



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.

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 Mukhopádhyáy, 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—1287). 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 [هنشاه الاعظم غياث الدنيا والدين ابوالمظفر
له وسلطانه في نوبة ايالة ملك ملوك الشرق والصين
دفاع دام علوه امر هذه العمارة الامين السهتسا
ح العاشر من شهر الله الاصم رجب سنة ثلث وثمانين وستمائة

(1.) "The mighty Shahansháh Ghiyāṣu-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 Jámí' Masjid at Garhmuktesar in the Merath 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 شانشاه (الشهتسا read المعظم غياث الدنيا والدين ابوالمظفر بدين
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. Blochmann, 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-s-Sín*"—"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 ايالة*,

* This expression is used by the Arabic historians and geographers with reference to Alexander's conquests in Asia ; see, e. g., Kāzvinī'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 هذيه* or *امر بهذه* - *الامين* 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 *فَعِيل*, may be appended in the masculine form to a feminine noun. The word *الشهنشاه* is doubtful. The *ة*, which is placed above the second *س*, looks more like *لا*, which, however, gives no sense. Neither of the *س*s 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 *لاصم*, "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, Selater 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:

		<i>For.</i>	<i>Against</i>	<i>Result.</i>
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 Kundá 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 Cowree 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 $1\frac{1}{4}$, $2\frac{1}{2}$, $3\frac{3}{4}$ 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
$\frac{1}{16}$	" $1\frac{1}{4}$ " ($\frac{1}{4}$ '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 Nâgas, 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 'kâkinis' 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.

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*presented by the respective Societies and Editors.*

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- Baltimore. Johns Hopkins University,—Circulars, Vol. X, No. 83.
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- 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.
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- 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.
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COLOMBO MUSEUM, CEYLON.

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GOVERNMENT OF BENGAL.

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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.

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

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UNITED STATES GEOLOGICAL SURVEY, WASHINGTON.

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YALE UNIVERSITY.

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 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-Fírúz 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 *Riyázu-s-Salátín*, which was sanctioned in 1887, and to discontinue the translation of the *Tuzuk-i-Jahángírí*, of which one fasciculus has been published.

The translation of the second volume of the *Aín-i-Akbarí*, 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. TABAQÁT-I-NÁŞIRÍ, (Index of persons and places) ; 2, PRÁKRITA LAKSHANA (English translation and Notes) ; 3, KÁTANTRA (introduction) ; 4, SÚSRUTA SAMHITÁ (English translation) ; 5, ÁPASTAMBA ŚRAUTA SÚTRA (Text) ; 6, LALITA VISTARA (English translation).

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

1. PRÁKRITÁDHYÁVA (Text and translation) ; 2, CHARAKA (English translation, with Notes) ; 3, NAQAID-UL-FARAZDAQ-JERIR (Text with English translations in prose and verse) ; 4, KÁLA VIVEKA (Text) ; 5, VEDÁNTA SÚTRA, Commentaries on, (Text) ; (two of these, *viz.*, ANUBHÁSHYAM and ŚRÍBHÁSHYAM, have been commenced) ; 6, YOGINI' TANTRA (Text) ; 7, KARANA GRANTHA (Text) ; 8, MUNTAKHABU-T-TAWARÍKH, Vol. I, (English translation) ; 9, TÁJ-UL-MAÁSIR (Text) ; 10, TÁRIKH-I-WASSAF (Text) ; 11, TÁRIKH-I-YÁMINÍ (English translation, with Notes) ; 12, JŅÁTÁDHARMAKATHÁ and VIPÁKA SÚTRA (Text) ; 13, SADDHARMA PUŅÐARÍKA (Text) ; 14, AL TABRÍZÍ'S Commentary (Text) ; 15, SVAYAMBHÚ PURÁNA (Text) ; 16, BAUDHÁYANÍYA ŚRAUTA SÚTRA, and HIRANYAKESÍ ŚRAUTA SÚTRA (Text) ; 17, AÍN-I-AKBARÍ, Vol. II, (English translation) ; 18, RIYÁZU-S-SALÁTÍN (Text and English translation) ; 19, BHATŲOTPALA'S Commentary on VARÁHA MIHIRA'S BRIHAT SAMHITÁ.

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-'Afif, 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 Diṇḍima*, a short work on the Vedanta philosophy, in verse, has been added to the work as an appendix. The editor Paṇḍit Váman S'ástrí, Upá-dhyáya of Islámpur in Bombay, has added a very large number of foot-notes 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 Ríg 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 CHINTÁMAṆI is an exhaustive work on Hindu rituals by Hemádrí the Court Paṇḍit 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 Kámakhyánátha Tarkavágíśa are now engaged with the second part of the third volume which relates to the *S'ráddha* ceremony. Nos. 746, 763, 774, Vol. III, Pt. II, Fasc. 5, 6, 7. Total *three* Fasc.

4. KÚRMA PURĀṆA, edited by Babu Nílmani Mukhopádhya, 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 Párijáta quotes from the Chaturvarga Chintámani 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-TĪKĀ 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 TĪKĀ, 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 Dharmottaráchárya who is reputed to be the founder of the Dharmottariya 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 KUSUMÁNJALI PRAKARAṆAM by Udayanáchárya. 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 Mahámahopádhya Chandrakánta Tarkálankára. 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. PARÁŚARA SMṚITI by the same learned editor, has advanced by three fasciculi, two belonging to the second volume treating of *Prāyaś-chitta*, and one to the third volume treating of *Vyavahāra*. The work is accompanied with the commentary of the great Mādhavāchārya 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. SĀMKHĀYANA S'RAUTA SŪTRA 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 Sāmkhāyana. No. 754, Vol. II, Fasc. 2. Total *one* Fasc.

11. ŚRĪ-BHĀSHYAM edited by Paṇḍit Rāmnāth Tarkaratna is a commentary on the Vedānta aphorisms of Vādarāyaṇa by Rāmānujāchārya, 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 Sāmkara with certain modifications. No. 737, Fasc. 2. Total *one* Fasc.

12. TAITTIRĪYA SAMHITĀ edited by Mahāmahopādhyāya Maheśachandra Nyāyaratna, C. I. E., has advanced by one fasciculus. It is the text of the Black Yajur Veda and is accompanied with the commentary of Mādhavāchārya. No. 744, Fasc. XXXIV. Total *one* Fasc.

13. TATVA-CHINTĀMAṆI, edited by Paṇḍit Kāmākhyanātha Tarkavāgīśa, 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. TULSĪ SATSAI, *i. e.*, seven hundred verses by Tulsīdās the great Hindī poet. Each verse contains a riddle and a double entendre, one meaning of which is a praise of Rāma. The work is being edited by Paṇḍit Bihārīlāl Chaube. It has advanced by two fasciculi. Nos. 739, 753, Fasc. 2, 3.

15. UVĀSAGADASĀO 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 Bābū Pratāpa Chandra Ghosha is a Tibetan translation of the Sata Sāhasrikā Prajñā Pāramitā or the Prajñā Pāramitā 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. BODHISATTVĀVADĀNA KALPALATĀ, 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 Lhá-sá. 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 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.  
 \* ———— :—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' Histoire 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 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.
- § 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 Chimmáji Ápté intimating that he had founded an "Ánandás'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 Ápté, 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 4½ 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 ½ 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. Sclater 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 Bavaoise, 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-Salátin* 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.

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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. Selater, 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 ballotted 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.

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### 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°.

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.
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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. Selater, 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 ballotted 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. Selater, 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.   | Mahámahopádhyáy Pandit Moheśá- |
| Bábú Gaur Dás Bysack.        | chandra Nyáyaratna.            |
| Dr. D. D. Cunningham.        | L. de Nicéville, Esq.          |
| Bábú Pratápa Chandra Ghosha. | Hon. Dr. Mahendra Lál Sarkár.  |
| Prince Jahán Qudr Muhammad   | Dr. J. Scully.                 |
| Wáhid Ali Bahádur.           | Pandit Hara Prasád Shástri.    |
| J. Mann, Esq.                | C. H. Tawney, Esq.             |
| Rájá Rájendra Lála Mitra.    | Colonel J. Waterhouse.         |
| Bábú Asutosh Mukhopádhyáy.   | J. Wood-Mason, Esq.            |

#### PHILOLOGICAL COMMITTEE.

|                               |                               |
|-------------------------------|-------------------------------|
| Nawáb Abdul Latif Bahádur.    | Bábú Nilmani Mukerji.         |
| J. Beames, Esq.               | Mahámahopádhyáy Pandit Moheśá |
| Bábú Gaur Dás Bysack.         | chandra Nyáyaratna.           |
| Dr. A. Führer.                | Captain D. C. Phillott.       |
| G. A. Grierson, Esq.          | Bábú Rajkumár Sarvádhyákari.  |
| Bábú Pratápa Chandra Ghosha.  | Sir Sayid Ahmad.              |
| Maulvi Khudá Baksh Khán Bahá- | Hon. Dr. Mahendra Lál Sarkár. |
| 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 ARCHÆOLOGICAL COMMITTEE.

|                              |                           |
|------------------------------|---------------------------|
| Hon. Justice Amir Ali.       | Mahámahopádhyay 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 Mukhopádhyáy.    |
| 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 Seances, 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. CCLXXXV.—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.
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# 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. Selater, 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. R. 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 Śāradā alphabet of Kashmīr. 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 Śāradā 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 *Nāvanītaka*, and consists of sixteen chapters (*adhyāya*). That it was written\* by a Buddhist, is seen from the initiatory salutation of the “Tathāgatas” 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) नमस्तथागतभ्यः ।

प्राक्प्रणीतेर्महर्षीणां योगमुख्यैस्समन्वितम् [1]

वक्ष्ये च सिद्धसंकर्षं नाम्ना वै नावनीतकम् ॥ [१॥]

(line 2) नाना व्याधिपरीतानां ढणां (\*स्त्रीणां)ञ्च यद्वितम् [1]

कुमाराणां हितं यच्च तत्सर्व्वमिह वक्ष्यते ॥

समासरतबुद्धीनां भिषजां प्रीतिवर्द्धनम् [1]

योगवाङ्मयतस्यापि विस्तरञ्च मनोनुगम् ॥ [२॥]

अध्यायं चूर्णयोगानां प्रथमं चात्र (line 3) वक्ष्यते [1]

द्वितीयं घृतपानानां तृतीयं तैलसञ्जितम् [1३॥]

चतुर्थं भिषकं नाम नानाव्याधिचिकित्सितम् [1]

पञ्चमं वस्त्रियोगानां रसायनविधानतः [1४॥] †

(line 4) सप्तमं च यवागूनां दृष्यमष्टममुच्यते [1]

नेत्रांजनानां नवमं दशमं केशरञ्जनम् [1५॥]

अभयाकल्पनामाख्यमत्रैकादशमुच्यते [1]

द्वादशं स्याच्छैलजतोश्चित्र (line 5) कस्य त्रयोदशम् [1६॥]

कुमारभृत्यमप्यत्र स्याच्चातुर्दशमिष्यते [1]

वन्ध्याचिकित्सिताख्यं च ज्ञेयं पञ्चदशं बुधैः [1७॥]

सुभगाचिकित्सिताख्यञ्च तथा षोडशकं मतम् [1]

इत्येते षोड (line 6) शब्दाया विज्ञेया नावनीतकम् [1८॥]

नेदं दद्यादपुत्राय न चाभ्रात्रे कथञ्चन [1]

अशिष्ये प्रसवो न स्यात्कर्त्तव्य इति मे मतिः [1९॥]

\* 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* दैश are omitted in the MS.

## Translation.\*

‘Salutation to the Tatháguas.—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 *chúrmas* or powders; it extends down to the obverse of the fourth leaf, where its end is indicated by the words नावनीतने चूर्षयौगास्तुमाप्ताः । प्रथमोऽध्यायस्तुमाप्तः 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: *vardhamánaka*, *shadyádika*, *tiktaka*, *vriśha-dvúdaśaka*, *arishṭa*, etc.

‘The second chapter on clarified butter extends to the obverse of the ninth leaf, where we find the remark द्वितीयोऽध्यायः । वल्लनैलं प्रवच्यामि वानरोगविवर्द्धणम् । i. e., ‘(here ends) the second chapter; I shall (now) explain the Valá 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, *mṛidvíka* 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 *harítaká*. 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 सिद्धसङ्कर्षे तैलपक्वस्तृतीयो ऽध्यायः । अतः परं प्रकीर्णकयोगान्वक्ष्यामः, *i. e.*, ‘(here ends) the third chapter on oils in the approved compendium Nāvanítaka; in the following we shall declare miscellaneous prescriptions.’ The following are some of the kinds of oil spoken of: *valú* oil in 16 ślokas, *amṛita* oil in 25 ślokas, *śvagandhá* oil, etc.

“The fourth chapter on mixtures or miscellaneous prescriptions ends on the obverse of the seventeenth leaf, with the words: इति नावनीतके मिश्रको ऽध्यायस्तुथः । अतः परं प्रवक्ष्यामि वलवर्णप्रसादकम् येन हंसा निवर्द्धन्ते वलं चैवोपजायन्ते । *i. e.*, ‘here (ends) the fourth chapter in the Nāvanítaka, (called) Míśraka; 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:—

भृष्टान्भृष्टान्बिलान्बिलान्मयक्चीरे निर्व्वाप्य पीषयेत् ।

वातरक्तप्रदेहसैस्त्रिलैर्व्वा मधुकाश्रितैः ॥ [१ ॥]

शस्तः प्रलेपः सृष्टतैश्कगलीचीरगोधूमैः ।

वातरक्तहरं ज्ञेयं प्रधानमिदमौषधम् ॥ [२ ॥]

वातशोणितप्रश्मनं योगद्वयं स्त्री २ ॥

सर्पिलैलं गुडं शुक्तं पद्मं विश्वभेषजं ।

पीतमेतद्भवेत्स्यस्तर्पणं त्रिकशूलनुत् ॥

चित्रकं पिपलीमूलं वचा कटुकरोहिणी ।

पाठा वत्सकबीजञ्च चरीतक्या मरौषधम् ॥

*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 *yavágú*, which belong to the seventh chapter.

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

“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 शिलाजतुकल्पं व्याख्यास्यामः* and *अथातश्चित्रककल्पं व्याख्यामः । 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 श्वेते श्वेतस्याधिपत्ये शतस्याधिकरणे स्वाहा ।* 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 नन्दिरुद्रेश्वराय—नमो आचार्येभ्यः—नमो ईश्वराय—नमो माणिभद्राय(?)—नमस्सर्व्व-*

*यक्ष...\*—नमस्सर्व्वदेवेभ्यः शिवाय नमः षष्ठीये नमः प्रजापतये नमः रुद्राय नमः नमो वैश्रवणाय नमो मरुतानां 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.

*परिद्धियते ते बुद्धिः..... †*

(line 2) *आरक्षश्चिन्तितो यस्ते निष्फलः स भविष्यति ॥ श्रापटः ४ ४ ३*

*व्याधिभिर्म्मोक्ष्यसे क्षिप्रं सुखं वा प्राप्स्यसे तथा ।*

*नात्युच्चं नातिनीचं च फलमासादधिष्यसि—॥ द्वितीयश्रापटः ॥ (line 3) [४ ३ ४]*

\* The dots signify illegible *aksharas*.

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

आयसो दृश्यते घोरो वेभ्यश्च तव विग्रहः ।

निष्फलं दृश्यते कार्यं प्रच्छसे यस्य कारणा—॥ तृतीयशापटः ॥ २ ४ ४

“ 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 *śāpaṭa*, there are three *māli*, five *bahula*, three *kūṭa*, four *bhadrā*, six *śakti*, six *dundubhi*, three *vrisha*, three *prashyā*, three *viṣī*, three *karnṇa*, three *sajā*, three *kāṇa*, three *chunchuṇa*, three *pañji* or *pāñji*, etc. What these terms may mean I do not know.

“ The system of enumeration, however, is curious and noteworthy. The three *śāpaṭa* 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, दुन्दुभी - गर्जनौ - वर्षणी - स्फोटनी - पतनी - पाचनी - चारिणी - कंपनी-  
मदनी(?) . . . . . \*

line 2, मे - गोलयाः परिवेलाय वर्षतु देवी समंतेन - इलि किसि खदा (read  
खादा ?) । मैवी मे धितराद्रेषु (read धत ० ?) मैवी नैरा-

\* The dots signify illegible *aksharas*.

line 3, वणेषु च - विरूपाक्षेषु मे मैत्री कृष्णगौतमकेषु च - मणिना नागराज्ञा मे मैत्री वासुकीना-

line 4, मपि - दण्डपादेषु .शेषु\* पूर्णभद्रेषु च सदा - नन्दोपनन्दो ये नागा वर्षवन्तो यशास्त्रिनः देवा-

line 5, सुरं पि संयामसगुभवन्ति महर्धिका - अनवतन्नेन वरुणेन मैत्री संहारकेन च - तच्छकेन अनन्तेन












line 6, तथा वासुसुखेन च - अपराजितेन मे मैत्री मैत्री च्छिव्वसुतेन च - महामन-  
स्त्रिना 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 Kṛishṇa 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 Vāsุมukha; 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 *pīshayet* for the regular Sanskrit *peṣayet*, and, in the colophon quoted above it, the wrong concord *valaṃ upajayante* (singular subject with plural predicate). In the third extract, *parihīyate* 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 *aparājitena* 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 च ya. Its original form was ; this changed to  or ; next the left hand loop-line was extended to the point of junction of the perpendicular stroke, . 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, , 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  and  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 Bilsad 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  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  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  or , 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 *anvavīye* (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, *chūrṇayet*, 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, *jīvanīyaiś=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 *śāpata* 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* गा of गाङ्ग in line 31 of that inscription with the गा of

नागा in line 4 and of संग्राम 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 *virāma*. Thus compare the very last word पिवेत् in the bottom line, and the word चोरकम् just three lines above it, in the upper portion of the plate in the November Proceedings, again अन्वितम् and नावनीतकम् in line 1, चूर्षयेत् in line 10 of Plate I, No. I, with the word यथावत् in line 11 of the Bilsaḍ 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 योगम् at the end of line 9 of the Indore copperplate of Skanda Gupta, of 465 A. D. (*ibid.*, p. 70), or मुख्यम् in line 6 of the Gwaliyor inscription of Mihirakula, of about 515 A. D. (*ibid.*, p. 162), or सिद्धम् in line 1, आध्वरान् in l. 13, भूतयेपात् in l. 17 of the Mandasor inscription of Yaśodharman, of 533 A. D. (*ibid.*, p. 152), or गम् in line 1 of the Jaunpur inscription of Íśvaravarman, 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.  $\frac{3790}{x, 25}$ , 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 *kriḡa*.

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 कश *kaśa* or रश *raśa*; on the proper left margin there is a mutilated ष *ṣha*. The reverse shows the seated form of the goddess, and along the proper left margin श्री चच्च *S'ri Chachcha* with faint traces of another (probably) conjunct letter. The full legend may have been श्री चच्चस्य *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 bkod̄ tshe phyi mahí

\*Mthoñ var byed̄-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 Sukhāvātī. 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 Sukhāvātī, 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 Sukhāvātī. Birds of richest hues and plumage and sweetest notes fly, freely in Sukhāvātī. 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 plumes, 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 pions 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 Sukhāvātī. 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 Sukhāvātī—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་རེལ་ན།  
 བདེ་བ་ཅན་གྱི་འཇིག་རྟེན་ཁས་ས།  
 དེ་ན་རྫོགས་པའི་སངས་གྱུས་བཞུགས།  
 དེ་བཞིན་གཤེགས་པ་འོད་དཔག་མེད།  
 སྤྱུ་ཞིག་དེའི་མཚན་བརྗོད་ན།  
 དེ་ནི་དེ་ཅུ་སྤྱི་བར་འགྱུར།  
 འཆི་བའི་དུས་སྤྱི་ལྷོན་པ་ནི།  
 དག་སྤོང་དག་འདུན་བཅས་ཏེ་མཐོང་།  
 དེ་ན་བྱད་མེད་ཡོད་མ་ཡིན།  
 མངལ་ན་གནས་པ་ཡོད་མ་ཡིན།  
 དེ་ན་ཆེན་ལོན་གྱི་པད་མོ་ལས།  
 རྩོམ་འབྲུལ་ཆེན་པོ་འགྱུར་བར་འགྱུར།  
 ཟས་དང་གོས་དང་སྤྲོན་ལོན་སྤང་།  
 ཆོས་གོས་མལ་ཆ་རྣུང་བཟེད་ལོན་ས།  
 སེམས་གྱི་བསམས་མ་ཐག་ཏུ་ནི།  
 དེ་དག་མེད་ལ་འགྱུར་བར་འགྱུར།  
 ཕྱོགས་བཅུར་བཞུགས་པའི་སངས་གྱུས་ལོན་ས།  
 བདེ་བ་ཅན་གྱི་བསྐྱབས་པ་བརྗོད།

\* \* \* \* \*

ལོན་དག་ཞིང་དུ་སྤྱི་བར་འགྱུར།

(འཆི་མེད་ཏེ་སྤྱི་བར་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 Phyoo, 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,—Bollettino, 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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Handwritten text in an ancient script, likely Sogdian or Old Turkic, on a fragment of birch bark. The text is arranged in approximately 10 horizontal lines. The script is dense and cursive, with some characters resembling the Cyrillic alphabet. There are several circular symbols interspersed within the text, possibly serving as markers or decorative elements. The bark fragment is irregularly shaped and shows signs of age and wear.

Handwritten text in an ancient script, likely Sogdian or Old Turkic, on a fragment of birch bark. This fragment is longer and more continuous than the one above. It consists of about 12 horizontal lines of text. The script is consistent with the one in Plate I. There are several circular symbols interspersed within the text. The bark fragment is irregularly shaped and shows signs of age and wear.

Photo etching.

LEAVES FROM A BIRCH-BARK MANUSCRIPT FOUND IN AN UNDERGROUND ANCIENT CITY NEAR KUCHAR, EASTERN TURKESTAN.







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 ballotted 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. Muuro to be scrutineers, who reported the result as follows :—

| Proposal |     | <i>For</i> | <i>Against</i> | <i>Result.</i> |
|----------|-----|------------|----------------|----------------|
|          | 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 Khamgaon 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 'Alam, 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, Aurangzáb     | 6 „          |
| 3, Aḥmad Sháh    | 1 „          |
| 4, Farukhsiyar   | 2 „          |
| 5, Muḥammad Sháh | 8 „          |
| 6, 'Álamgír II   | 1 „          |
| 7, 'Álam Sháh    | 8 „          |
|                  | <hr/>        |
| Total            | 29 „         |
|                  | <hr/>        |

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 'Álam 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 Sambawa 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 *sofataras* 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 *sofataras* since 1884. On the other *sofataras* 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 *sofataras* 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° 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° F.; in the next pool towards the lava, 103° F.; then 104° F.; then 106° F.; finally in the pool nearest of all to the recent lava 104° 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° 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,<br><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             | 33° 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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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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SENCKENBERGISCHEN NATURFORSCHENDEN GESELLSCHAFT, FRANKFURT.

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- . The Entomologist's Monthly Magazine,—Vol. II (2nd series),  
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- . The Journal of Botany,—Vol. XXIX, Nos. 337-38.
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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.
- . Annales de Chimie et de Physique,—Tome XXII (6me Série),  
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- . Revue Scientifique,—Tome XLVII, Nos. 12-16.
- . Revue Critique d' Histoire et de Litterature,—Tome XXX, Nos.  
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- GRAHAM, WILLIAM. Socialism, new and old, (The International Scien-  
tific series, Vol. LXX). 8vo. London, 1890.
- NAVILLE, EDOUARD. Bubastis, (1887-89). Eighth Memoir of the  
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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 RAINEY. 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 Rupsáhá, 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-*chhó-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.
- Calcutta. Indian Engineering,—Vol. IX, Nos. 19-22.
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- 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, 5<sup>e</sup> Volgr, Aflevering 2.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Mars-Avril, 1891.
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- OSCHANIN, B. List of the Hemiptera of Moscow and the neighbour provinces. 8vo. Moscow, 1870.
- . Materials for a fauna of the Hemiptera of Turkestan. 8vo.
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- . On Böhlingk's Upanishads (Reprinted from the Proceedings, American Oriental Society, Oct. 1890). 8vo.
- . On the second volume of Eggeling's Translation of the Çatapatha-Brāhmana (Reprinted from the Proceedings, American Oriental Society, Oct. 1888). 8vo.
- . The Roots of the Sanskrit Language (Reprinted from the Transactions of the American Philological Association, 1885).
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## MARINE SURVEY OF INDIA, POONA.

Tezkereh-i-Evliâ. Le Mémorial des Saints traduit sur le manuscrit ouïgour de la Bibliothèque Nationale par A Pavet de Courteille. Fol. Paris, 1889.

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A Magyar Határozók. A M. Tud Akadémiától Lukács Krisztina-féle Jutalommal Kitüntetett Pályamunka. irta Simonyi Zsigmond. 8vo. Budapest, 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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Mineral Resources of the United States, 1888. By David T. Day. 8vo. Washington, 1890.

Monographs of the United States Geological Survey, Vol. I. Lake Bonneville. By Grove Karl Gilbert. 4to. Washington, 1890.

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 Bind, 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.



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 Mukhopádhyáy, 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 ballotted 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 Mukhopádhyáy 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.

#### 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.
- Caloutta. 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. Societății Științifice Și Literare din Iași,—Archiva, An II, No. 8.
- London. Anthropological Institute of Great Britian 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.
- HORN, PAUL. Die Denkwürdigkeiten des Sâh Tahmâsp I von Persien. (Zeitschrift der Deutschen Morgenländischen Gesellschaft, Band XLIV, Nr. 4). 8vo.
- . Die Denkwürdigkeiten Schâh 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 AGRI. 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 Juvencus. 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. Fep. 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.
- Tillœg til Viridarium norvegicum af Dr. F. C. Schübeler. I (Separataftryk af "Nyt Magazin for Naturvidenskaberne" XXXII, 1891). 8vo. Christiania, 1891.

## UNIVERSITY OF CHRISTIANIA.

## PERIODICALS PURCHASED.

- 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'Académie 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.
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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 Aḥmadábád 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>mihr munír</i> , .....                | 17    |
| <i>c</i> , type: <i>Abul Muẓaffar</i> .....               | 4     |
| <i>d</i> , type: reversed writing .....                   | 2     |
|                                                           | 149   |
|                                                           | <hr/> |
| Total ...                                                 | 232   |
|                                                           | <hr/> |

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 inverted 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-<br/>quary</i> , vol. XVII, pl. I, fig. 9 .....  | 5 |
| <i>f</i> , type : round areas, single-lined, as in <i>Indian Anti-<br/>quary</i> , vol. XVII, pl. I, fig. 8.....   | 2 |
| <i>g</i> , type : round areas, single-lined, as in <i>Indian Anti-<br/>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 $\frac{1}{3}$<br>tolá ; unpublished, not in British Museum Cata-<br>logue. Mint: <i>Shahr 'Azam Muştafábád</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 |

---

Total coins of Maĥmúd ... 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 $\frac{5}{8}$ 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>$\frac{5}{8}$ 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>2</sup> , 924 <sup>1</sup> , 926 <sup>2</sup> , 928 <sup>1</sup> , 932 <sup>1</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* .....                                                                                                                                                                | 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 |

|                                                                                                                                                                                                               |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| III. Other coins; of uncertain attribution; very small; less than $\frac{1}{4}$ tolá each; marked on one side with जी <i>jí</i> and a trísula 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 Aurangzáb, 2 of Farrukh Siyar and 33 of Muḥammad 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 SIYAR, A. D. 1712—1719 | 3 "       |
| 4, MUHAMMAD SHÁH, A. D. 1719—1748 | 21 "      |
| 5, 'ALAMGÍR ZÁNÍ, A. D. 1754—1769 | 2 "       |

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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 Muḥammad Sháh may belong to his successor Aḥmad 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 *Couch* 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 up-raised 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 महारजाधिरज श्री च, and on the right margin (behind the king) it continues all round the rim, but unfortunately only न्द्रगु 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 रूपकृती *rúpa-kṛití*, *i. e.*, 'he who is clever in dramatic composition.' Above the *akshara* प *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-kṛitī* 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 *Mṛichchhakatikā*, 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-jaḍeva* of *Sákambhari* (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 विक्रम *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-guptah* 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 *इथिवी नलाम्बर* *prithivitalám-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: च्छिति (read च्छिति) पतिरजितो विजयकुमार गु *Kshitipatir ajito vi[jaya-Kumára] 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, *viz.*, *Samvat* 13; the first in *Vaiśákha* 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 Bodhisattvas, 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 Brahmadata 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 Brahmadata, 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 HOERNLE.

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 Volken-  
kunde, 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.
- NURSINGROW, 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.
- 22/7  
SARMA, PANDIT BHIMA SEN. Manavadharma Sástra, Vol. VII, Part 4. 8vo. Allahabad, 1891.
- 6/7  
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.

6/7  
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.

3/8  
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.

9/7  
The Bústán of Shaikh Muşlihu-d-dín Sa'adí. 8vo. London, 1891.

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

15/7  
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.

4/7  
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.

7/7  
Annual Report of the Sanitary Commissioner of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

1/7  
Notes of the Annual Statements of the Government Charitable Dispensaries in the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

4/7  
Report on the Jails of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

1/7  
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1/7  
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Report on the Sanitary Administration of the Punjab for the year 1890. Fcp. 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.

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

Indian Museum Notes, Vol. I, No. 5. Containing Title Page, List of Contents, and Index to Vol. I.

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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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,

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

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1-3.
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COPPER BUDDHIST CHAITYA FROM ASHRAFPUR IN BENGAL.

PHOTOZINCOGRAPHED AT THE SURVEY OF INDIA OFFICES, CALCUTTA.





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, Súrat, Ajmír, Sháhjahánábád, .....                                 | 22 |
| 2, <i>Bahádur Sháh 'Alam</i> , 1118—1124 A. H. = 1707—1712 A. D. ....                                                  | 11 |
| 3, <i>Farrokh Siyar</i> , 1124—1131 A. H. = 1712—1719 A. D. Usual type : .....                                         | 11 |
| 4, <i>Rafiu-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 A. D. Type I : “ <i>Şáhib Airán</i> ” ; mint : Sháhjahánábád.... | 63 |
| Type II : “ <i>Bádsháh Ghází</i> ” ; several varieties : ...                                                           | 51 |
| 7, <i>Ahmad Sháh Bahádur</i> , 1161—1167 A. H. = 1748—1754 A. D. Usual type .....                                      | 14 |
| 8, <i>'Alamgír Zání</i> , 1167—1173 A. H. = 1754—1769 A. D.                                                            | 3  |

---

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>Timúr Sháh</i> , 1187—1207 A. H. = 1773—1783 A. D. as in Numism. Chronicle, vol. VIII, p. 336, ..... | 15 |

---

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 'Fattickaurry.' 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.                                                            |                        |    |
| 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 Aḥmadsháhí, date 1217 .....        | 1                      |    |
| <i>b</i> , Kábulí type, another variety, as in Num. Chron.<br>VIII, No. 85, mint Dáru-s-Salṭanat Hirát, 1218... | 1                      |    |
|                                                                                                                 |                        | 9  |
|                                                                                                                 | Total Durránís ...     |    |
| III, Sikh Rupee :                                                                                               |                        |    |
| RANJIT SINGH, mint Amritsar, Saṃvat 1868 .....                                                                  | 1                      | 1  |
|                                                                                                                 |                        | 15 |
|                                                                                                                 | Grand total Rupees ... |    |

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 Sulṭáns of Delhi and 24 of the so-called Independent Sulṭáns of Bengal. They may be classified as follows:—

I, Paṭhán Rupees :

|                                                                                                                                                         |                  |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---|
| 1, SHER SHÁH, 947—952 A. H. = 1540—1545 A. D.                                                                                                           |                  |   |
| Type : square areas, date 946 .....                                                                                                                     | 1                |   |
| 2, ISLÁM SHÁH, 952—960 A. H. = 1545—1552 A. D.                                                                                                          |                  |   |
| 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                |   |
|                                                                                                                                                         |                  | 4 |
|                                                                                                                                                         | Total Paṭhán ... |   |

II, Independent Sulṭán'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, NAŚIRU-D-DÍN NAŚRAT 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, GHIYÁŞU-D-DÍN MAĤMÚD SHÁH III, 933—944 A. H. = 1532—1537 A. D.                                                        |    |
| Type as in Brit. Mus. Cat., No. 147 .....                                                                                | 3  |
| 4, GHIYÁŞU-D-DÍN BAHÁDUR SHÁH, 962—968 A. H. = 1554—1560 A. D., type: square areas, as in Brit. Mus. Cat., No. 155 ..... | 4  |
| 5, GHIYÁŞU-D-DÍN JALÁL SHÁH, 968—971 A. H. = 1560—1563 A. D., as in Brit. Mus. Cat., No. 153, dated 970                  | 1  |
|                                                                                                                          | 24 |
| III, Mughal Rupee:                                                                                                       |    |
| 1, SHÁH JAĤÁN, 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, MAĤMÚD 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, (*divyáni*). 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 Virángada 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 Virángada, 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 Prákrit.”

The story is said by the editor to be taken from Devendra’s Commentary on the Uttarádhyayana Sútra. 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, Prákrit *divvini*). 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 Cocos 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 188 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 Coco 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 288, 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 Wetháli 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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The following additions have been made to the Library since the meeting held in August last.

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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 Mukhopádhyaý, 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 ballotted 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-Araraj 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 Pípal 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 Múrti*, 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-jambes measure 5' 2"  $\times$  10'  $\times$  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 jambes correspond to each other in every particular. The top sill measures 5' 1" (broken)  $\times$  1' 2"  $\times$  8½", and shows the figure of Buddha in *Padmásan* 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 bíghás, 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* Rája used to bathe; but as it was too dark I had to return without seeing it.

2. *On the Dinájpur Copper Plate Inscription of Mahápadá*,—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-Marú, *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 *Pandarus*, 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 (*Calœnas 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.

THESPESIA 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 GYMNORHIZA 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  $\frac{1}{3}$  in. long, teeth  $\frac{1}{3}$  in. long; berries creamy white with purple meridional elongated blotches.

25. MORINDA CITRIFOLIA Linn., var. BRACTEATA Hook. f. (*M. bracteata* Roxb.

## COMPOSITÆ.

WEDELIA SCANDENS C. B. Clarke.

## MYRSINÆ.

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.

## APOCYNÆ.

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.

## BORAGINÆ.

CORDIA SUBCORDATA Lamk.

Very common.

TOURNEFORTIA ARGENTEA Linn.

## CONVOLVULACEÆ.

IPOMÆA DENTICULATA Choisy.

35. IPOMÆA BILOBA Forst.

## VERBENACEÆ.

PREMNA INTEGRIFOLIA Linn.

CLERODENDRON INERME Gærtn.

## LAURINÆ.

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. & Reichb. f.

This is also common, along with the preceding, at Port Blair in South Andaman.

AERIDES MULTIFLORUM Roxb.

## AMARYLLIDACEÆ.

CRINUM ASIATICUM Linn.

## LILIACEÆ.

DRACÆNA ANGUSTIFOLIA Roxb.

## FLAGELLARIEÆ.

50. FLAGELLARIA INDICA Linn.

## PANDANACEÆ.

PANDANUS ODORATISSIMUS Linn. f.

## NAIADACEÆ.

CYMODOCEA CILIATA Ehrenb.

## FILICES.

- DAVALLIA 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 Gaill.

## 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 TILIACEUS 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 *Ratonia*, 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.

CÆSALPINIA 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 JACQUINI 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 KURZII 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 FÆTIDA Linn.

Batti Malv.

## COMPOSITÆ.

WEDELIA SCANDENS C.B. Clarke.  
Car Nicobar, Batti Malv.

## GOODENOVIÆ.

SCÆVOLO KÆNIGII 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.

## APOCYNEÆ.

- OCHROSIA BOBBONICA Gmel.  
Car Nicobar.  
TABERNÆMONTANA CRISPA Roxb.  
Car Nicobar, Batti Malv.  
55. PARSONSIA SPIRALIS R. Br.  
Car Nicobar.

## ASCLEPIADACEÆ.

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.

STRYCHNOS 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.

## EUPHORBIA 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.

FICUS HISPIDA Linn., *var.* DEMONUM Koenig.

Car Nicobar, Batti Malv.

FICUS 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.

DRACÆNA ANGUSTIFOLIA Roxb.  
Car Nicobar, Batti Malv.

## AMARAYLLIDACEÆ.

CRINUM ASIATICUM Linn.  
Batti Malv.

## FLAGELLARIEÆ.

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 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.

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#### LIBRARY.

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

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#### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

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### BOOKS AND PAMPHLETS,

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

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### MISCELLANEOUS PRESENTATIONS.

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| „ „ elected Member of History and Archæological<br>Committee ... ..                 | 47          |
| „ „ elected Member of Natural History Committee                                     | <i>ib.</i>  |
| „ „ elected Member of Physical Science Committee                                    | <i>ib.</i>  |







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.

---

*President.*

H. Beveridge, Esq., C. S.

*Vice-Presidents.*

Col. J. Waterhouse, B. S. C.

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

J. Wood-Mason, Esq.

*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.

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

Prince Jahán Qadr Muhammad Wáhid Alí, Bahádur.

Bábu Gaurdás Bysack.

Dr. A. Crombie.

Bábu Pratápachandra Ghosha, B. A.

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

L. de Nicéville, Esq., F. E. S.

## 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-Latíf, 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. | Áli, Sir Áli Qadr Syud Hassan, Nawáb Bahádur,<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> .                                                                                    |
| 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, Mahámahopádhyáya 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>Seram-pore.</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>Burmah.</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. R. 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>                                             |
| 1880 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, Rádháballabha. <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. | Condenhove, 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. | Darbhangá, Sir Luchmessur Sing, Bahádur, K. C. I. E., Mahárajá of. <i>Darbhangá</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              | Ang. 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>Jeypore.</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. R. 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 Wáhid Alí, 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>                                                                                      |
| 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.                                                                                                   |
| 1889 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. R. 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>Hughli.</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.   | Mukhopádhyáya, 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. Palæontologist 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 Mahámahopádhyáya 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>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, 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.   | Prair, 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>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., Resident. <i>Kashmir.</i>                               |
| 1880 April 7.     | N.R. | Rai, Bipina Chandra, B. L. <i>Rannaghat, Nuldea.</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.   | Sarvádrikári, Rájkumár, Rai Bahádúr. <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. | Shyamadáś, Mahámahopadhyáya Kaviráj, Private Secy. to H. H. the Maharájá 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 Bareilly.</i>                  |
| 1884 Sept. 3.     | R.   | Singh, Kumár Indrachandra, of Paikparah. <i>Calcutta.</i>                                                                |
| 1882 June 7.      | N.R. | Singh, Maharájá 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, Maharájá 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>                                           |
| 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. 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>                                                                           |

| Date of Election. |      |                                                                                                                                                |
|-------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 1880 Nov. 3.      | A.   | Swynnerton, Rev. Charles. <i>England.</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>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-Gen. Sir Henry Edward Landor, R. A., C. S. I., F. R. S. <i>Europe.</i>                                                        |
| 1889 Mar. 6.      | R.   | Thuillier, Colonel. H. R., R. 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., R. E., Deputy Quarter-Master-General. <i>Simla.</i>                                                    |

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## 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. I., 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. R. G. S.,<br>F. Z. S. <i>London</i> .     |
| 1883 Feb. 7.  | Alfred Russell Wallace, F. L. S., F. R. G. S. <i>Parkestone</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. Carleyle, 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, R. N., F. R. C. S.  
 T. A. Pope, Esq.  
 Lieut.-Col. A. C. Toker, C. B.

---

 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.

---

 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            |
|                                                      |     |     |     |                               | <u>4,762</u>  | <u>6</u>       | <u>7</u>     |
|                                                      |     |     |     | 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            |
|                                                      |     |     |     |                               | <u>2,066</u>  | <u>10</u>      | <u>3</u>     |
|                                                      |     |     |     | 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            |
|                                                      |     |     |     |                               | <u>2,458</u>  | <u>8</u>       | <u>11</u>    |
|                                                      |     |     |     | To PUBLICATIONS.              |               |                |              |
| Journal, Part I                                      | ... | ... | ... | ...                           | 3,205         | 12             | 7            |
| Journal, Part II                                     | ... | ... | ... | ...                           | 6,364         | 4              | 3            |
| Proceedings                                          | ..  | ... | ... | ...                           | 2,052         | 15             | 6            |
|                                                      |     |     |     |                               | <u>11,623</u> | <u>0</u>       | <u>4</u>     |
| To Printing charges of Circulars, Receipt-forms, &c. |     |     |     |                               | <u>222</u>    | <u>10</u>      | <u>0</u>     |
| To Personal Account (Writes off and Miscellaneous)   |     |     |     |                               | .....         | 21,133         | 4 1          |
|                                                      |     |     |     |                               |               | 610            | 12 0         |
|                                                      |     |     |     | To EXTRAORDINARY EXPENDITURE. |               |                |              |
| Auditor's fee                                        | ... | ... | ... | ...                           | 100           | 0              | 0            |
| Barisál Guns                                         | ... | ... | ... | ...                           | 6             | 0              | 0            |
|                                                      |     |     |     | To Balance                    | .....         | 106            | 0 0          |
|                                                      |     |     |     |                               |               | <u>137,611</u> | <u>14 10</u> |
|                                                      |     |     |     | Total Rs.                     | ...           | <u>159,461</u> | <u>14 11</u> |

NO. 1.  
of Bengal.

## Cr.

By Balance from last report ... .. Rs. 139,211 13 7

## BY CASH RECEIPTS.

|                                                                        |    |                    |
|------------------------------------------------------------------------|----|--------------------|
| 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             |
|                                                                        |    | <u>10,227 13 4</u> |

## BY PERSONAL ACCOUNT.

|                        |  |                   |
|------------------------|--|-------------------|
| Admission Fees ... ..  |  | 736 0 0           |
| Subscriptions ... ..   |  | 8,109 0 0         |
| Sales on credit ... .. |  | 995 14 0          |
| Miscellaneous ... ..   |  | 181 6 0           |
|                        |  | <u>10,022 4 0</u> |

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        |
|                                                    |     |                      |     | Total Expenditure | 15,240 3 0 |
| To Balance                                         | ... | ...                  | ... | 469               | 2 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 |
|                            |     |     |     | <hr/> |    |   |
|                            |     |     |     | 9,797 | 7  | 0 |
|                            |     |     |     | <hr/> |    |   |

## BY PERSONAL ACCOUNT.

|                 |     |     |     |       |   |   |
|-----------------|-----|-----|-----|-------|---|---|
| Sales on credit | ... | ... | ... | 2,216 | 7 | 3 |
|                 |     |     |     | <hr/> |   |   |
|                 |     |     |     | 2,216 | 7 | 3 |

|              |     |       |        |    |   |
|--------------|-----|-------|--------|----|---|
| Total Income | ... | ..... | 12,013 | 14 | 3 |
|--------------|-----|-------|--------|----|---|

|           |     |       |        |   |   |
|-----------|-----|-------|--------|---|---|
| Total Rs. | ... | <hr/> | 15,709 | 5 | 9 |
|-----------|-----|-------|--------|---|---|

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*

---

**Dr.**

TO CASH EXPENDITURE.

|                     |     |       |     |     |            |           |   |
|---------------------|-----|-------|-----|-----|------------|-----------|---|
| Salaries            | ... | ...   | ... | Rs. | 1,387      | 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         | 3 |
| Total Rs.           |     |       |     |     | ...        | 6,592 0 3 |   |

## 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 |
|----------------------|-----|-----|-----|-------|---|---|

|       |   |   |
|-------|---|---|
| 3,200 | 0 | 0 |
|-------|---|---|

## BY PERSONAL ACCOUNT.

|                 |     |     |     |    |   |   |
|-----------------|-----|-----|-----|----|---|---|
| Sales on credit | ... | ... | ... | 92 | 0 | 0 |
|-----------------|-----|-----|-----|----|---|---|

|    |   |   |
|----|---|---|
| 92 | 0 | 0 |
|----|---|---|

|              |     |       |       |   |   |
|--------------|-----|-------|-------|---|---|
| Total Income | ... | ..... | 3,292 | 0 | 0 |
|--------------|-----|-------|-------|---|---|

|           |     |       |   |   |
|-----------|-----|-------|---|---|
| Total Rs. | ... | 6,592 | 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           |       |       |
|                   |                     |       |       | <hr/>               |       |       |
|                   |                     |       |       | 21,954 4 3          |       |       |
|                   |                     |       |       | <hr/>               |       |       |

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Benga .*

Examined and found correct.

MEUGENS &amp; 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 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 |
|                     | 136,600    | 0 0   | 1,943      | 5 3 | 138,543 | 5 3 |

## STATEMENT *Trust*

Dr.

|                                        |     |       |                   |
|----------------------------------------|-----|-------|-------------------|
| To Balance (Servants Pension Fund) ... | ... | ..... | Rs. 1,261 3 10    |
| <b>Total Rs. ...</b>                   |     |       | <b>1,261 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.*

Cr.

|                             |     |     |       |     |       |   |    |
|-----------------------------|-----|-----|-------|-----|-------|---|----|
| By Balance from last report | ... | ... | ..... | Rs. | 1,207 | 3 | 10 |
| By interest on Investments  | ... | ... | ..... |     | 54    | 0 | 0  |
| Total Rs.                   | ... | ... | ..... | ... | 1,261 | 3 | 10 |

WILL. KING,

*Honorary Secretary and Treasurer,  
Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS &amp; 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 |
| Total Rs. ... ..                    | ... | 45,991 | 2  | 6 |

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 |
| Total Rs. ... ..                    | ... | 143,556 | 7  | 8  |

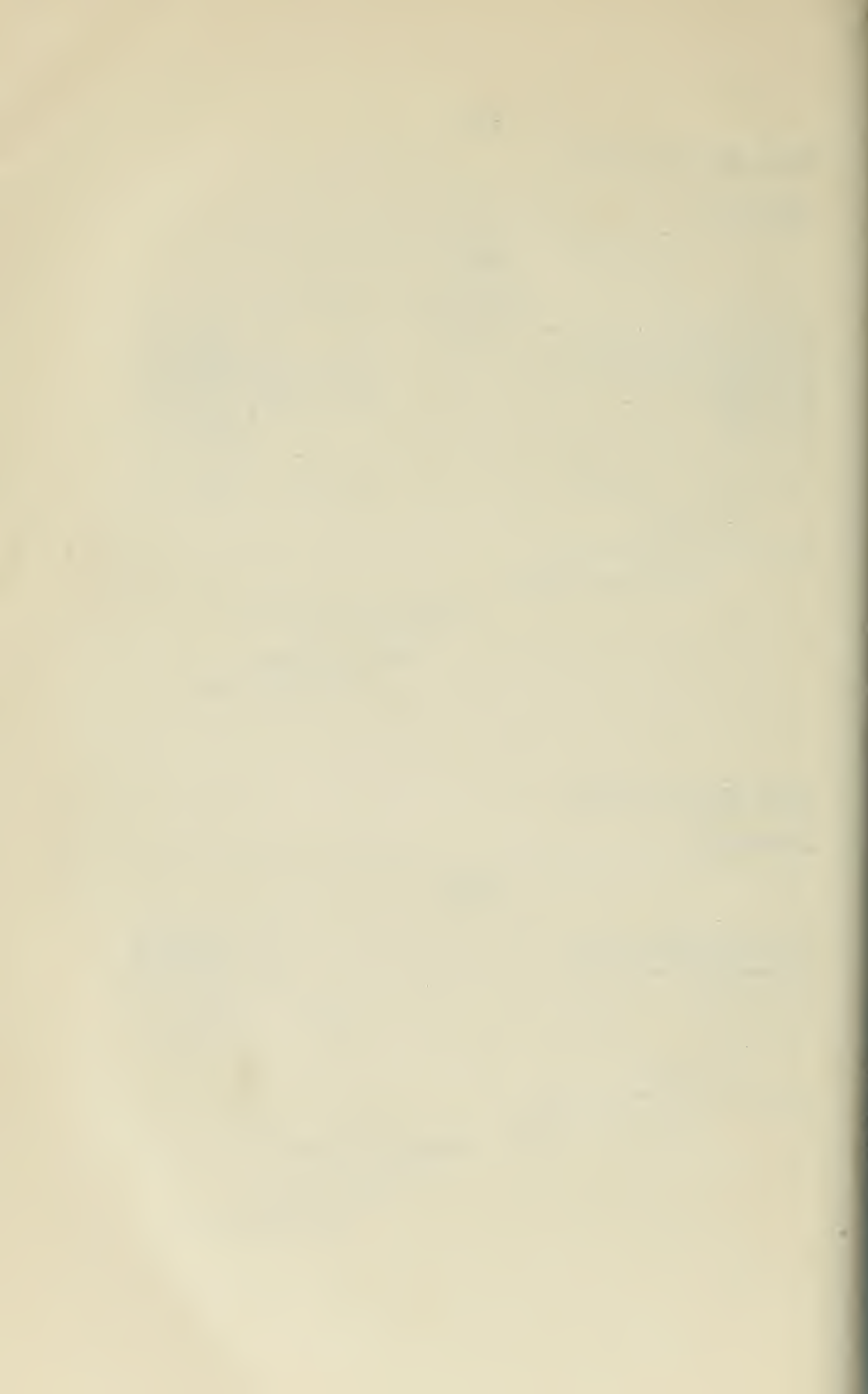
WILL. KING,

*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.

No. I. JANUARY, 1891.



“The bounds of its investigation will be the geographical limits of Asia: and within these limits its inquiries will be extended to whatever is performed by man or produced by nature.”—SIR WILLIAM JONES.

|                                     |           |
|-------------------------------------|-----------|
| ANNUAL SUBSCRIPTION,.....           | 4 rupees. |
| PRICE PER NUMBER, .....             | 8 annas.  |
| POSTAGE IN INDIA (ADDITIONAL),..... | 1 anna.   |
| PRICE IN ENGLAND, .....             | 1s.       |

The publications of the Society consist — of the *Proceedings*, one number of which is issued, as soon as possible, after every monthly meeting, and of the *Journal*, the annual volume of which is divided into two Parts: Part I being devoted to History, Philology, &c., Part II to Natural Science; each part is separately paged and provided with a special index, and one number of each part is published quarterly. Single numbers for sale at the rates given on the last page of cover.

\*\* It is requested that communications for the *Journal* or *Proceedings* may be sent under cover to the Honorary Secretaries, Asiatic Soc., to whom all orders for these works are to be addressed in India; or, in London, to the Society's Agents, Messrs. Tribner and Co., 57 & 59, Ludgate Hill.

N. B.—In order to ensure papers being read at any monthly Meeting of the Society, they should be in the hands of the Secretaries at least a week before the Meeting.

CALCUTTA :

PRINTED AT THE BAPTIST MISSION PRESS,

AND PUBLISHED BY THE

ASIATIC SOCIETY, 57, PARK STREET.

1891.

Issued 18th February, 1891.

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| 2. <i>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. (Title only) ... ..</i>   | ib.  |
| 3. <i>Description of a two Cowree piece, the lowest denomination of the Hindu system of copper coinage.—By W. THEOBALD, Esq. Communicated by DR. W. KING ... ..</i>                                             | ib.  |
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LIST OF BOOKS FOR SALE

AT THE LIBRARY OF THE

ASIATIC SOCIETY OF BENGAL,

No. 57, PARK STREET, CALCUTTA.

AND OBTAINABLE FROM

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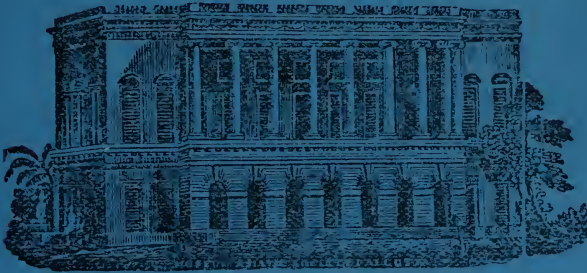
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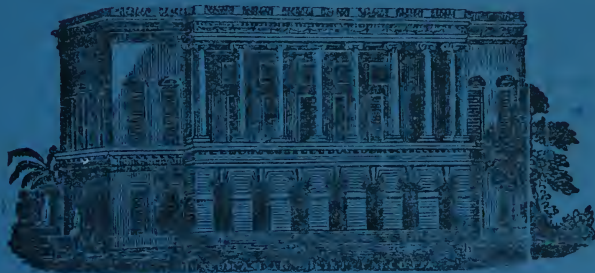
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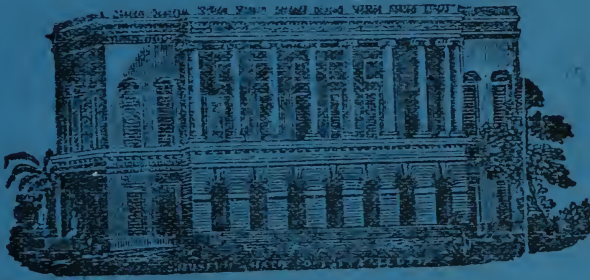
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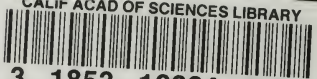








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