks of the Hugli in 1495.—By PANDIT HARAPRASÁD SHÁSTRÍ.

The writings and researches of Messrs. Blochmann, Long, Marshman, Ganrdás Bysák, and, last though not the least, of Mr. Wilson our Philological Secretary, have roused an interest in the Antiquities of the Capital of the British Empire, and the places in its vicinity, and people are doing their best to search into old records in order to bring new and interesting facts to light, and as an humble worker in the same field, I beg to approach you, though with diffidence, with a paper on the subject.

In the course of my search for Sanskrit Manuscripts I came across in a rather out of the way corner of Bengal, viz., far in the Barasat Sub-Division, two bundles of Bengali Manuscripts. One of the bundles proved on examination to be the "*Manasár Bhásán*," by the joint authorship of Kshemánanda and Ketakádás; the other bundle contained three works, the first is a copy of the "*Manasar Bhásán*," the second a work on *Manasá*, or the Goddess of serpents, by a perfectly unknown author named Bipradás. This work is incomplete. It has only 31 leaves without the first page; and the third is also an incomplete copy of the same work without the first page. The first 45 pages of the second fragment are written on old paper, and in old handwriting, and the rest with a new pagination is written on more modern paper and in newer handwriting.

The name of Bipradás as a Bengali poet, is not at all known. In both the copies he gives copious information about himself, about the time in which he wrote, and the circumstances under which the book was written. He belonged to the Rárhíya distribution of Brahmans in Bengal; he was a descendant of *Bátsya Muni*, and the village which his Bengali ancestors obtained from the descendants of Rájá Kdiśúr who brought the five Brahmans in Bengal, was *Pippalai*. He professed the *Sáma Veda* in its *Kauthuma Sákhá*. He lived from his earliest childhood at *Baṭagrám* near *Báduriá*. The readings of the two copies of the name *Báduriyá* do not agree. In one place it is distinctly *Báduriá* and in another it is *Namuryá*. The year is indicated by the words *सिद्धु रन्दु वेद मही* that is ১৪৯৭. By the well-known rule of inverting the digits we come to the Saka year 1417, and this is corroborated by the fact that the author mentions Hussain Shah as the reigning Sultan of Bengal. Saka 1417 is 1495 A. D., that is, three years before Vasco de Gama landed at Calicut. Chaitanya was then only ten years of age. The writer says that the Goddess of serpents inspired him in a dream to write a poem in her honour. This is the stereotyped way of pleading divine inspiration for writing poetry. It is a fact, however, that the worship of the goddess

of serpents was very prevalent in those days. It was an easy way for Brahmans to get into fortune. In Chaitanya's early youth people advised him to take to the worship of this goddess if he wanted wealth. But he refused to listen to them. The examination of a few pages shews that Bipradás possessed poetical powers of no mean order, and that he knew much of serpents and their life-history. The portion of the book, with which we are concerned, is where he describes the voyage of *Chánd Sadágar*, who hated the goddess of serpents and did his best to put a stop to her worship, but after much persecution by the avenging goddess, was at last obliged to submit to her worship. His voyage commences at Champáinagar which is sometimes identified with Champánagar, the modern Bhagalpur.\* His small fleet consisting of seven vessels passed by Raj-ghat, which had not yet got its modern name Rajmahal; then it passed by Rámeśvara and Dharma-khán, places which cannot be identified, before it came to where the Ajaya meets the Bhágirathí. Passing by a small place named Ujáin where a *melá* is still held annually, the fleet came to the confluence of the Sívá with the Bhágirathí: then the fleet anchored at Indra Ghát near Catwa. Catwa is still one of the chief places of trade in the district of Burdwan, and the Purgana in which it is situated is called Indráni. Indra Ghát means one of the 12 Gháts in the Purganna Indráni, both the Purgana and the Ghát deriving their names from the worship of Indra. The author says that the merchant worshipped Indra at this place. Pandit Rámgati Nyáyaratna, the historian of Bengali literature, speaks of an Indreśvar Siva in this Purgana, from which it may be inferred that, as in other parts of India, the primitive worship of the rain-god gave way to that of the more popular gods Siva, Vishnu, &c., which was very prevalent in those days. Then the fleet passed by the well-known places named Nadiya, Ambua (modern Calna) Fuliá, on the other side of the river, Guptipará and Mirzápur, and came at last to Trivení, the famous junction of the three rivers. In this list, Mirzápur is nearest to Navadvípa, then Calna, then Fuliá, then Guptipará and after that Trivení. The writer puts Mirzápur last which is curious. At Trivení the Sadágar lands to have a look at Satgaon, the great emporium of trade. Then follows a description of Satgaon and its wealth. Hindus and Muhamadans lived in peace and enjoyed equally the prosperity of the city and its surrounding country. The merchant stopped there for two days and then recommenced his downward voyage. The first place after

\* There are many places in Bengal which claim the honor of being the birth place of Chánd and each has some authority to support its claim.

passing Trivení, was Kumárhatta, an important Bráhmanic settlement of very ancient date. Its modern name is Hálisahar in the district of 24 Purganahs. Kumárhatta was on the left; on the right however, he saw Hugli, modern Hugli. It was at this place that the Portuguese settled early in the 16th century to have a share of the commerce of Satgaon. Hugli was even before the settlement of the Portuguese, a place of some importance, otherwise the Portuguese would not have settled there. Some people think that the name Hugli was given to the place by the Portuguese, its ancient name being Golin. But Bipradás who writes before the arrival of the Portuguese in India, mentions it by its proper name Hugli. Then it mentions on the left Bhátpará, and on the right Boro. Chinsura and Chandannagar are not mentioned at all. Bhátpará is a very ancient settlement of Rárhíya Brahmans. The Vaidika Brahmans of Bhátpará who now occupy a prominent position in Bengal were not as yet settled at the place. Boro is now a very insignificant place lying within the French territory of Chandannagar, with a local goddess Káli named Borái Chaḡḡí. On the other side of Boro is mentioned Kánkinará, which also is now an insignificant place. The mention of these small places in preference to others of more importance in modern times, shews that the text of the book has not been altered in copying. In fact in a rare work like this the chances of interpolation and tampering with the text are much less than in the case of well-known books which enjoy great popularity. Then on the east are mentioned Mulájore and Gáñḡuliá, places which still exist, and contain old Bráhmanic settlements, and on the west Paikpára, which is a very insignificant hamlet now, to the south of Telinipará, and Bhadrésvar, a well-known place for trade in grains. Then on the two sides of the river are described two villages, *viz.*, Chámpdáni and Ichápur, places which are still well-known in Bengali Society. Then on the Eastern side of the river is mentioned a place named Bánkibázár—which was anciently a place of some importance, as in the year 1725 A. D. the Ostend East Indian Company, established by Charles VI, the Emperor of Germany, father of the celebrated Maria Theresa, made their factory at this place. For eight years they carried on a lucrative trade at Bánkibázár, but were expelled from the Indian soil in the year 1733 by the united efforts of the English at Calcutta, the Dutch at Chinsurá and the Fouzdára of Hugli. The exact site of the factory and of Bánkibázár was long a matter of speculation, but the present manuscript settles it, as being on the other side of Chámpdáni. It is in fact situated two miles to the north of Barackpur on the river, and it belongs to Annapurná Deví of Calcutta. Beyond Bánkibázár, but on the other side of the river, is mentioned the celebrated *Nimái*

*Tírtha*, in which was situated the holy *Nim*\* tree which was supposed to produce the red *Jabá*.† It was a small place of pilgrimage, and is still regarded as a *Ghat* of the Ganges specially holy.

Then comes *Dvigánga*, a double river, because a branch of the *Sarasvatí* fell here into the Ganges and is still known as the *Baidyabátír Khál*. There is a small place here which still is known as *Diggánga* and gives its name to a family of *Bráhmans* who live there. Then the merchant passes by *Chának*, which is wrongly supposed to derive its name from *Job Charnock*, the founder of *Calcutta*. It is a much older place than *Job Charnock* and a old settlement of Hindu *Bhadraloks*. Here is mentioned the *Buraniár Des*? It may be the region of floods or it may mean the region inhabited by बुड़निया people, *i. e.*, the divers. The first meaning appears to give a better sense as below *Chának* the country is low. On the other side of *Chának* are mentioned *Rámnán*, *Akná* and *Máheśa*, but *Srírámpur* is not mentioned. *Máheśa* had an image of *Jaganuáth*, the priest of which in *Chaitanya's* time was *Kamalákar Pippaláyí*, a man belonging to the same family with the author. Then on the *Chának* side of the river is mentioned *Khardaha*. It is one of the oldest and most respectable settlements of the *Rághiya Bráhmans*, one endogamous group of whom derives its name from this place. It had not yet become the chief place of *Chaitanya Vaishnavism*: yet it is called *S'ripáth*, an epithet which is used as an honorific epithet for the residence of one's spiritual guide. *Khardaha* was perhaps the place where, the author's *Guru* resided. On the western bank are mentioned *Rishiya*, *Konnagar* and on the east *Sukchar*, *Kotrang*, *Kámárháti*, *Ariadaha* and *Ghusuri* are also mentioned before the fleet reaches *Chitpur*, with its ancient temple dedicated to the *Sarvamangalá Devi*. After passing *Chitpur* on the eastern side, mention is made of *Calcutta*. It is a mere mention, just as that of *Ariadaha* or *Ghusuri* or *Sukchar*. More prominent mention is made of course of *Betor*, on the other side of the fort, with its ancient temple of *Betúí Chanđí* where the merchant comes down to pay his homage to the Goddess, and where he and his men take some rest, to do some shopping and prepare their mid-day meal. *Betor* was a place of trade, and it seems to have had a market. It was to *Satgaon*, what *Zedda* is to *Mecca*. Passing by a place named *Dhalandá*, the name of which still survives in the *Dalaudá Lunatic Asylum* at *Alipur*, the fleet comes to *Kálíghát*, where the merchant offers his worship to the Goddess. Then he passes *Churághát*, which is perhaps *Churápára*, a market town a few miles below *Kálíghát* included within the *South Suburban Municipality*, *Jayadhúli*, *Dhanasthán*, and then comes to *Báruipur*. Near

\* *Malia Azadiracta*.

† The *China rose*.

Báruipur was a whirlpool sacred to Káli. There the Goddess of serpents tried to put the merchant into difficulty by raising a storm and sending an army of serpents of various size, colour and ferocity. But the merchant Chánd overcame all difficulties and continued his downward voyage. Then he entered into the river Huniá and reached Chhatrabhog, a place mentioned in other ancient Bengali works. He performed all the sacred duties enjoined in the Shástras for performance at a place of pilgrimage. He took a large quantity of fresh water in his vessel from a pool named Badariká Kuṇḍa. Passing it he entered the Purgana of Hátiagarh, so well known in the history of Pir Goráchánd and in Musalmani Bengali literature. It was here that the Pir received a mortal wound from his Hindu opponents—Ákánanda and Bákánanda. From Hatia- garh the fleet entered Satamukhí, *i. e.*, the hundred streams, and thence Chaumukhí,—the four streams. Before entering the great ocean he worshipped Sankar Mádhav and performed his religious duties on the sea shore.

Some question may arise as to the authenticity of the information given in Bipradas's work. Those who are disposed to consider Bipra- dás's work as authentic may yet contend that though his information is meagre at the commencement of the voyage, as also at the end, he is very elaborate between Sátgaon and Kálíghát, and this is an indication that some verses may have been interpolated. But there is an explanation for this. Bipradás belonged to Báduriya Baṭagrám in the Basírhát Sub- division, and if he ever came to bathe in the Ganges, he came to this part of the country and so he knew it better. It is also to be noted that the Pippaláis *i. e.*, the family to which he belonged had a settlement at Máhes and Ákná where one of them held the high position of a priest to the local Jagannáth. The absence of any mention of places, noted in the history of Chaitanya's religion and for European commerce, puts the authenticity of the information given in the book beyond question.



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LIST OF MEMBERS  
OF THE  
ASIATIC SOCIETY OF BENGAL.  
ON THE 31ST DECEMBER 1891.

LIST OF OFFICE-BEARERS AND MEMBERS OF  
COUNCIL FOR THE YEAR 1891.

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R. = Resident. N. R. = Non-Resident. A. = Absent. N. S. = Non-Subscribing  
L. M. = Life Member. F. M. = Foreign Member.

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N. B.—Members who have changed their residence since the list was drawn up are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alteration may be made in the subsequent edition. Errors or omissions in the following list should also be communicated to the *Secretaries*.

Members who are about to leave India and do not intend to return are particularly requested to notify to the *Secretaries* whether it is their desire to continue Members of the Society; otherwise, in accordance with Rule 40 of the Bye-Laws, their names will be removed from the list at the expiration of three years from the time of their leaving India.

| Date of Election. |      |   |
|-------------------|------|---|
| 1860 Dec. 5.      | R.   | Abdul-Latíf, Nawáb Bahádúr, c. i. e. <i>Calcutta</i> .  |
| 1888 Feb. 1.      | N.R. | Adamson, Major Charles Henry Ellison, m. s. c.,<br>Deputy Commissioner. <i>Sagging</i> .                            |
| 1889 Nov. 6.      | R.   | Adie, J. R., m. b., Surgeon, Eden Hospital. <i>Calcutta</i> .   |
| 1860 July 4.      | N.R. | Ahmad Khán, Bahádúr, Hon. Maulvi Sir Sayid,<br>k. c. s. i. <i>Aligarh</i> .   |
| 1888 April 4.     | R.   | Ahmud, Shams-ul-ulana Maulvi, Khán Bahádúr,<br>Arabic Professor, Presidency College. <i>Calcutta</i> .              |
| 1872 April 3.     | N.R. | Ashán-ullah, Khán Bahádúr, Nawáb. <i>Dacca</i> .  |
| 1888 Feb. 1.      | N.R. | Alcock, Alfred William, m. b., Surgeon Naturalist,<br>Marine Survey Department.                                     |
| 1884 Mar. 5.      | L.M. | Áli, Sir Áli Qadr Syud Hassan, Nawáb Bahádúr,<br>k. c. i. e. <i>Murshedabad</i> .                                   |
| 1874 June 3.      | R.   | Amír Áli, Hon. c. i. e., m. a. Barrister-at-Law,<br>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> .   |
| 1890 July 2.      | N.R. | Arnold, Thomas Walker, B. A., M. R. A. S., Pro-<br>fessor, Muhammadan Anglo-Oriental College.<br><i>Aligarh</i> .   |
| 1869 Feb. 3.      | N.R. | Attar Singh, Bahádúr, Mahámahopádhyaýa Sirdár,<br>Sir, k. c. i. e., m. u. f., Chief of Bhadour.<br><i>Ludiana</i> . |
| 1889 Aug. 29.     | N.R. | Aziz-ud-din Ahmad, Deputy Collector and Magis-<br>trate. <i>Garhwal</i> .   |
| 1870 Feb. 2.      | L.M. | Baden-Powell, Baden Henry, c. i. e., c. s. <i>Europe</i> .  |

| Date of Election. |      |   |
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| 1891 Mar. 4.      | N.R. | Baillie, D. C., c. s. <i>Naini Tal.</i>   |
| 1891 April 1.     | N.R. | Baker, E. C. S. <i>North Cachar.</i>  |
| 1865 Nov. 7.      | N.S. | Ball, Valentine, M. A., F. R. S., F. G. S. <i>Europe.</i>   |
| 1889 May 1.       | R.   | Banerji, Hon. Dr. Gurudás, M. A., D. L., Judge, High Court. <i>Calcutta.</i>                      |
| 1869 Dec. 1.      | L.M. | Barker, R. A., M. D., Civil Surgeon. <i>Serampore.</i>  |
| 1877 Jan. 17.     | N.R. | Barman, Kishor Kumár Rádhá Dev, Juvráj of Hill Tipperah. <i>Tipperah.</i>                         |
| 1885 Nov. 4.      | R.   | Barman, Dámudar Dás. <i>Calcutta.</i>   |
| 1887 Aug. 3.      | R.   | Basu, Haricharan. <i>Calcutta.</i>  |
| 1864 Sept. 7.     | A.   | Beames, John, C. S. <i>Europe.</i>  |
| 1878 Sept. 25.    | N.R. | Beighton, T. D., c. s., Judge. <i>Dacca.</i>  |
| 1876 Nov. 15.     | N.R. | Beveridge, Henry, C. S. <i>Berhampur.</i>   |
| 1878 Oct. 4.      | R.   | Bhakta, Krishna Gopál. <i>Calcutta.</i>   |
| 1879 Mar. 5.      | N.R. | Biddulph, Col. J., B. S. C. <i>Ajmere.</i>  |
| 1884 Jan. 2.      | A.   | Bidie, Surgeon-General G., C. I. E., F. L. S., M. B. <i>Europe.</i>                               |
| 1884 Feb. 6.      | N.R. | Bigg-Wither, Major A. C., B. A., A. I. C. E. <i>Quetta.</i>                                       |
| 1885 Mar. 4.      | N.R. | Bilgrámi, Syud Ali, B. A., A. R. S. M., F. G. S. <i>Hyderabad.</i>                                |
| 1886 Aug. 4.      | N.R. | Bingham, Major Charles Thomas, B. S. C., Conservator of Forests. <i>Moulmein.</i>                 |
| 1857 Mar. 4.      | L.M. | Blanford, H. F., A. R. S. M., F. R. S., F. G. S. <i>Europe.</i>                                   |
| 1859 Aug. 3.      | L.M. | Blanford, W. T., A. R. S. M., F. R. S., F. G. S., F. R. G. S., F. Z. S. <i>Europe.</i>            |
| 1885 Mar. 4.      | R.   | Bolton, C. W., C. S. <i>Calcutta.</i>   |
| 1890 July 2.      | R.   | Bonnerjee, Womes Chunder, Barrister, Middle Temple. <i>Calcutta.</i>                              |
| 1880 Nov. 3.      | N.R. | Bose, Pramatha Náth, B. SC., F. G. S., Geological Survey of India.                                |
| 1890 Dec. 3.      | N.R. | Bose, Rai Nali Naksha, Bahádur, Chairman, Burdwan Municipality. <i>Burdwan.</i>                   |
| 1876 Nov. 15.     | N.R. | Bowie, Colonel M. M., Inspector General of Police, C. P. <i>Nagpur.</i>                           |
| 1876 May 4.       | N.R. | Bradshaw, Surgeon-Colonel A. F., Honorary Surgeon to the Viceroy M. D., C. B. <i>Rawal Pindi.</i> |
| 1860 Mar. 7.      | L.M. | Brandis, Sir Dietrich, K. C. I. E., C. I. E., PH. D., F. L. S., F. R. S. <i>Europe.</i>           |
| 1891 Nov. 4.      | N.R. | Brown, Dr. E. H. <i>Puri.</i>   |
| 1887 May 4.       | R.   | Burál, Nobinchánd, Solicitor. <i>Calcutta.</i>  |
| 1862 Feb. 5.      | L.M. | Bysack, Gaurdás. <i>Calcutta.</i>   |
| 1879 April 2.     | R.   | Calcutta, The Rt. Rev. the Lord Bishop of. <i>Calcutta.</i>                                       |
| 1881 Feb. 2.      | N.R. | Carter, Philip John, Deputy Conservator of Forests. <i>Tharrawaddy.</i>                           |
| 1890 June 4.      | N.R. | Chakravarti, Man Mohan, M. A., B. L., Deputy Magistrate. <i>Puri.</i>                             |

| Date of Election. |      |   |
|-------------------|------|---|
| 1889 April 3.     | R.   | Chunder, The Hon'ble Gonesh Chunder, Solicitor. <i>Calcutta.</i>  |
| 1881 Mar. 2.      | N.R. | Channing, Francis Chorley, c. s. <i>Hoshiarpur.</i>   |
| 1891 Mar. 4.      | R.   | Chatterjee, Dr. Aghore Chunder. <i>Calcutta.</i>  |
| 1861 Mar. 1.      | N.R. | Chaudhuri, Harachandra, Zemindar. <i>Sherpur, Mymensingh.</i>   |
| 1880 Nov. 3.      | N.R. | Chaudhuri, Rái Khirod Chandra. Deputy Inspector of Schools, Sonthal Pergunnahs. <i>Dumka.</i>           |
| 1886 April 7.     | N.R. | Chaudhuri, Rádhaballabha. <i>Sherpur, Mymensingh.</i>   |
| 1885 Feb. 4.      | N.R. | Chaudhuri, Rájá Suryakánta, Bahádur. <i>Mymensingh.</i>   |
| 1890 Feb. 5.      | A.   | Chuckerbutty, A. Goodeve, B. C. S. <i>Europe.</i>   |
| 1889 Sept. 26.    | N.R. | Chuckerbutty, Rájá Ramranjan, Bahádur. <i>Hitampur, Beerbhoom.</i>                                      |
| 1885 April 1.     | A.   | Clark, H. Martyn, M. B. <i>Europe.</i>  |
| 1877 Aug. 30.     | A.   | Clarke, Lieut.-Col. Henry Wilberforce, B. E. <i>Europe.</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>Lucknow.</i>   |
| 1888 Nov. 1.      | N.R. | Collett, Brigadier General Henry, C. B., F. L. S. <i>Shillong, Assam.</i>                               |
| 1889 Nov. 6.      | A.   | Colville, William Brown. <i>Europe.</i>   |
| 1886 Aug. 26.     | F.M. | Condenhove, Count H., Attaché Austro-Hungarian Embassy. <i>Tokio.</i>                                   |
| 1890 Dec. 3.      | N.R. | Connan, William, C. E., Public Works Department. <i>Cuttack.</i>  |
| 1874 Nov. 4.      | F.M. | Constable, Archibald, M. I. C. E. <i>Europe.</i>  |
| 1884 Aug. 6.      | R.   | Cotes, Everard Charles, Indian Museum. <i>Calcutta.</i>   |
| 1876 Mar. 1.      | R.   | Crawford, James, B. A., C. S., Barrister-at-Law, Offg. District and Sessions Judge. <i>Hughli.</i>      |
| 1887 Aug. 25.     | R.   | Criper, William Risdon, F. C. S., F. I. C., A. R. S. M. <i>Kossipore.</i>                               |
| 1877 June 6.      | R.   | Croft, The Hon. Sir A. W., K. C. I. E., M. A., Director of Public Instruction, Bengal. <i>Calcutta.</i> |
| 1874 Mar. 4.      | R.   | Crombie, Surgeon Major Alexander, M. D., Presidency General Hospital. <i>Calcutta.</i>                  |
| 1888 Dec. 5.      | N.R. | Crooke, William, B. A., C. S., Magistrate and Collector. <i>Mirzapur.</i>                               |
| 1873 Aug. 6.      | R.   | Cunningham, Surgeon-Major David Douglas. Honorary Surgeon to the Viceroy. <i>Calcutta.</i>              |
| 1873 Dec. 3.      | N.R. | Dames, Mansel Longworth, C. S., Asst. Commissioner. <i>Dera Ghazi Khan.</i>                             |
| 1877 June 6.      | N.R. | Darbhanga, Sir Luchmessur Sing, Bahádur, K. C. I. E., Mahárajá of. <i>Darbhanga.</i>                    |
| 1865 June 7.      | N.R. | Dás, Rájá Jaykrishna, Bahádur, C. S. I. <i>Moradabad.</i>   |
| 1879 April 7.     | N.R. | Dás, Rám Saran, M. A., Secy., Oudh Commercial Bank, Limited. <i>Fyzabad, Oudh.</i>                      |

| Date of Election. |           |      |  |
|-------------------|-----------|------|--|
| 1885              | May 6.    | N.R. | Dé, Rájá Baikuntánáth, Bahádúr. <i>Balasore.</i>   |
| 1889              | May 1.    | N.R. | Delawar Hosaen Ahmed, Meerza. <i>Bhagulpur.</i>  |
| 1862              | May 7.    | N.R. | Dhanapati Singh Dughar, Rai Bahádúr. <i>Azimganj.</i>  |
| 1877              | July 4.   | R.   | Diler Jang, Nawáb Syad Ashgar Ali, Khán Bahádúr, C. S. I. <i>Calcutta.</i>   |
| 1890              | July 2.   | R.   | Donaldson, P. <i>Calcutta.</i>   |
| 1886              | June 2.   | R.   | Doyle, Patrick, C. E., F. G. S., M. E. I. A. <i>Calcutta.</i>  |
| 1887              | Nov. 2.   | N.R. | Driver, Walter Henry Parker. <i>Ranchi, Lohardugga.</i>  |
| 1889              | Jan. 2.   | N.R. | Dudgeon, Gerald Cecil, Lebong Tea Company. <i>Darjeeling.</i>  |
| 1879              | Feb. 5.   | N.R. | Duthie, J. F., Director, Government Botanical Survey, Northern India. <i>Saharanpur.</i>   |
| 1877              | Aug. 30.  | N.R. | Dutt, Kédarnáth, Depy. Collector. <i>Poores.</i>   |
| 1890              | Sept. 25. | N.R. | Dutt, Romesh Chunder, B. O. S., Barrister-at-Law, Middle Temple, Magistrate and Collector. <i>Midnapur.</i>  |
| 1870              | Mar. 9.   | L.M. | Edinburgh, H. R. H. The Duke of. <i>Europe.</i>  |
| 1871              | Dec. 2.   | N.R. | Eliot, J., M. A., Meteorological Reporter to the Govt. of India. <i>Simla.</i>   |
| 1886              | Jan. 6.   | R.   | Elson, Samuel R., Bengal Pilot Service. <i>Calcutta.</i>   |
| 1891              | Nov. 4.   | N.R. | Ernst, Diego. <i>Delhi.</i>  |
| 1879              | July 2.   | R.   | Finucane, M., C. S., Director of Agriculture, Bengal. <i>Calcutta.</i>   |
| 1869              | Sept. 1.  | A.   | Fisher, John Hadden, C. S. <i>Europe.</i>  |
| 1886              | April 7.  | N.R. | Fleet, John Faithfull, C. I. E., C. S. <i>Bijapur, Bombay.</i>   |
| 1876              | July 5.   | N.R. | Foulkes, The Rev. Thos., F. L. S., M. R. A. S., F. R. G. S. <i>Salem, Madras Presidency.</i>   |
| 1880              | April 7.  | N.R. | Gajapati, Ananda Rám, K. C. I. E., Rájá of Vizianagram. <i>Vizianagram.</i>  |
| 1873              | Dec. 3.   | N.R. | Gamble, J. S., M. A., Conservator of Forests. <i>Dehra Dún.</i>  |
| 1859              | Aug. 3.   | L.M. | Gastrell, General James Eardley. <i>Europe.</i>  |
| 1867              | Dec. 4.   | A.   | Gay, E., M. A., F. R. A. S. <i>Europe.</i>   |
| 1889              | Jan. 2.   | R.   | Ghose, Jogendrachandra, M. A., B. L. <i>Calcutta.</i>  |
| 1883              | Aug. 30.  | R.   | Ghose, Manmohan. <i>Calcutta.</i>  |
| 1889              | Mar. 6.   | R.   | Ghoshá, Bhupendra Sri. <i>Calcutta.</i>  |
| 1869              | Feb. 3.   | R.   | Ghoshá, Pratápchandra, B. A. <i>Calcutta.</i>  |
| 1884              | Dec. 3.   | N.R. | Giles, George M. J., M. B., F. R. C. S., Civil Medical Officer, Lawrence Military Asylum. <i>Sanawar.</i>  |
| 1886              | Sept. 30. | N.R. | Gimlette, Surgeon George Hart Desmond, Bengal Medical Service, M. D., M. CH., M. R. C. S., L. S. A., Goona Political Agency. <i>Central India.</i> |
| 1861              | Feb. 5.   | N.S. | Goodwin-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 Rev. Dr. Paul, S. J., Archbishop of Calcutta.   |



| Date of Election. |      |  |
|-------------------|------|--|
| 1882 May 3.       | R.   | Golám Sarwar, Maulavi. <i>Calcutta.</i>  |
| 1881 Mar. 2.      | R.   | Gosáin, Hem Chunder. <i>Calcutta.</i>  |
| 1876 Nov. 15.     | N.R. | Grierson, George Abraham, c. s. <i>Gya</i>   |
| 1885 Dec. 2.      | N.R. | Griesbach, C. L., c. I. E., F. G. S., Deputy Superintendent, Geological Survey of India.   |
| 1886 Mar. 3.      | N.R. | Gupta, Asutosh, c. s., Assistant Magistrate and Collector. <i>Krishnaghur.</i>   |
| 1888 July 4.      | R.   | Gupta, Rajanikánta. <i>Calcutta.</i>   |
| 1889 June 5.      | N.R. | Hamilton, Rev. Walter A., Chaplain. <i>Agra.</i>   |
| 1883 Jan. 3.      | A.   | Harding, Francis Henry, B. A., c. s. <i>Europe.</i>  |
| 1890 June 4.      | R.   | Heilgers, Robert Philip, Consul for H. I. M. the Emperor of Austria and Hungary, Knight of the Imperial Order of the Iron Crown, Commandeur Ordre Impériale de Médjidié, F. R. G. S., F. R. S. S. <i>Calcutta.</i> |
| 1875 Mar. 3.      | A.   | Hendley, Surgeon Major Thomas Holbein, c. I. E. <i>Europe.</i>   |
| 1890 April 2.     | R.   | Hickson, F. G. <i>Calcutta.</i>  |
| 1872 Dec. 5.      | R.   | Hoernle, A. F. R., PH. D., Principal of the Calcutta Madrasa.  |
| 1878 Mar. 6.      | N.R. | Hoey, W., c. s. <i>Banda.</i>  |
| 1886 June 2.      | R.   | Hogg, Alexander. <i>Calcutta.</i>  |
| 1891 July 1.      | R.   | Holland, Thomas H. <i>Calcutta.</i>  |
| 1884 Mar. 5.      | N.R. | Hooper, John, c. s., Secretary, Board of Revenue. <i>Allahabad. N.-W. P.</i>   |
| 1873 Jan. 2.      | L.M. | Houstoun, G. L., F. G. S. <i>Europe.</i>   |
| 1863 Jan. 15.     | N.R. | Howell, Mortimer Sloper, c. s., c. I. E. <i>Shahjahanpur.</i>  |
| 1878 Sept. 25.    | N.R. | Hughes, G., c. s., Deputy Commissioner. <i>Ludhiana.</i>   |
| 1867 Aug. 7.      | N.R. | Hughes, T. W. H., A. E. S. M., F. G. S., Superintendent, Geological Survey of India.   |
| 1884 May. 2.      | N.R. | Hussein, Syud, B. A., Secy. to Nizam of Hyderabad's Council. <i>Hyderabad.</i>   |
| 1890 Dec. 3.      | R.   | Hyde, Rev. Henry Barry, M. A., Bengal Ecclesiastical Establishment. <i>Calcutta.</i>   |
| 1866 Mar. 7.      | F.M. | Irvine, William, c. s. <i>Europe.</i>  |
| 1884 May 2.       | N.R. | Iskander Ali Mirza, Prince. <i>Murshedabad.</i>  |
| 1880 Dec. 1.      | A.   | Jackson, William Grierson, c. s. <i>Europe.</i>  |
| 1869 Aug. 4.      | R.   | Jahán Qadr Muhammad Wáhid Ali, Bahádur, Prince. <i>Garden Reach. Calcutta.</i>   |
| 1879 Mar. 5.      | R.   | Jarrett, Lt.-Col. H. S., B. S. C., Secy. to the Board of Examiners. <i>Calcutta.</i>   |
| 1881 Feb. 2.      | N.R. | Jenkins, Major Thomas Morris, M. S. C. Deputy Commissioner. <i>Tavoy.</i>  |
| 1889 Mar. 6.      | R.   | Jobbins, William Henry, Principal, Government School of Art. <i>Calcutta.</i>  |
| 1873 Dec. 3.      | N.R. | Johore, H. H. the Mahárájá of, K. C. S. I. <i>New Johore, Singapore.</i>   |

| Date of Election. |      |  |
|-------------------|------|--|
| 1882 Mar. 1.      | N.R. | Kennedy, Pringle, M. A. <i>Mozufferpur.</i>  |
| 1874 Dec. 2.      | N.R. | Khudá Baksh, Khán Bahádur, Maulavi. <i>Bankipur.</i>   |
| 1884 Nov. 5.      | N.R. | Kitts, Eustace John, C. S. <i>Moradabad.</i>   |
| 1867 Dec. 4.      | R.   | King, Brigade Surgeon G., C. I. E., M. B., F. L. S.,<br>Supdt., Royal Botanic Garden. <i>Sibpur.</i>   |
| 1881 Mar. 2.      | N.R. | King, Lucas White, B. A., LL. B., C. S., Deputy Com-<br>missioner. <i>Dehra Ismail Khan.</i>   |
| 1862 Jan. 15.     | R.   | King, W., B. A., D. SC., Director, Geological Survey<br>of India. <i>Calcutta.</i>   |
| 1891 Feb. 4.      | N.R. | Kupper, Hon. Lala Bunbehari. <i>Burdwan.</i>   |
| 1890 April 2.     | A.   | Lake Philip, B. A., (Cantab.), Geological Survey of<br>India. <i>Europe.</i>   |
| 1889 July 3.      | N.R. | Lal, Pandit Brij Bukhan. Public Works Depart-<br>ment. <i>Kurnal, Punjab.</i>  |
| 1887 May 4.       | L.M. | Lanman, Charles R., Corresponding Secretary of<br>the American Oriental Society, Professor of San-<br>skrit in Harvard College. <i>Cambridge, Mass. U.<br/>S. America.</i> |
| 1891 June 3.      | N.R. | Lathom-Browne, Rev. D. G., Chaplain. <i>Port Blair.</i>  |
| 1877 Sep. 27.     | N.R. | La Touche, James John Digges, B. A., C. S., Collector<br>and Magistrate. <i>Aligarh.</i>   |
| 1889 Mar. 6.      | N.R. | La Touche, Thomas Henry Digges, M. A. Deputy<br>Superintendent, Geological Survey of India.  |
| 1889 Nov. 6.      | R.   | Lee, W. A. <i>Calcutta.</i>  |
| 1881 Mar. 2.      | N.R. | Lee, J. Bridges, M. A., F. G. S., F. C. S., F. Z. E.,<br>Barrister-at-Law. <i>Lahore.</i>  |
| 1880 July 7.      | A.   | Lewis, Rev. Arthur, B. A. <i>Europe.</i>   |
| 1889 Feb. 6.      | R.   | Little, C., M. A., Bengal Education Department<br><i>Calcutta.</i>   |
| 1886 Sep. 30.     | R.   | Luson, Hewling, C. S., Under Secretary, Govern-<br>ment of Bengal. <i>Calcutta.</i>  |
| 1869 July 7.      | R.   | Lyall, Charles James, B. A., C. S. Secretary, Govern-<br>ment of India, Home Department. <i>Calcutta.</i>  |
| 1870 April 7.     | L.M. | Lyman, B. Smith. <i>Philadelphia, Pa., U. S. America.</i>  |
| 1884 Dec. 3.      | N.R. | McCabe, R. B., C. S., Deputy Commissioner. <i>Tezpur,<br/>Assam.</i>   |
| 1868 Dec. 2.      | A.   | Macauliffe, Michael, B. A., C. S. <i>Europe.</i>   |
| 1848 April 5.     | L.M. | Maclagan, General Robert, R. E., LL. D., F. R. S. E.,<br>F. R. G. S. <i>Europe.</i>  |
| 1873 Dec. 3.      | R.   | MacLeod, Brigade Surgeon Kenneth, M. D. <i>Cal-<br/>cutta.</i>   |
| 1880 May 5.       | A.   | MacLeod, Roderick Henry, C. S. <i>Europe.</i>  |
| 1891 Feb. 4.      | N.R. | Macpherson, Duncan J., C. S. <i>Noakholly.</i>   |
| 1881 July 6.      | R.   | Mahomed Firukh Sháh, Prince. <i>Calcutta.</i>  |
| 1886 Jan. 6.      | N.R. | Mahomed Latif Khán, Sayyid, Khán Bahádur.<br><i>Gurdaspur.</i>   |

| Date of Election. |      |  |
|-------------------|------|--|
| 1882 Aug. 2.      | R.   | Mahomed Yusoof, Hon. Maulavi. <i>Calcutta.</i>   |
| 1888 July 4.      | N.R. | Mahomed Zainool Abideen Khán Bahádur Feroze Jung, Nawab Syud (Nizamut Family). <i>Murshedabad.</i> |
| 1867 April 3.     | R.   | Mainwaring, Lieutenant-General George Byres, s. c. <i>Serampur.</i>                                |
| 1889 Jan. 2.      | R.   | Maliáh, Kumár Rameswár. <i>Howrah.</i>   |
| 1891 Nov. 4.      | R.   | Mallik, H. C. <i>Calcutta.</i>   |
| 1869 Sept. 1.     | R.   | Mallik, Yadulál. <i>Calcutta.</i>  |
| 1889 Mar. 6.      | A.   | Mann, John, M. A. <i>Europe.</i>   |
| 1869 July 7.      | N.R. | Markham, Alexander Macaulay, C. S., F. R. G. S., Divisional Judge. <i>Meerut.</i>                  |
| 1886 Aug. 26.     | N.R. | Meade, Capt. Malcolm John, s. c., Political Agent. <i>Bhopawar.</i>                                |
| 1886 Mar. 3.      | L.M. | Mehtá, Rustomjee Dhunjeebhoy. <i>Calcutta.</i>   |
| 1884 Nov. 5.      | N.R. | Middlemiss, C. S., A. B., Assistant Superintendent, Geological Survey of India.                    |
| 1871 Sept. 6.     | A.   | Miles, Colonel S. B., B.O. s. c. <i>Europe.</i>  |
| 1884 Sept. 3.     | R.   | Miles, William Harry. <i>Calcutta.</i>   |
| 1870 July 6.      | R.   | Miller, A. B., B.A., Barrister-at-Law, Official Trustee. <i>Calcutta.</i>                          |
| 1874 May 6.       | N.R. | Minchin, F. J. V. <i>Aska, Ganjam.</i>   |
| 1890 Dec. 3.      | N.R. | Mitra, Varana Charana. Joint Magistrate. <i>Begusserat, Monghyr.</i>                               |
| 1876 Dec. 6.      | N.R. | Mockler, Col. E., Political Agent. <i>Muscat.</i>  |
| 1886 May 5.       | A.   | Molesworth, Capt. E. H. Commandant, Police Levy. <i>Europe.</i>                                    |
| 1881 May 4.       | A.   | Molloy, Lient.-Col. Edward, 5th Goorkhas. <i>Europe.</i>   |
| 1864 Nov. 2.      | N.R. | Muir, J. W., M. A., C. S. <i>Etawah.</i>   |
| 1879 May 7.       | R.   | Mukerjea, Bhudeva, C. I. E. <i>Chinsurah.</i>  |
| 1867 Mar. 6.      | R.   | Mukerjea, Rájá, The Hon. Pearimohan, C. S. I., M. A. <i>Uttarpara.</i>                             |
| 1885 July 1.      | R.   | Mukerjea, Nilmani, Professor, Sanskrit College. <i>Calcutta.</i>                                   |
| 1890 July 2.      | R.   | Mukharji, T. N. <i>Calcutta.</i>   |
| 1886 May 5.       | R.   | Mukhopádhyaýa, Asntosh, M. A., F. R. A. S., F. R. S. E. <i>Calcutta.</i>                           |
| 1887 May 4.       | R.   | Munro, Thomas R., Port Commissioners Department. <i>Calcutta.</i>                                  |
| 1885 June 3.      | N.R. | Naemwoollah, Maulavi, Depy. Magte. <i>Moradabad.</i>   |
| 1887 June 1.      | N.R. | Narain, Ráo Govind Ráo. <i>Allahabad.</i>  |
| 1876 May 4.       | R.   | Nash, A. M., M. A., Inspector of European Schools, Bengal. <i>Calcutta.</i>                        |
| 1881 Nov. 2.      | R.   | Nicóville, L. de., F. E. S. <i>Calcutta.</i>   |
| 1889 Aug. 29.     | L.M. | Nimmo, John Duncan. <i>Calcutta.</i>   |
| 1887 April 6.     | N.R. | Noetling, Fritz, Ph. D. Palæontologist to the Geological Survey of India.                          |

| Date of Election. |      |   |
|-------------------|------|---|
| 1869 July 7.      | N.R. | Nursing Ráo, A. V., Ráo Bahádur, F. R. A. 9. <i>Visagapatam.</i>  |
| 1885 Feb. 4.      | R.   | Nyáyaratna, Pandit Mahámahopádhyaýa Maheshchandra, c. I. E. <i>Calcutta.</i>                              |
| 1879 Aug. 28.     | F.M. | Oldham, Brigade-Surgeon C. F., F. R. G. S. <i>Europe.</i>   |
| 1883 Dec. 1.      | R.   | Oldham, R. D., A. R. S. M., F. G. S., Deputy Superintendent, Geological Survey of India. <i>Calcutta.</i> |
| 1883 Aug. 30.     | F.M. | Oliver, Edw. Emmerson, M. I. C. E. <i>Europe.</i>   |
| 1885 Feb. 4.      | N.R. | Oliver, James William, Forest Dept. <i>Burmah.</i>  |
| 1887 July 6.      | R.   | Oung, Moug Hla, Financial Department, Government of India. <i>Calcutta.</i>                               |
| 1880 Aug. 4.      | L.M. | Pandia, Pandit Mohanlál Vishnulál, F. T. S., Member and Secy., Royal Council of Meywar. <i>Udaipur.</i>   |
| 1888 Feb. 1.      | L.M. | Pandit, Hon. Ajodhianath. <i>Allahabad.</i>   |
| 1880 Jan. 7.      | N.R. | Pargiter, Frederick, E., B. A., C. S. <i>Rajshahye.</i>   |
| 1862 May 7.       | L.M. | Partridge, Surgeon-Major Samuel Bowen, M. D., <i>Europe.</i>  |
| 1871 Dec. 6.      | N.R. | Peal, S. E. <i>Sibsagar, Assam.</i>   |
| 1873 Aug. 6.      | R.   | Pedler, Alexander, F. C. S., Professor of Chemistry, Presidency College. <i>Calcutta.</i>                 |
| 1888 June 6.      | L.M. | Pennell, Aubray Percival, B. A., C. S. <i>Rangoon.</i>  |
| 1865 Sept. 6.     | N.R. | Peppé, T. F., Tiril Tea Estate. <i>Ranchi, Lohardugga.</i>  |
| 1881 Aug. 25.     | R.   | Percival, Hugh Melville, M. A., Professor, Presidency College. <i>Calcutta.</i>                           |
| 1877 Aug. 1.      | N.R. | Peters, Surgeon Major C. T., M. B. <i>Bijapur, Bombay.</i>  |
| 1889 Nov. 6.      | N.R. | Phillott, Capt. D. C., Adjutant 3rd Panjab Cavalry. <i>Dera Ismail Khan.</i>                              |
| 1890 Mar. 5.      | N.R. | Pilcher, Deputy Surgeon General Jesse Griggs. <i>Nagpur.</i>  |
| 1889 Mar. 6.      | R.   | Prain, David, M. A., M. B., L. B. C. S., I. R. S. E., I. L. S., Royal Botanic Garden. <i>Sibpur.</i>      |
| 1889 Mar. 6.      | N.R. | Prasad, Hanuman, Raes and Zemindar. <i>Chunar.</i>  |
| 1889 Nov. 6.      | N.R. | Prasada, Pandit Jwála, M. A., Assistant Commissioner. <i>Rai Bareli.</i>                                  |
| 1881 Feb. 2.      | N.R. | Prideaux, Colonel William Francis, B. S. C. <i>Sialkot, Punjab.</i>                                       |
| 1880 April 7.     | N.R. | Rai, Bipina Chandra, B. L. <i>Rannaghat, Nuddea.</i>  |
| 1887 May 4.       | A.   | Ráy Prasannakumár, D. Sc., (Lond. and Edin.) Professor, Presidency College. <i>Europe.</i>                |
| 1889 June 5.      | R.   | Raye, Brigade Surgeon Daniel O'Connell, M. D. <i>Calcutta.</i>  |
| 1880 Aug. 4.      | N.R. | Reynolds, Herbert William Ward, c. s. <i>Banda.</i>   |

| Date of Election. |      |  |
|-------------------|------|--|
| 1884 Mar. 5.      | R.   | Risley, H. H., B. A., C. S. <i>Calcutta.</i>   |
| 1860 Jan. 3.      | N.R. | Rivett-Carnac, John Henry, C. I. E., F. S. A., C. S.,<br>Opium Agent. <i>Ghazipur.</i>                                   |
| 1889 June 5.      | R.   | Rowe, F. J., M. A., Bengal Education Department.<br><i>Calcutta.</i>   |
| 1888 July 4.      | N.R. | Roy, Kirán Chándra, Zemindar. <i>Narail, Jessore.</i>  |
| 1888 June 6.      | R.   | Roy, Kumár Denendro Nárayán. <i>Calcutta.</i>  |
| 1890 Mar. 5.      | N.R. | Roy, Mahárájá Girjanath. <i>Dinajpur.</i>  |
| 1888 June 6.      | R.   | Roy, Peary Mohun. <i>Calcutta.</i>   |
| 1888 Sep. 27.     | N.R. | Roy, Upendra Chándra, Zemindar. <i>Narail, Jessore.</i>  |
| 1885 Mar. 4.      | R.   | Rustomjee, H. M. <i>Calcutta.</i>  |
| 1889 June 5.      | N.R. | Sadler, Major J. Hayes, B. S. C. <i>Kotah.</i>   |
| 1887 June 1.      | N.R. | Sandberg, Rev. Graham, B. A., Barrister-at-Law,<br>Inner Temple. Chaplain. <i>Roorkee.</i>                               |
| 1872 Dec. 4.      | R.   | Sarasvati, Pandit, Pránnáth, M. A., B. L. <i>Bho-<br/>wanipur.</i>   |
| 1867 April 3.     | R.   | Sarkár, Dr. Mahendralál, C. I. E. <i>Calcutta.</i>   |
| 1885 Mar. 4.      | R.   | Sarvádrikári, Rájkumár, Rai Bahádur. <i>Calcutta.</i>  |
| 1885 Feb. 4.      | R.   | Sástri, Pandit Haraprasád, M. A. <i>Calcutta.</i>  |
| 1888 Feb. 1.      | A.   | Sclater, William Lutley., M. A. <i>Europe.</i>   |
| 1884 April 2.     | N.R. | Scotland, John Parry, C. E., Ex. Engineer. <i>Midna-<br/>pur.</i>  |
| 1874 July 1.      | R.   | Scully, Dr. John. <i>Calcutta.</i>   |
| 1888 Sept. 27.    | R.   | Sen-Gupta, Kali Prasanna. <i>Calcutta.</i>   |
| 1886 Mar. 3.      | N.R. | Sen, Hirálal, Excise Department. <i>Gya.</i>   |
| 1885 April 1.     | N.R. | Sen, Yadunáth. <i>Balia via Cuttack.</i>   |
| 1885 April 1.     | R.   | Sen, Narendranáth. <i>Calcutta.</i>  |
| 1879 Jan. 8.      | N.R. | Sewell, R., M. C. S. <i>Bellary.</i>   |
| 1888 April 4.     | N.R. | Shástri, Haridas Bhattáchárya, Sankhya Shastri,<br>M. A. Director of Public Instruction, Jaypur<br>State. <i>Jaypur.</i> |
| 1891 June 3.      | N.R. | Shillingford, F. A. <i>Purneah.</i>  |
| 1882 May 3.       | N.R. | Shyamadáś, Mahámahopadhyáya Kaviráj, Private<br>Secy. to H. H. the Mahárájá of Udaipur. <i>Udaipur.</i>                  |
| 1878 April 3.     | A.   | Simson, A. <i>Europe.</i>  |
| 1887 April 6.     | R.   | Simpson, Dr. W. J., Health Officer to the Municipal<br>Corporation. <i>Calcutta.</i>                                     |
| 1889 Nov. 6.      | N.R. | Simpson, Edmund James, L. R. C. P. E., F. L. P. S. G.,<br>L. M. G. E., Civil Surgeon. <i>Rai Bareli.</i>                 |
| 1884 Sept. 3.     | R.   | Singh, Kumár Indrachandra, of Paikparah. <i>Cal-<br/>cutta.</i>  |
| 1882 June 7.      | N.R. | Singh, Mahárájá Sir Harendra Kishore, K. C. I. E.<br><i>Bettiah.</i>   |
| 1890 Sept. 25.    | R.   | Singh, Kumar Sarat Chandra. <i>Calcutta.</i>   |
| 1878 Oct. 4.      | N.R. | Singh, Rájá Lachman. <i>Agra.</i>  |
| 1882 Aug. 2.      | N.R. | Singh, Rájá Rám Narain. <i>Khyrah, Monghyr.</i>  |
| 1880 June 2.      | N.R. | Singh, Thákur Garuradhawaya Prasád, Rájá of<br>Beswan, Beswan Fort. <i>Aligarh.</i>                                      |

| Date of Election. |      |  |
|-------------------|------|--|
| 1889 Aug. 29.     | N.R. | Singh, H. H. Prabhunarain, Bahádur, Mahárájá of Benares.   |
| 1889 Nov. 6.      | N.R. | Singh, Hon. Rájá Rameshwara, Bahádur. <i>Darbhanga.</i>  |
| 1859 Aug. 3.      | R.   | Siñha, Baláichánd. <i>Calcutta.</i>  |
| 1872 Aug. 5.      | N.R. | Skrefsrud, Rev. L. O., Indian Home Mission to the Santháls. <i>Rampur Hát.</i>   |
| 1891 Dec. 2.      | F.M. | Smith, A. Mervyn., C. E., F. S. A. <i>Europe.</i>  |
| 1885 Nov. 4.      | A.   | Smith, N. F. F. <i>Europe.</i>   |
| 1874 June 3.      | N.R. | Smith, Vincent Arthur, C. S., Collector. <i>Mozuffarnagar.</i>   |
| 1890 April 2.     | A.   | Solf, Dr. W. H., German Consulate General. <i>Europe.</i>  |
| 1891 Nov. 4.      | N.R. | Stein, Dr. M. A. <i>Lahore.</i>  |
| 1872 July 3.      | N.R. | Stephen, Carr, B. L. <i>Lahore.</i>  |
| 1880 Nov. 3.      | A.   | Sturt, Lieut. Robert Ramsay Napier, B. S. C., Panjab Frontier Force. <i>Europe.</i>  |
| 1884 Mar. 5.      | A.   | Swinhoe, Lieut.-Col. C., B. S. C. <i>Europe.</i>   |
| 1864 Aug. 11.     | R.   | Swinhoe, W., Attorney-at-Law. <i>Calcutta.</i>   |
| 1880 Nov. 3.      | A.   | Swynnerton, Rev. Charles. <i>Europe.</i>   |
| 1868 June 3.      | R.   | Tagore, The Hon. Mahárájá Sir Jotendra Mohun, Bahádur, K. C. S. I. <i>Calcutta.</i>  |
| 1865 Sept. 6.     | R.   | Tawney, C. H., C. I. E., M. A., Principal, Presidency College. <i>Calcutta.</i>  |
| 1884 May 5.       | N.R. | Taylor, W. C., Settlement Officer. <i>Khurda.</i>  |
| 1878 June 5.      | N.R. | Temple, Capt. R. C., S. C. <i>Mandalay, Burma.</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>  |
| 1847 June 2.      | L.M. | Thuillier, Major-Genl. Sir Henry Edward Landor, B. A., C. S. I., F. R. S. <i>Europe.</i>   |
| 1889 Mar. 6.      | R.   | Thuillier, Colonel. H. R., B. E., Surveyor General of India. <i>Calcutta.</i>  |
| 1891 Nov. 4.      | R.   | Thurston, Edgar. <i>Calcutta.</i>  |
| 1871 April 5.     | F.M. | Trefftz, Oscar. <i>Europe.</i>   |
| 1861 June 5.      | L.M. | Tremlett, James Dyer, M. A., C. S. <i>Europe.</i>  |
| 1890 Feb. 5.      | N.R. | Venis, Arthur, M. A., Former Boden Sanskrit scholar, Oxford, Principal, Sanskrit College, Benares. Professor, Queen's College. <i>Benares.</i> |
| 1885 May 6.       | R.   | Verdean, Ivan. <i>Calcutta.</i>  |
| 1886 Sep. 30.     | N.R. | Waddell, Dr. Laurence Austine, M. B., Superintendent of Vaccination. <i>Darjeeling.</i>  |
| 1889 Nov. 6.      | R.   | Walsh, Dr. J. H. Tull, Indian Medical Service. <i>Calcutta.</i>  |
| 1865 May 3.       | R.   | Waterhouse, Col. James, B. S. C., Assistant Surveyor General, Survey of India. <i>Calcutta.</i>  |

| Date of Election. |      |   |
|-------------------|------|---|
| 1887 Oct. 6.      | F.M. | Watson, Lieut. Edward Yerbury. <i>Europe.</i>   |
| 1874 July 1.      | N.R. | Watt, Dr. George, C. I. E., Reporter on Economic Products. <i>Simla.</i>                    |
| 1880 Feb. 4.      | R.   | Wilson, The Hon. Arthur, Judge, High Court. <i>Calcutta.</i>                                |
| 1891 May 6.       | R.   | Wilson, Charles Robert, M. A., Bengal Educational Service. <i>Calcutta.</i>                 |
| 1870 Jan. 5.      | R.   | Wood-Mason, James, Superintendent, Indian Museum. <i>Calcutta.</i>                          |
| 1873 Aug. 6.      | N.R. | Woodthorpe, Col. Robert Gossett, C. B., R. E., Deputy Quarter-Master-General. <i>Simla.</i> |



## SPECIAL HONORARY CENTENARY MEMBERS.

| Date of Election. |   |
|-------------------|---|
| 1884 Jan. 15.     | Dr. Ernst Haeckel, Professor in the University of Jena.   |
| 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.     | M. 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., C. I. E., M. A., D. C. E., 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. D., D. C. L., F. R. S., F. G. S. <i>Kew.</i>     |
| 1853 April 6. | Major-General H. C. Rawlinson, K. C. B., D. C. L., F. R. S., <i>London.</i>               |
| 1858 July 6.  | B. H. Hodgson. <i>Europe.</i>   |
| 1860 Mar. 7.  | Professor Max Müller. <i>Oxford.</i>  |
| 1860 Nov. 7.  | Dr. Aloys Sprenger. <i>Heidelberg.</i>  |
| 1860 Nov. 7.  | Dr. Albrecht Weber. <i>Berlin.</i>  |
| 1868 Feb. 5.  | Major-General Sir A. Cunningham, R. E., K. C. I. E., C. S. I., C. I. E. <i>Europe.</i>    |
| 1872 May 1.   | Sir G. B. Airy, K. C. B., M. A., D. C. L., LL. D., F. R. S. <i>London.</i>                |
| 1872 June 5.  | Prof. T. H. Huxley, LL. D., PH. D., F. R. S., F. G. S., F. Z. S., F. L. S. <i>London.</i> |
| 1875 Nov. 3.  | Dr. O. Böhtlingk. <i>Leipzig.</i>   |
| 1875 Nov. 3.  | Prof. J. O. Westwood. <i>Oxford.</i>  |
| 1876 April 5. | Dr. Warner Siemens. <i>Berlin.</i>  |
| 1879 June 4.  | Prof. E. B. Cowell, D. C. L. <i>Cambridge.</i>  |
| 1879 June 4.  | Dr. A. Günther, V. P. E. S. <i>London.</i>  |
| 1879 June 4.  | Dr. J. Janssen. <i>Paris.</i>   |
| 1879 June 4.  | Prof. H. Milne-Edwards. <i>Paris.</i>   |
| 1879 June 4.  | Prof. P. Regnaud. <i>Lyons.</i>   |
| 1879 June 4.  | E. Renan. <i>Paris.</i>   |
| 1881 Dec. 7.  | Professor Hermann L. E. Helmholtz. <i>Berlin.</i>   |
| 1881 Dec. 7.  | Dr. Rudolph v. Roth. <i>Tübingen.</i>   |
| 1881 Dec. 7.  | Sir William Thompson, <i>Knt.</i> , LL. D., F. R. S., F. R. S. E., <i>Glasgow.</i>        |
| 1883 Feb. 7.  | W. T. Blanford, A. R. S. M., F. R. S., F. G. S., F. R. G. S., F. Z. S. <i>London.</i>     |
| 1883 Feb. 7.  | Alfred Russell Wallace, F. L. S., F. R. G. S. <i>Parkstone, Dorsetshire.</i>              |
| 1883 Feb. 7.  | Prof. William Dwight Whitney. <i>Newhaven, Connecticut, U. S. A.</i>                      |



## CORRESPONDING MEMBERS.

| Date of Election. |   |
|-------------------|---|
| 1844 Oct. 2.      | Macgowan, Dr. J. <i>Europe.</i>             |
| 1856 July 2.      | Krämer, A. von. <i>Alexandria.</i>          |
| 1856 „ 2.         | Porter, Rev. J. <i>Belfast.</i>             |
| 1861 July 3.      | Gösche, Dr. R. <i>Berlin.</i>               |
| 1862 Mar. 3.      | Murray, A., Esq. <i>London.</i>             |
| 1866 May 7        | Schlagintweit, Prof. E. von. <i>Berlin.</i> |

## ASSOCIATE MEMBERS.

|               |   |
|---------------|---|
| 1874 April 1. | Lafont, Rev. Fr. E., s. J., c. I. E. <i>Calcutta.</i> |
| 1875 Dec. 1.  | Bate, Rev. J. D. <i>Allahabad.</i>                    |
| 1875 „ 1.     | Maulavi Abdul Hai, Madrasah. <i>Calcutta.</i>         |
| 1882 June 7.  | Giles, Herbert. <i>Europe.</i>                        |
| 1883 Feb. 7.  | Rodgors, C. J. <i>Amritsar.</i>                       |
| 1884 Aug. 6.  | Moore, F., F. R. S., F. L. S. <i>London.</i>          |
| 1885 Dec. 2.  | Führer, Dr. A. <i>Lucknow.</i>                        |
| 1886 Dec. 1.  | Dás, Saratchandra c. I. E. <i>Calcutta.</i>           |

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.

The following members will be removed from the next member list of the Society under the operation of the above Rule :

R. H. Macleod, Esq., c. s.  
 Capt. E. H. Molesworth.  
 Lieut. R. R. N. Sturt., B. S. C.  
 Rev. C. Swynnerton.

## LOSS OF MEMBERS DURING 1891.

## BY RETIREMENT.

J. H. Apjohn, Esq., M. I. C. E.  
 Bábu Govinda Kumár Chaudhuri.  
 F. S. Growse, Esq., C. S.  
 A. O. Hume, Esq., C. S.  
 Denzil Ibbetson, Esq., C. S.  
 Jagánnath Khanah, Esq.  
 W. H. Lee, Esq., C. S.  
 Lieutenant-Colonel C. R. Macgregor.  
 C. A. Samuells, Esq., C. S.  
 Thakur Surj Bukhsh Singh.

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## BY DEATH.

*Ordinary Members.*

Surgeon-Major A. Barclay.  
 C. W. Baumgarten, Esq.  
 John Boxwell, Esq., C. S.  
 Dr. Otakeara Feismantila.  
 Rájá Rájendralála Mitra, L. L. D., C. I. E.  
 Lieutenant-Colonel Sir O. B. St. John, R. E., K. C. S. I.

*Corresponding Member.*

Rev. H. Baker.

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## BY REMOVAL.

*Under Rule 40.*

A. C. Carlleyle, Esq.  
 H. B. Medlicott, Esq.  
 E. M. Sage, Esq.  
 C. J. Sheridan, Esq.  
 Colonel W. B. Thompson, B. S. C.  
 J. Westland, Esq., C. S.

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[APPENDIX.]

ABSTRACT STATEMENT  
OF  
RECEIPTS AND DISBURSEMENTS  
OF THE  
ASIATIC SOCIETY OF BENGAL  
FOR  
THE YEAR 1891.

# STATEMENT

## *Asiatic Society*

### Dr.

|  |     |     |     | To ESTABLISHMENT.             |                 |                 |             |
|--|-----|-----|-----|-------------------------------|-----------------|-----------------|-------------|
| Salaries   | ... | ... | ... | Rs.                           | 3,193           | 5               | 11          |
| Commission   | ... | ... | ... | ...                           | 415             | 8               | 8           |
|  |     |     |     |                               | <u>3,553</u>    | <u>14</u>       | <u>7</u>    |
|  |     |     |     | To CONTINGENCIES.             |                 |                 |             |
| Stationery   | ... | ... | ... | ...                           | 49              | 13              | 0           |
| Lighting   | ... | ... | ... | ...                           | 61              | 8               | 0           |
| Taxes  | ... | ... | ... | ...                           | 819             | 0               | 0           |
| Postage  | ... | ... | ... | ...                           | 662             | 14              | 7           |
| Freight  | ... | ... | ... | ...                           | 8               | 15              | 6           |
| Meeting  | ... | ... | ... | ...                           | 82              | 8               | 0           |
| Miscellaneous  | ... | ... | ... | ...                           | 130             | 2               | 9           |
|  |     |     |     |                               | <u>1,814</u>    | <u>13</u>       | <u>10</u>   |
|  |     |     |     | To LIBRARY AND COLLECTIONS.   |                 |                 |             |
| Books  | ... | ... | ... | ...                           | 2,372           | 13              | 3           |
| Local Periodicals                                    | ... | ... | ... | ...                           | 31              | 0               | 0           |
| Binding  | ... | ... | ... | ...                           | 501             | 15              | 3           |
|  |     |     |     |                               | <u>2,905</u>    | <u>12</u>       | <u>6</u>    |
|  |     |     |     | To PUBLICATIONS.              |                 |                 |             |
| Journal, Part I                                      | ... | ... | ... | ...                           | 860             | 4               | 0           |
| Journal, Part II                                     | ... | ... | ... | ...                           | 2,752           | 13              | 11          |
| Proceedings  | ... | ... | ... | ...                           | 832             | 13              | 0           |
|  |     |     |     |                               | <u>4,445</u>    | <u>14</u>       | <u>11</u>   |
| To Printing charges of Circulars, Receipt forms, &c. |     |     |     |                               | 155             | 2               | 0           |
|  |     |     |     |                               | <u>12,875</u>   | <u>9</u>        | <u>10</u>   |
| To PERSONAL ACCOUNT (Writes off and Miscellaneous)   |     |     |     |                               | .....           | 174             | 0 6         |
|  |     |     |     | To EXTRAORDINARY EXPENDITURE. |                 |                 |             |
| Auditor's Fee  | ... | ... | ... | ...                           | 100             | 0               | 0           |
| Barisal Guns   | ... | ... | ... | ...                           | 0               | 4               | 0           |
|  |     |     |     | To Balance                    | .....           | 1,40,749        | 12 8        |
|  |     |     |     |                               | <u>1,53,899</u> | <u>11</u>       | <u>0</u>    |
|  |     |     |     | Total Rs.                     | ...             | <u>1,53,899</u> | <u>11 0</u> |

No. 1.  
of Bengal.

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**Cr.**

By Balance from last report ... .. Rs. 1,37,611 14 10

BY CASH RECEIPTS.

|   |     |     |     |       |    |    |
|---|-----|-----|-----|-------|----|----|
| Publications sold for cash                                      | ... | ... | Rs. | 1,081 | 2  | 11 |
| Interest on Investments   | ... | ... |     | 5,466 | 0  | 0  |
| Rent of two rooms on the ground floor of the Society's premises | ... | ... |     | 720   | 0  | 0  |
| Advances recovered  | ... | ... |     | 3     | 5  | 6  |
| Miscellaneous   | ... | ... |     | 117   | 6  | 6  |
|   |     |     |     | 7,387 | 14 | 11 |

BY PERSONAL ACCOUNT.

|                 |     |     |     |       |    |   |
|-----------------|-----|-----|-----|-------|----|---|
| Admission Fees  | ... | ... | ... | 576   | 0  | 0 |
| Subscriptions   | ... | ... | ... | 7,566 | 0  | 0 |
| Sales on credit | ... | ... | ... | 378   | 12 | 0 |
| Miscellaneous   | ... | ... | ... | 379   | 1  | 3 |
|                 |     |     |     | 8,899 | 13 | 3 |

Total Income ... .. 16,287 12 2

WILL. KING,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Total Rs. ... 1,53,899 11 0

Examined and found correct.  
MEUGENS & KING,  
Auditors.

**STATEMENT**  
*Oriental Publication Fund in Account*

Dr.

| To CASH EXPENDITURE.                               |     |               |             |
|--|-----|---------------|-------------|
| Printing charges ... ..                            | Rs. | 7,225         | 7 0         |
| Editing charges ... ..                             |     | 2,939         | 7 6         |
| Binding ... ..                                     |     |               | 0 12 0      |
| Salaries ... ..                                    |     | 1,373         | 8 4         |
| Freight ... ..                                     |     | 37            | 8 0         |
| Stationery ... ..                                  |     | 16            | 8 0         |
| Postage ... ..                                     |     | 627           | 9 9         |
| Contingencies ... ..                               |     | 34            | 1 9         |
| Commission on collecting bills ... ..              |     | 65            | 10 11       |
|  |     | 12,370        | 9 3         |
| To PERSONAL ACCOUNT (Writes off and Miscellaneous) |     |               | 8 1 0       |
| Total Expenditure ... ..                           |     |               | 12,378 10 3 |
| To Balance... ..                                   |     |               | 1,171 10 0  |
|  |     | Total Rs. ... | 13,550 4 3  |

**STATEMENT**  
*Sanskrit Manuscript Fund in Account*

Dr.

| To CASH EXPENDITURE.                         |     |                          |            |
|--|-----|--------------------------|------------|
| Salaries ... ..                              | Rs. | 1,156                    | 0 0        |
| Postage ... ..                               |     | 28                       | 2 8        |
| Contingencies ... ..                         |     | 44                       | 6 6        |
| Stationery ... ..                            |     | 2                        | 0 0        |
| Purchase of Manuscripts ... ..               |     | 491                      | 4 0        |
| Bonus given to an old servant retired ... .. |     | 240                      | 0 0        |
|  |     | Total Expenditure ... .. | 1,961 13 2 |
| To Balance ... ..                            |     |                          | 5,487 5 1  |
|  |     | Total Rs. ...            | 7,449 2 3  |

## No. 2.

*with the Asiatic Society of Bengal.*

| Cr.                             |     |               |                          |
|---------------------------------|-----|---------------|--------------------------|
| By Balance from last report ... | ... | ...           | Rs. 469 2 9              |
| BY CASH RECEIPTS.               |     |               |                          |
| Government allowance ...        | ... | Rs. 9,000 0 0 |                          |
| Publications sold for cash ...  | ... | 1,471 5 0     |                          |
| Advances recovered ...          | ... | 122 0 0       |                          |
|                                 |     |               | 10,593 5 0               |
| BY PERSONAL ACCOUNT.            |     |               |                          |
| Sales on credit ...             | ... | 2,487 12 6    |                          |
|                                 |     |               | 2,487 12 6               |
| Total Income ...                |     |               | 13,081 1 6               |
|                                 |     |               | Total Rs. ... 13,550 4 3 |

WILL. KING,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
MEUGENS & KING,  
*Auditors.*

## No. 3.

*with the Asiatic Society of Bengal.*

| Cr.                             |     |               |                         |
|---------------------------------|-----|---------------|-------------------------|
| By Balance from last report ... | ... | ...           | Rs. 4,214 2 3           |
| BY CASH RECEIPTS.               |     |               |                         |
| Government allowance ...        | ... | Rs. 3,200 0 0 |                         |
| Publications sold for cash ...  | ... | 3 0 0         |                         |
|                                 |     |               | 3,203 0 0               |
| BY PERSONAL ACCOUNT.            |     |               |                         |
| Sales on credit ...             | ... | 32 0 0        |                         |
|                                 |     |               | 32 0 0                  |
| Total Income ...                |     |               | 3,235 0 0               |
|                                 |     |               | Total Rs. ... 7,449 2 3 |

WILL. KING,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
MEUGENS & KING,  
*Auditors.*

# STATEMENT

## *Personal*

| Dr.   |     |            |               |
|---|-----|------------|---------------|
| To Balance from last report                 | ... | ...        | Rs. 2,318 1 0 |
| To CASH EXPENDITURE.                        |     |            |               |
| Advances for purchase of Sanskrit MSS., &c. |     | Rs. ....   | 4,335 5 0     |
| To Asiatic Society                          | ... | 8,809 13 3 |               |
| To Oriental Publication Fund                | ... | 2,487 12 6 |               |
| To Sanskrit MSS. Fund                       | ... | 32 0 0     |               |
|   |     | _____      | 11,419 9 9    |

Total Rs. ... 18,572 15 9



No. 4.

*Account.*

Cr.

|                              |     |     |            |       |   |   |            |
|------------------------------|-----|-----|------------|-------|---|---|------------|
| By Cash receipts             | ... | ... | Rs. 13,664 | 5     | 8 |   |            |
| By Asiatic Society           | ... | ... | ...        | 174   | 0 | 6 |            |
| By Oriental Publication Fund | ... | ... | ...        | 8     | 1 | 0 |            |
|                              |     |     |            | <hr/> |   |   | 13,846 7 2 |

| By Balances.      | Due to the Society. |    |    | Due by the Society. |    |    |           |
|-------------------|---------------------|----|----|---------------------|----|----|-----------|
|                   |                     |    |    |                     |    |    |           |
| Members ...       | 5,335               | 5  | 7  | 128                 | 10 | 11 |           |
| Subscribers ...   | 73                  | 6  | 0  | 72                  | 7  | 0  |           |
| Employés ...      | 30                  | 0  | 0  | 250                 | 0  | 0  |           |
| Agents ...        | 169                 | 2  | 6  | 504                 | 8  | 0  |           |
| Miscellaneous ... | 292                 | 14 | 10 | 218                 | 10 | 5  |           |
|                   | <hr/>               |    |    | <hr/>               |    |    |           |
|                   | 5,900               | 12 | 11 | 1,174               | 4  | 4  |           |
|                   |                     |    |    |                     |    |    | 4,726 8 7 |

Total Rs. ... 18,572 15 9

WILL. KING,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
MEUGENS & KING,  
Auditors.

## STATEMENT

*Invest*

Dr.

|                                 |     | Nominal.         | Actual.       |
|---------------------------------|-----|------------------|---------------|
| To Balance from last report ... | ... | Rs. 1,38,900 0 0 | 1,38,543 5 3  |
| To Cash ...                     | ... | ...              | 6 8 10        |
| Total Rs. ...                   | ... | 1,38,900 0 0     | 1,38,549 14 1 |

*Permanent.*

| *Funds.             | Nominal. |   |   | Actual.  |    |   |
|---------------------|----------|---|---|----------|----|---|
| Asiatic Society ... | 1,35,600 | 0 | 0 | 1,35,133 | 0  | 0 |
| Trust Fund ...      | 1,300    | 0 | 0 | 1,295    | 12 | 9 |
|                     | 1,36,900 | 0 | 0 | 1,36,428 | 12 | 9 |

## STATEMENT

*Trust*

Dr.

|   |     |            |            |
|---|-----|------------|------------|
| To Balance (Servants' Pension Fund) ... | ... | ...        | 1,311 3 10 |
| Total Rs. ...                           | ... | 1,311 3 10 |            |

No. 5.  
*ments.*

|             |     |     |     | Cr.       |                  |               |  |
|-------------|-----|-----|-----|-----------|------------------|---------------|--|
|             |     |     |     | Nominal.  |                  | Actual.       |  |
| By Cash     | ... | ... | ... | Rs.       | 2,000 0 0        | 2,121 1 4     |  |
| By Balance* | ... | ... | ... | ...       | 1,86,900 0 0     | 1,86,428 12 9 |  |
|             |     |     |     | Total Rs. | ... 1,88,900 0 0 | 1,88,549 14 1 |  |

WILL. KING,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Examined and found correct.  
MEUGENS & KING,  
*Auditors.*

No. 6.  
*Fund.*

|                             |     |     |     | Cr.       |                |  |  |
|-----------------------------|-----|-----|-----|-----------|----------------|--|--|
| By Balance from last report | ... | ... | ... | Rs.       | 1,261 3 10     |  |  |
| By Interest on Investments  | ... | ... | ... | ...       | 50 0 0         |  |  |
|                             |     |     |     | Total Rs. | ... 1,311 3 10 |  |  |

WILL. KING,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Examined and found correct.  
MEUGENS & KING,  
*Auditors*

## STATEMENT

*Cash*

|                              |     | Dr. |     |                  |                    |
|------------------------------|-----|-----|-----|------------------|--------------------|
| To Balance from last report  | ... | ... | ... | Rs.              | 2,195 1 5          |
| <b>RECEIPTS.</b>             |     |     |     |                  |                    |
| To Asiatic Society           | ... | ... | ... | ...              | 7,887 14 11        |
| To Oriental Publication Fund | ... | ... | ... | ...              | 10,593 5 0         |
| To Sanskrit Manuscript Fund  | ... | ... | ... | ...              | 3,203 0 0          |
| To Personal Account          | ... | ... | ... | ...              | 13,664 5 8         |
| To Investment                | ... | ... | ... | ...              | 2,121 1 4          |
| To Trust Fund                | ... | ... | ... | ...              | 50 0 0             |
|                              |     |     |     | <b>Total Rs.</b> | <b>...</b>         |
|                              |     |     |     |                  | <u>89,214 12 4</u> |

## STATEMENT

*Balance*

|                     |     | Dr. |     |                  |                      |
|---------------------|-----|-----|-----|------------------|----------------------|
| To Cash             | ... | ... | ... | Rs.              | 7,564 10 3           |
| To Investment       | ... | ... | ... | ...              | 1,36,428 12 9        |
| To Personal Account | ... | ... | ... | ...              | 4,726 8 7            |
|                     |     |     |     | <b>Total Rs.</b> | <b>...</b>           |
|                     |     |     |     |                  | <u>1,48,719 15 7</u> |

No. 7.

*Account.*

Cr.

| EXPENDITURE.                 |     |     |     |     |                  |
|------------------------------|-----|-----|-----|-----|------------------|
| By Asiatic Society           | ... | ... | ... | ... | Rs. 12,975 13 10 |
| By Oriental Publication Fund | ... | ... | ... | ... | 12,370 9 3       |
| By Sanskrit Manuscript Fund  | ... | ... | ... | ... | 1,961 13 2       |
| By Personal Account          | ... | ... | ... | ... | 4,335 5 0        |
| By Investment                | ... | ... | ... | ... | 6 8 10           |
| By Balance                   | ... | ... | ... | ... | 7,564 10 3       |
| Total Rs. ...                |     |     |     |     | 39,214 12 4      |

WILL. KING,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

#

Examined and found correct.  
MEUGENS & KING,  
Auditors.

No. 8.

*Sheet.*

Cr.

|                              |     |     |     |     |                   |
|------------------------------|-----|-----|-----|-----|-------------------|
| By Asiatic Society           | ... | ... | ... | ... | Rs. 1,40,749 13 8 |
| By Oriental Publication Fund | ... | ... | ... | ... | 1,171 10 0        |
| By Sanskrit Manuscript Fund  | ... | ... | ... | ... | 5,437 5 1         |
| By Trust Fund                | ... | ... | ... | ... | 1,311 3 10        |
| Total Rs. ...                |     |     |     |     | 1,48,719 15 7     |

WILL. KING,  
Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.

Examined and found correct.  
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