

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.

EDITED BY

THE HONORARY SECRETARIES.



JANUARY TO DECEMBER,

1885.



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Plate I, illustrating Dr. A. F. R. Hoernle's exhibition of Kashmiri Coins, will be issued with the March Number of the Proceedings.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JANUARY, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 7th January, 1885, at 9 P. M.

The Hon'ble J. GIBBS, Vice-President, in the Chair.

The minutes of the last meeting were read and confirmed.

Fourteen presentations were announced, as mentioned in the appended Library List.

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

1. A. E. Staley, Esq., C. S.
2. T. F. Bignold, Esq., C. S.
3. Colonel G. C. De Prée, S. C.

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

1. J. W. Oliver, Esq., proposed by H. F. Blanford, Esq., F. R. S., seconded by the Hon. J. Gibbs, C. S. I., C. I. E.
2. Babu Haraprasada Sastri, M. A., proposed by Babu P. C. Ghosha, B. A., seconded by Dr. R. L. Mitra, C. I. E.
3. Pandit Mahes Chandra Nyayaratna, proposed by Dr. A. F. R. Hoernle, seconded by Babu P. C. Ghosha, B. A.
4. Raja Surya Kumar Chandra, Bahadur, Mymensing, proposed by Dr. R. L. Mitra, C. I. E., seconded by Babu P. C. Ghosha, B. A.

The SECRETARY reported that he had appointed Mr. J. F. Duplessis, Assistant Secretary, vice Mr. Bion, resigned.

The following gentlemen have intimated their desire to withdraw from the Society :

1. S. S. Jones, Esq., C. S.
2. E. H. Man, Esq.

The PHILOLOGICAL SECRETARY reported that he had received several letters regarding the silver pieces belonging to Col. Clerk and exhibited at the August meeting of the Society, (see Proceedings for August, pp. 127, 128). It would be remembered, that both pieces bore inscriptions, which at that time no one had been able to decipher, though the general opinion seemed to be that they were in rude Greek or Páli characters. He had now much pleasure in informing the meeting, that with regard to one of the pieces—the narrow oblong one, ornamented with a ram's head, and figured on page 128 of the Proceedings for August—the mystery appears to have been solved by Mr. Beames, who first pointed out that they are evidently Semitic, and in particular some form of Aramaic. The subjoined extract from his letter, dated 18th November last, explains his view :—

“ I have just received the August number of the Proceedings, regarding the coins sent by Col. Clerk figured on pp. 127, 128. I note that no one can as yet read the inscriptions, owing, I suppose, to their having only thought of Greek or Páli. It has apparently escaped notice that the characters are clearly Semitic, some form of Aramaic or Himyaritic, they do not quite agree with any form that I have seen, though I have compared them with a good many of the inscriptions figured in the *Zeitschrift d. D. M. G.* Those on the oblong block figured at the top of p. 128 of the Proceedings (which is probably an amulet to be worn round the neck) agree pretty closely with several of the inscriptions in Vol. XXIV of the *Zeitschrift*, and may almost be called Palmyrene. I read the letters $\aleph \beth \daleth$ i. e., from right to left w, kh, d, b, a. From the word beginning with \beth one would conjecture (if the *language* is also Semitic) that it was a continuation of a sentence running along all four faces of the amulet. But as of course you know Hazváresh and Pahlavi were written in Semitic characters, so the word may be Persian. I cannot make out the letters on the coin quite satisfactorily though I distinguish \beth several times, also \daleth and \beth ; one is tempted to read the word on the left hand side of the reverse as $\beth \daleth$ *Λαγου* suggestive of the Ptolemies, but this is mere conjecture. I have no claim to much practice in reading coins, but perhaps this hint may be of use to experts in such matters.”

The PHILOLOGICAL SECRETARY then stated that he communicated Mr. Beames' letter to Colonel W. F. Prideaux, whose intimacy with Semitic inscriptions was well-known, and he would now read his reply, from

which it would be seen that he fully confirmed Mr. Beames' discovery though he modified the reading, originally suggested, in a few particulars, the result being, that the piece of silver was shown to bear the name of Tiridates, or some similar name. The following was Col. Prideaux's letter, dated 29th November, 1884:—

“I am very sorry that I can give no decided opinion on the inscriptions published in the August No. of the Proceedings. The characters do not exactly resemble any with which I am acquainted. Only one thing I can predicate with certainty: they are not Himyaritic. There is a certain “cachet” in Himyaritic epigraphy which can be detected at a glance by a practised eye. I quite agree with Mr. Beames that the characters are Semitic: they are, as he says, *some form of Aramaic*. They are, however, much earlier than the Palmyrene character, and I should be inclined to style them proto-Pahlavi, as they resemble to a certain extent the characters employed on the early Persic (sub-Parthian) coins of Fars, which were commented on by Levy some years ago in the *Zeitschrift d. D. M. G.* (Vol. XXI., p. 421). I don't think the first letter on the amulet is a 𐎠 (*waw*)—it is more like an archaic 𐎡 (*tet*). The second letter is pretty clearly 𐎢 (*cheth*), the next 𐎣 (*resh*) the next 𐎤 (*daleth*), and the last 𐎥 (*taw*). This would make 𐎢-𐎣-𐎤-𐎥 (Takhurdāt), which might possibly be a provincial form of the name known to the Greeks as Tiridates. At any rate the termination “dat,” about which there can be scarcely any doubt, implies a Persic name.

“I don't think the square piece is a coin. It is more probably an amulet or ornament. It would be labour thrown away to endeavour to interpret the inscription without seeing the original.”

In a subsequently received letter, dated 12th December, 1884, Col. Prideaux added:

“I must confess my inability to make anything of this coin, or amulet, or whatever it is. The characters are of a different type from those on the smaller piece of silver and may be a rude imitation of Greek. I don't think it is a coin, and I have some doubts of its genuineness altogether.

“The smaller piece seems all right and the inscription is doubtless a man's name, ending in “dat.” I cannot hit on anything more likely than what I suggested the other day, but there are of course difficulties in the way of accepting my reading.”

The CHAIRMAN said: Colonel Clerk had sent the two pieces to him at Simla, and he came to the conclusion that they were spurious, and made most probably at Rawal Pindi, for they were composed of a mixture of metals, and bore traces of having been cast in sand moulds. There are some persons not far from that station who manufacture all kinds of coins and curiosities.

The following letter from Colonel Prideaux was also read by Dr. Hoernle :—

“ I was much interested in reading Mr. Rodgers’s Paper in the April No. of the Proceedings on “ Some coins from Candahar,” and especially in his remarks on the new and hitherto unknown coins of Sistan. I am, however, sceptical with regard to his King *Hardufi*, or *Harufi*. One can trust very little to representations of coins which are drawn by hand, but the inscription on his No. 21 (obverse) seems to me to be Tájū-d-Dín Ḥarb bin Muhammad. What Mr. Rodgers reads as “ Har-dufi,” I read as “ Ḥarb bin,” and I should be disposed to ascribe it to the historical Ḥarb of coin No. 20. This was the King who reigned 60 years, so Khádīm Āli says, and was a contemporary of Chengiz Khan and the Khalífa En Násir-ed-dín-ullah. As for the mysterious word which reads as قانون according to Mr. Rodgers, of course there was a Syriac month called Qánún, but at the same time the word on Mr. Rodgers’s drawing of the coin might be read fifty ways.”

The PHILOLOGICAL SECRETARY exhibited 60 copper coins sent by Mr. H. Rivett-Carnac for exhibition to the Society, and read the following extract from the letter accompanying them : “ I send for the inspection of the Society copper coins obtained from the Panjáb, which appear to be of rare, if not of unknown, types. Many of them approach those figured in the *Ariana Antiqua* and in Prinsep’s *Indian Antiquities* as Indo-Sassanian coins. Others again bear a distinct impression of the Bull with inscription. The variety is considerable, but as I have not had time to examine them carefully, I think it well to send them without delay to the Society to whom the types may possibly be well known. It may be noted that some of the coins seem to have been stamped twice over,—the bull above some former design.”

DR. RUDOLF HOERNLE stated that he had examined them carefully and found that they all appeared to be Kashmir coins of various dates and types. They consisted of the following kinds :

No. 1. Fifteen specimens. Plate I, figs. 1—4. *Obv.* Head or bust of king, facing right with fillet behind, after the fashion of Sassanian coins (see *Ariana Antiqua*, Plates XVI and XVII). In front of face, along the margin, legend in later Gupta characters, श्री मिहिरकुल *Srī Mihirakula*, or (on two specimens) श्री मिहिरगुल *Srī Mihiragula*. *Rev.* The circular area divided by a straight line in two unequal parts. In the upper and larger portion, standing on the line, a bull walking, to the right, towards what looks like a low trident set up on the line, in front of him. Above his hind-quarters a crescent. In the lower, smaller part of the area, a legend in later Gupta characters : जयतु इष *jayatu vrisha*,

‘may the bull be victorious.’ Circular dotted margins on both sides. Most of these coins are in fair preservation ; several showing distinctly the whole legend.

No. 2. Two specimens. Plate I, fig. 5. A variety of No. 2, the crescent on *Rev.* replaced by a *y*-shaped symbol, and the trident staff is wanting. Moreover on one of them the bull is represented in the attitude of running or jumping. The dots on both coins are much smaller ; the name is spelt *Mihiragula*, and the letter $\text{𑂔} m$ is formed peculiarly, being hardly distinguishable from a $\text{𑂕} p$.

No. 3. One specimen. Another variety of No. 2. On the *obv.* the legend is placed below the head ; while the space in front of the face is occupied by a symbol resembling monogram No. 163 of the *Ariana Antiqua*, as on figs. 9 and 10 of Plate XVI of that work.

No. 4. One specimen. A third variety of No. 2. On *rev.* the dividing line is wanting, the area being occupied by the bull, and above him, along the dotted margin, is placed the legend *jayatu vrisha*. The characters on this specimen are of an older type, being angular.

No. 5. Six specimens. Plate I, figs. 6, 7. *Obv.*, King’s head or bust, facing right with fillet behind, as on No. 1. In front of face, a symbol, resembling an angular shaped 9, which, if it be a graphic sign, may be read as *bra* or *pra*. *Rev.*, Circular area, divided into two halves by a straight line ; in the upper half a wheel within a circle of dots ; in the lower half, the two letters $\text{𑂔} tora$, in large bold Gupta characters of a late type. Circular dotted margins on both sides.

No. 6. Fourteen specimens. Plate I, figs. 8, 9. *Obv.*, Head or bust of king, with fillet behind ; in front of face, monogram No. 163 of the *Ariana Antiqua*, as on figs. 9 and 10 of Plate XVI, and on fig. 20 of Plate XVII. *Rev.*, figure of running bull, with turned-up tail, facing to the left. Dotted margins on both sides, but no legends. Most of these are very poor specimens.

No. 7. Eleven specimens. Plate I, figs. 10, 11. Variety of No. 6 ; the only difference being that the bull faces to the right.

No. 8. One specimen. Plate I, fig. 12. Another variety of No. 6 ; the only difference being, that instead of the monogram there is an inscription, consisting of the letter $\text{𑂔} ha$, and after it perhaps $\text{𑂕} ra$.

No. 9. One specimen. Plate I, fig. 13. *Obv.*, Head or bust of king, facing left, with crescent surmounting the forehead, and a trident and fillet in front of it ; somewhat resembling fig. 20 on Plate XVI in the *Ariana Antiqua*. *Rev.*, Standing bull, facing left, towards what looks like a crude fire altar ; above distinctly the letters $\text{𑂔} rudra$.

No. 10. One specimen. Plate I, fig. 14. *Obv.*, Crude standing figure of king, facing to the front, with left arm akimbo, its right resting on a

spear or staff ; somewhat resembling the figure on the later Indo-Scythian coins. *Rev.*, Wheel as in No. 5, with some large marks looking like letters (perhaps बोधि *bodhi*).

Besides there are seven coins in the collection, which are too badly preserved to allow of being identified, but they probably belong to Nos. 6 and 7.

One of the most curious circumstances about these coins is, that as already noticed by Mr. Rivett-Carnac, some of them are double struck. Nearly all these double struck specimens occur in Nos. 1 and 5. In the former there are 6 out of 15 ; in the latter 4 out of 6. One only occurs in each of Nos. 6, 7 and 8. In the case of those occurring on No. 1, the emblems of No. 5 appear to be superimposed on those of No. 1, in the following way : in three specimens (Pl. I, fig. 3) the *rev.* of No. 5 (with *tora* and wheel) is placed over the *obv.* of No. 1 (head), while its *obv.* (head) is over the *rev.* of No. 1 (bull). In the other three specimens (Pl. I, fig. 4) the *obv.* of No. 1 (head) is more or less preserved to do duty for the *obv.* of No. 5 (head), while on the *rev.* the emblems of No. 5 (*tora* and wheel) are superimposed on the emblem of No. 1 (bull). On one specimen the emblems of No. 1 seem to be superimposed on those of No. 5, but this, being an exceptional case, may be an illusion. In the case of the double struck specimens occurring on No. 5, the emblems appear to be the same (Pl. I, fig. 7) ; it seems as if two consecutive attempts were made to strike the same emblems (*obv.* head, *rev.* *tora* and wheel) on a piece of copper, the first having been unsuccessful. In the double struck specimen of No. 6 (Pl. I, fig. 9), the *obv.* of No. 6 (head) is placed over the *rev.* of No. 1 (bull and inscription) of which only a small portion of the inscription (*viz.* ञ *ya*) is still visible ; while the *rev.* of No. 6 (running bull) is placed on the *obv.* of No. 1. In the double struck specimen of No. 7 (Pl. I, fig. 11), the *obv.* of No. 7 (head and monogram) is placed over the *rev.* of No. 5 (*tora* and wheel), while the *rev.* of No. 7 (running bull) is over the *obv.* of No. 5 (head). In the double struck specimen of No. 8, again, the *obv.* of No. 8 (head with *hara*) is placed over the *rev.* of No. 1 (bull) which has entirely disappeared ; while the *rev.* of No. 8 (running bull) is placed over the *obv.* of No. 1 (head with inscription) of which only a small portion of the inscription (*viz.*, श्री *Srī M*) is still distinctly visible. From these facts the historical sequence of the coins would appear to be that No. 1 comes first, then Nos. 5, 6 and 7 as contemporaries. This agrees with the notices contained in the *Rājataranginī*. According to that work there was a Kashmirian King, called Mihirakula (perhaps in the 7th century A. D.), and after a long interval (perhaps of 200 years) a king Pravarasena I. The latter had two sons, Hiranya and Toramāna, of whom the latter rebelled against his brother and

coined money. It is recorded of him that "he forbade the use of the coin struck by king Bála and largely circulated the *dínaras* coined by himself" (see J. C. Dutt's Translation, p. 38). Now the coins No. 1 are clearly those of Mihirakula. About him it is said that he was defeated by Báláditya. The coins No. 5, with *tora* on them, may be ascribed to Toramána, and the notice that "he forbade the coins of king Bála" may be a reminiscence of the fact that he re-struck the coins of Mihirakula, as shown by the present collection. In favour of the ascription of the *tora* coins to Toramána, it may be mentioned, that in the Society's collection there is a copper-coin closely resembling the present ones, which prefixes श्री *śrī* to *tora* (श्रीतोर). If this is correct, the letters प्र *pra* on the *obv.* may perhaps be read as an abbreviation of Pravarasena, the name of his father. Further the coin No. 8, with *Ha* or *Hara* on it, may be ascribed to Toramána's elder brother Hiranya; and since No. 8 is only a variety of the anonymous coins Nos. 6 and 7, it is probable that all the coins, Nos. 6—8, are those of Hiranya. It would seem (so far as one may be allowed to judge from the evidence of the present collection,) that till the time of the two brothers Hiranya and Toramána, the money of Mihirakula still formed the common currency of the country; and that Hiranya sparingly, but Toramána more extensively, began to supersede it by re-striking the pieces with their own emblems.

MR. FLEET remarked that the coins were Kashmíri coins, and that, according to all historians, Toramána succeeded Mihirakula. The latter came from the North West and established his kingdom in the Panjáb. He attempted to destroy Buddhism, but was defeated by Báláditya, and after several vicissitudes gained possession of Kashmir. The former came long afterwards and was imprisoned for issuing coins without authority. He died immediately after being delivered from prison.

The following paper was read:—

On certain Symbols or devices on the Gold Coins of the Guptas.—By W. THEOBALD, M. N. S. L.

(Abstract.)

The author refers to Mr. V. A. Smith's paper on the Gupta coinage, published in the Society's Journal, Part I of 1884, and offers what he believes to be not only a new, but perhaps a more correct, interpretation of three of the symbols which occur on the Gupta coins. These are, the "fillet" (or "noose"), the "cornucopiæ" and the "footstool." Mr. Theobald contrasts these symbols with similar ones which occur on Bactrian, Indo-Scythian and other coins, and arrives at the conclusion, that on the Indian coins they clearly represent peculiarly Indian ideas, wholly different from those which they admittedly repre-

sent on the Grecian or semi-Grecian ones. Thus the "fillet" or "noose" he considers to be "of ambiguous import, and that it represents indifferently the 'noose' of Siva, when borne by a goddess, whom we have reasons for regarding as his Sakti; or when it is borne by a goddess presumably identified with Lakshmi, it is then a feminine symbol analogous to the 'Sistrum' of Isis; and that it is by collateral indications only that it can be decided in which sense, in each case, this symbol is to be construed." Regarding the "cornucopiæ," the author thinks that it differs considerably from the types of that symbol on the Indo-Scythian coins, the main difference being a number of equidistant dots set on a convex line, by which the cornucopiæ is closed above; and that this difference is too constant and circumstantial to be the result either of accident or inferior execution. Hence, he considers it to represent the well-known object of Hindú symbolical worship, the Snake or polycephalic Nág, the heads of which are indicated by the dots. The so-called "footstool" Mr. Theobald considers to be but another representation of the Nág, a fold of which is represented as encircling the solid earth. The only point which puzzles him is how this obvious interpretation of the three symbols has hitherto escaped the notice of the far abler antiquaries than himself, who have studied these coins.

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

The following note from Mr. F. Chambers, in reply to the criticism by Mr. H. F. Blanford on his paper read at the November meeting, was read.

The greater part of my paper is devoted to proving that barometric depressions travel from the western frontier of India across Sind to Rajputana, and I purposely avoided dealing with their motion from Rajputana eastward, because that is the point about which there is no dispute. If it be admitted that I have proved my case, the contention that these disturbances originated in western Rajputana must be abandoned. Both propositions cannot be correct, for a disturbance cannot originate in Rajputana and also travel thither from the western frontier of India. Thus far with respect to the facts brought forward by me! I now turn to the evidence adduced in Mr. Blanford's paper (page 7, Part II, No. I of the *Journal* for 1884) in support of his conclusion "that in most cases, if not in all, these disturbances originate in India." With regard to those which are supposed to have originated in western Rajputana, I find the date is given of but one case, that of the 25th January 1878. This instance is now claimed as an exception to the general rule of eastward motion, but I find that a minimum of pressure occurred at Kurrachee on the 25th, at Deesa on the 26th, and at Indore on the 27th, clearly indicating the usual eastward movement from some

region to the westward of Kurrachee. Other instances are mentioned of disturbances having originated in western Rajputana in January, February and March 1881, but the dates are not given and I am unable to identify them. With regard to those disturbances which are supposed to have originated in other parts of India, I must point out that the case given as having occurred on the 10th to 13th January 1878, which is said to have just appeared on the western half of the Deccan plateau, really appeared first at Bhuj and Raykot on the 9th January, and afterwards moved eastwards in accordance with the usual rule. Similarly, the case of the 10th February 1879, which is supposed to have originated in the heart of India, was really preceded on the 9th February by a minimum of pressure in western India, and followed on the 11th and 12th by a minimum in Bengal. It must therefore have originated farther to the westward than the position assigned to it.

Again, in the case of the 15th to 18th February 1880, which is said to have been just established in the Central Provinces, there is decided evidence, in the chart for the 14th February 1880, published in the Report on the Meteorology of India for that year, to prove that the disturbance really entered India from the Bombay Coast. I maintain, therefore, that Mr. Blanford has not brought forward a single undoubted instance of the origin of a winter cyclonic disturbance in India. In every case there is evidence to show that the disturbance entered India from the westward. What then becomes of the theory devised to explain their origin in India?

The further question now arises, did these disturbances originate on the western borders of India, or did they come from regions farther to the west? As I said in my note, this is a matter which cannot be finally decided without observations from those regions, but having traced the barometric depressions from the western confines of India into the interior, the latter alternative seems to me by far the more probable of the two.

I cannot on this occasion follow Mr. Blanford into the long discussion, in which he endeavours to show that one of the Indian storm tracks published at Washington is unworthy of confidence. I grant that every well ascertained case of a breach of continuity in the path of a storm affords an argument against the application of the principle of continuity to connect storm centres which are far apart; but, on the other hand, every well-observed case of a long and continuous storm path—and there are hundreds, perhaps thousands, of such cases on record—affords an argument in favour of the application of the principle. The contention amounts then to this, that even if the two cases of supposed discontinuity, to which Mr. Blanford refers, be accepted as such, the fact still

remains that there is some probability in favour of the track laid down in the American Chart for February 1878, and certainty is not claimed for it either by myself or the Chartographer. There is this to be said, however, in favour of the American charts of Indian storm tracks, that, with all their want of accuracy of detail, they are the publications which, as far as I am aware, first brought to light the fact of the eastward motion of the winter storms of Northern India, a fact which later investigation has fully confirmed. I cannot admit, however, that the storm of the 11th to 13th November 1881 affords clear evidence of a breach of the continuity of a storm track, and the assertion that the storm of the 11th to 13th July 1881 was independent of that of the 2nd to 6th July requires proof. All the facts of the November case seem to me to accord far better with the simpler supposition, that the opposing friction of the land surface merely produced a temporary diminution of the intensity of the storm; and the July instance may possibly be one of the same kind. It is clear that the latter storm did not originate in Gujarat, but travelled from the Malwa plateau into Cutch and Lower Sind, increasing in intensity as it passed into the plain below, and onward towards the Arabian Sea. In both the above cases Mr. Blanford appears to me to have mistaken the rapid development of a feeble cyclone, previously in existence, for the birth of a new and independent vortex. The distinction may appear to be of little consequence, but it has a very important bearing on the administration of the Bombay storm warning service. The fact, that this question is one on which widely different opinions are held, is a proof that further discussion is needed, but to deal with the matter satisfactorily would require the whole of a separate paper, and I must now defer the further consideration of it.

With regard to Mr. Eliot's remarks, I would merely point out that the side issue mentioned in my note had reference to the original question, raised in my letter to "Nature," as to whether the winter rains were to be ascribed to cyclonic disturbances or to the upper anti-monsoon current. It did not refer to the question as to where the winter storms originate. The latter question is obviously a side issue of the former, but I quite agree with Mr. Eliot in regarding it as a legitimate subject for further inquiry, although it may be of secondary importance to the investigation of the conditions, which give rise to the continued existence and eastward motion of the winter cyclones. One practical conclusion from the whole discussion seems to me to be that more information is required from regions to the westward of India. Waiting for this information, however, can hardly be considered the best way of obtaining it.

LIBRARY,

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

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

- Baltimore. American Chemical Journal,—Vol. VI, No. 4, November, 1884.
- Birmingham. Birmingham Philosophical Society,—Proceedings, Vol. IV, Part 1.
- Bombay. Indian Antiquary,—Vol. XIII, Parts 161—163, October and November, 1884.
- Bordeaux. Société de Géographie Commerciale,—Bulletin, Vol. VII, (series II), No. 22.
- Buenos Aires. Academia Nacional de Ciencias,—Boletín, Vol. VI, Parts 2 and 3.
- Calcutta. Asiatic Researches (Popular Edition),—Vol. I, No. 4.
- . Geological Survey of India,—Memoirs, Palæontologia Indica, Vol. I (Series XIII), Part 4.
- . ———. Records, Vols. XVII, Part 4; XXI, Parts 1 and 2.
- . Original Meteorological Observations,—May, 1884.
- Cambridge. American Philological Association,—Transactions, Vol. XIV.
- The Hague. Koninklijk Instituut Taal-Land en Volkenkunde van Nederlandsch—Judië,—Bijdragen, Vol. VIII, No. 3.
- Ithaca. The Library of Cornell University,—Vol. I, No. 10.
- Lahore. Anjuman-i-Punjab,—Journal (English Section), Vol. IV, Nos. 48—53.
- London. Academy,—Nos. 654—658.
- . Athenæum,—Nos. 2977—2981.
- . Nature,—Vol. XXXI, Nos. 785—789.
- . Royal Asiatic Society,—Journal, Vol. XVI (new Series), Part 4, October, 1884.
- . Royal Astronomical Society,—Monthly Notices, Vol. XLIV, No. 9.
- . Royal Geographical Society,—Proceedings, Vol. VI, (new Series), No. 11, November, 1884.

- London. Royal Microscopical Society,—Journal, Vol. IV (Series II), Part 5, October, 1884.
- . Royal Society—Proceedings, Vols. XXXVI, No. 231; XXXVII, No. 232.
- . Society of Telegraph Engineers,—Journal, Vol. XIII, No. 53.
- . ————. List of Members, June 30th, 1884.
- . Statistical Society,—Journal, Vol. XLVII, Part 3.
- . Zoological Society,—Proceedings, Part 3, 1884.
- Munich. Repertorium der Physik,—Vol. XX, No. 11.
- Paris. Société Académique Indo-Chinoise—Bulletin, Vol. I (Series II).
- . Société d'Anthropologie,—Bulletin, Vol. VII (Series III), Fasc. 3.
- . Société de Géographie,—Compte Rendu, Nos. 16 and 17, 1884.
- Rome. Società Degli Spettroscopisti Italiani,—Memorie, Vol. XIII, Nos. 9 and 10, September and October, 1884.
- St. Petersburg. Russian Geographical Society,—Proceedings,—Vol. XX, Nos. 4 and 5.
- Zagreb. Arkeologickoga Druztva,—Viestnik,—Vol. VI, No. 4.

BOOKS AND PAMPHLETS,

presented by the Authors, and Translators.

- GROWSE, F. S. Bulandshahr: or Sketches of an Indian District; Social, Historical and Architectural with Plates. 4to. Benares, 1884.
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The Lepidoptera of Ceylon, Parts 6—9, by F. Moore. 4to. London, 1882-84.

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The Legislative Acts of the Governor General of India in Council from 1834-1877. 8vo. Calcutta, 1860-78.

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 ———. Westminster Review,—Vol. CXXII, No. 244, October, 1884.
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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR FEBRUARY, 1885.

The Annual Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th February, 1885, at 9 P. M.

The Hon'ble J. GIBBS, C. S. I., Vice-President in the Chair.

According to the Bye-Laws of the Society, the President ordered the voting papers to be distributed for the election of Officers and Members of Council for 1885; and appointed Messrs. J. C. Douglas and R. Logan, Scrutineers.

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

ANNUAL REPORT FOR 1884.

The Council of the Asiatic Society of Bengal have the honor to submit the following Report on the state and progress of the Society's affairs for the past year.

Member List.

In the year under review, 29 gentlemen were elected ordinary members of the Society, 17 Members withdrew, 4 died and 5 were removed from the List in accordance with Rule 40; the result showing a net gain of 3 Members to the Society. The total number of Members, therefore, at the close of 1884 was 326 against 323 at the end of the preceding year. Of these, 102 are Resident, 157 Non-Resident, 12 Foreign, 15 Life and 40 Non-Subscribing Members, as will be seen from the following Table, which also shows the fluctuations in the number of Ordinary Members for the past 6 years.

YEAR.	PAYING.				NON-PAYING.			GRAND TOTAL.
	Resident.	Non-resident.	Foreign.	Total.	Life.	Absent.	Total.	
1879	111	154	16	281	12	36	48	329
1880	112	185	15	312	14	30	44	356
1881	110	168	17	295	14	41	55	350
1882	101	155	18	274	15	48	63	337
1883	100	142	18	260	15	48	63	323
1884	102	157	12	271	15	40	55	326

During the year, one member, the Nawab Nazim of Bengal, commended for his future subscriptions.

The Society lost one of its oldest members, Sir Edward Clive Bayley. He was born on October 17th, 1821, and, after a distinguished career at Haileybury, arrived at Calcutta in 1842. The earlier years of his official life were spent in district work, in the North-Western Provinces. In 1849, he was appointed Settlement Officer of Guzerat, then recently acquired by the East India Company on the downfall of the kingdom of the Sikhs. Here he distinguished himself greatly, and was soon after brought to the Foreign Department, where, under the guiding spirit of Sir Henry Elliot, he imbibed a taste for oriental researches which grew with his growth and ceased only on his demise. Sir Henry was then engaged in his great work on the Muhammadan historians, and Mr. Bayley translated for him from Persian works many voluminous extracts, some of which were published by Sir Henry Elliot, and all spoken of in high terms of praise by that renowned Orientalist. Other extracts have since been published in the late Professor Dawson's continuation of Sir Henry's work. After a service of three years, in the Punjab in 1855, Mr. Bayley availed himself of the furlough to which he was then entitled, and during his leave went through the usual course of studies and got himself admitted to the Bar. Soon after his return to India, he was appointed Secretary to the Foreign Department, and subsequently to the Home Department of the India Government, which office he held for several years. During the last four years of his sojourn in India he was a member of the Supreme Council, and held the portfolio of the Home Department. For four years he held the office of Vice-Chancellor of the Calcutta University. His connection with the Asiatic Society dated from 1851, and he was President of the Society for five, and Vice-President for three years. His leisure hours were devoted to antiquarian researches, but his onerous official duties did not permit

him to devote so much time to them as he wished. His sojourn in the Punjab immediately after its acquisition by the British Government gave him excellent opportunities, which he utilized to the utmost, for collecting old coins, and as an accomplished numismatist he made for himself a name which is honorably known in Europe. The study of numismatics necessarily attracted his attention to Indian epigraphy, and he devoted much attention to inscriptions. Since his retirement from India he wrote two valuable essays on the genesis of the Indian Alphabet and of the Indian numerals. While engaged in translating extracts from the works of Muhammadan writers, and subsequently during his sojourn at Agra and Delhi, he paid much attention to mediæval Indian history, and he was well known to be one of the most enthusiastic and able expounders of the history of the Muhammadans in India. He contributed to the Society nine papers on history, numismatics, ancient inscriptions, and sculptures, and published several others in Europe. These learned papers were received with respect by, and have ably assisted, the archæologists of this country, and his name is intimately associated with the progress of this Society.

The other 3 ordinary members who died during the year were Dr. H. W. McCann, the Society's General Secretary, whose loss has been feelingly acknowledged, and an account of whose life and labours has been published in the Proceedings for July; Mr. J. B. Chalmers and Mr. R. Pawsey.

An Associate Member was elected during the year, Mr. F. Moore, F. Z. S., in recognition of his contributions to Indian Entomology.

At the Centenary Meeting, held on the 18th January 1884, to celebrate the Hundredth Anniversary of the first meeting of the Asiatic Society, the following six gentlemen, on the proposal of the Council, were unanimously elected Special Centenary Honorary Members.

1. James Prescott Joule, Esq., LL. D., F. R. S., Manchester.
2. Dr. Ernst Hæckel, Professor in the University of Jena.
3. Charles Meldrum, Esq., M. A., F. R. S., Mauritius.
4. A. H. Sayce, Esq., Professor of Comp. Philology, Oxford.
5. M. Emile Sénart, Member of the Institute of France, Paris.
6. Monier Williams, Esq., Boden Prof. of Sanskrit, Oxford.

Indian Museum.

The following presentations made to the Society have been transferred to the Indian Museum, under the provisions of Act XXII of 1876.

2 Brass objects, one of which looks like a seal, presented by Col. M. G. Clerk, and found by him in an excavation in Accra near Bannu in the Punjab.

A vacancy in the office of Trustee having occurred by the death of Dr. H. W. McCann, Mr. F. E. Pargiter was elected a Trustee on behalf of the Society.

Finance.

The Appendix contains the usual classified Statement shewing the accounts of the Asiatic Society.

Under Statement No. 1 will be found the account of receipts and disbursements of the Asiatic Society during the year 1884.

Statement Nos. 2 and 3 show how the money administered through the Society in the Oriental Publication and Sanskrit Manuscripts Funds has been spent during the past year. A fixed allowance of Rs. 750 per month is given by the Government of India to the Oriental Publication Fund, and a yearly sum of Rs. 3,200 is paid by the same authority to the credit of the Sanskrit Manuscripts Fund.

Statement No. 4 gives an account of monies due by and to the Members of this Society.

In Statement No. 5 an account is given of the sums invested in Government securities and held in deposit by the Bank of Bengal. They consist of Rs. 21,800 in 4 per cent. Government paper and Rs. 1,37,000 in $4\frac{1}{2}$ per cent. Government paper, making together Rs. 1,58,800.

Statement No. 6 shows the sum invested, known as the Piddington Trust Fund, the interest of which is applied to the payment of a pension to an old servant of the Society.

The Cash receipts and expenditure of the Society as well as those of the different funds are summed up in Statement No. 7.

Statement No. 8 exhibits the balance sheet of the different statements.

The budget for the past year was estimated by the Council of the Society thus: Receipts Rs. 15,725. Expenditure Rs. 15,429. The actuals of the year were found to be: Receipts Rs. 15,154. Expenditure Rs. 14,805.

In the receipts under the head "Subscriptions" a decrease of Rs. 700 has taken place, and this is due to the high figure at which the amount was budgetted for last year. According to the number of Members, resident, non-resident and foreign, on the list of the Society at the close of the past year, an amount of Rs. 7,600 only could have been raised; but as there were large arrears due from Members, it was expected that some portion of them would be realized, and would thus raise the total subscriptions to Rs. 8,000. Although every available means has been employed to call in the outstandings, yet the efforts have been far from successful. A dozen

members owe sums of money aggregating close upon 900 Rs. to the Society, and have failed to discharge their debts, although repeatedly called upon to do so.

Several items on the expenditure side show a marked saving, whilst in some cases the budget estimate has been exceeded. On the whole the amount expended is less than that budgetted for by Rs. 624.

The budget estimate for 1885 is as follows—

RECEIPTS.

Subscriptions	...	...	...	...	Rs. 7,500
Sale of Periodicals	...	...	...	...	1,200
Interest on Investments	...	...	...	...	6,200
Miscellaneous	...	...	...	...	200
					Rs. 15,100

EXPENDITURE.

Salaries	...	...	...	...	Rs. 3,820
Commission	...	...	...	...	320
Pension	...	...	...	...	8
Stationery	...	...	...	...	220
Lighting	...	...	...	...	100
Building	...	...	...	...	50
Taxes	...	...	...	...	720
Postage	...	...	...	...	700
Freight	...	...	...	...	20
Meetings	...	...	...	...	80
Contingencies	...	...	...	...	200
Books	...	...	...	...	1,500
Local Periodicals	...	...	...	...	90
Binding	...	...	...	...	600
Coins	...	...	...	...	100
Journal, Part I	...	...	...	...	2,100
" Part II	...	...	...	...	2,000
Proceedings	...	...	...	...	1,000
Printing of Circulars	...	...	...	...	150
Assistant Secretary's bonus for Library Catalogue	...	...	...	...	600
					Rs. 14,378

In addition to the ordinary expenditure a sum of Rs. 2,300 will be required to pay for the Centenary review. During the past year, nearly Rs. 1,400 were paid for the Catalogue, which has already been issued to the members, and a further sum of about Rs. 950 was given for the printing of a portion of the Centenary review.

London Agency.

Messrs. Trübner and Co.'s statement of account with the Society for the year 1883 showed a balance in our favour of £16-4-2½.

Their sales of the Society's publications during the same period amounted to £64-1-6 and of the Bibliotheca Indica to £23-15-7½.

During the year 1884, 18 Invoices of Books purchased and of publications of various Societies sent in exchange were received from Messrs. Trübner and Co. The value of the books purchased amounted to £104-8-2.

The number of copies of parts of the Journal, Proceedings, and Bibliotheca Indica sent to Messrs. Trübner and Co. for sale was 365, 270, and 624 respectively.

Library.

The additions to the Library numbered 2,042 volumes or parts of volumes. Of these 798 were purchased, and 1,244 presented or received in exchange.

The Council have at length much pleasure in announcing the publication of the Library Catalogue which was issued in the second quarter of the year. Great credit is due to the late Assistant Secretary Mr. Bion for his exertions in its compilation, and the Council have, in recognition of his services, awarded him a bonus of Rs. 600. The Council are also under great obligations to Mr. H. B. Medicott and Dr. Hoernle for their careful supervision of the work both during its compilation and during its progress through the press.

Publications.

Four Nos. of the Journal, Part I, and two of Part II, were published during the year, containing 444 and 186 pages of letter-press, and 7 and 10 plates respectively. A third No. of Part II, with 4 plates, is nearly ready.

Eleven Nos. of the Proceedings containing 215 pages of letter-press and 2 plates were also published.

Building.

The total amount spent on the building in 1884 was Rs. 902-8-0, and provided for repairs to the outhouses and to the exterior of the Society's premises.

Coin Cabinet.

The additions to the Cabinet have been very few in 1884, the total number of coins added being 25, *viz.* 5 gold and 20 silver. All were purchased at a total cost of Rs. 140, no coin having been presented during the past year.

Of the 5 gold coins, found at Chindwarrah, Nerbudda district, Central Provinces, one was of the reign of Alamgír II, Azíz-ud-dín, two others of the reign of Aurangzib, dates 1106 and 1110, the fourth and fifth of the reign of Muhammad Sháh of the year 1144 and 11(43). All these are apparently new or unpublished types, except the last which is described in Marsden's *Numismata Orientalia*, p. 667 No. DCCCCXXI.

Of the silver coins, eight were of Menander found in a Jahrian village, in the Amritsar division; five were of the common so-called Indo-Sassanian kind, found at Fatehgurh and seven were of Rafi-ud-derjat and Farakhsir, found at Etawah.

Secretary's Office.

In June 1884, the Society sustained a great loss by the death of Dr. W. H. McCann, their General Secretary. Mr. F. E. Pargiter was appointed in his place and has continued to hold it since.

Mr. Wood-Mason returned from Europe in May, and resumed charge of the office of Natural History Secretary from Mr. L. de Niceville, who had been appointed to officiate in October 1883.

Dr. Hoernle, the Society's Philological Secretary, was absent on three months' leave from April to July, and Mr. C. H. Tawney officiated during the interval.

Mr. F. W. Peterson has continued to act as Treasurer throughout the year.

Mr. W. A. Bion, the Assistant Secretary was absent on seven months' leave from April to October, during which period Mr. J. F. Duplessis was appointed to officiate for him. Mr. Bion returned in November, but in December resigned the service for better prospects elsewhere, when Mr. Duplessis was appointed to fill the vacancy permanently.

Mr. J. H. Elliott has held the post of Assistant Librarian throughout the year, Babu Nritya Gopal Basu that of Cashier and Babu Amrita Lal Das that of Copyist.

Bibliotheca Indica.

Twenty-six fasciculi were published during the year: nine in the Arabic-Persian Series and seventeen in the Sanskrit Series. They belong to thirteen different works, of which three are in the former

and ten in the latter Series, each Series containing one *new* publication, *viz.*, the translation of the Muntakhab-ut-Tawárikh and the text of the Tattva Chintámaṇi respectively. One of the Sanskrit Series, *viz.*, Káman-daki's Nítisára has been completed ; another the Kathá Sarit Ságara has also been practically completed, there only remaining the index to be published, which will appear shortly.

A. Arabic-Persian Series.

1. Of the إِسْأَبَاح or Biographical Dictionary of persons who knew Muḥammad by Ibn Hajar, one fasciculus has been published by Maulvi Abdul Hai, being the sixth of the third volume. It carries the list of "male witnesses" down to number 1494, at the beginning of *Kaf* (كثير).

2. Of the اَكْبَارِنَامَهِ, edited by Maulvi Abdur Rahím, of the Calcutta Madrasah, six fasciculi have been published, continuing the history of Akbar down to the year 994.

3. Of the annotated English translation of the second volume of MUNTAKHAB-UT-TÁWÁRIKH, which had been announced in the Annual Report for 1882 (see Proc. Feb. 1883) the first two fasciculi were published by the Rev. W. H. Lowe, M. A., of Cambridge, in the course of the past year. The text, in three volumes, has already been published by the Society ; and an English translation of the first volume, to be published *pari passu* with the second, is in course of preparation.

B. Sanskrit Series.

4. The joint editors, Pandits Yogeśwara Smṛitiratna and Kámá-khyánátha Tarkaratna, have advanced their edition of Hemádri's CHATURVARGA CHINTÁMAṆI by three fasciculi which belong to the first part of the Society's third volume, being the fifth part (or Pañśesha Khaṇḍa) of the work itself.

5. Pandit Satyavrata Sámaśramí has continued the second volume of his annotated edition of the well-known NIRUKTA glossary by the issue of three fasciculi.

6. Professor Dr. R. Garbe of Königsberg, likewise, has continued the second volume of his edition of the important ÁPASTAMBA ŚRAUTA SÚTRA by the issue of two more fasciculi. One more fasciculus, which is ready, will complete this volume.

7. Mr. C. H. Tawney, M. A., Principal of the Presidency College has published three fasciculi of his annotated English translation of the KATHÁ SARIT SÁGARA. These complete the second volume. One more fasciculus remains which will contain the indexes.

8. Of the **PARÍŚIṢṬA PARVAN** or **STHAVIRÁVALI CHARITRA** by Hemachandra, a Jain work in Sanskrit verse on the first twelve Sthaviras or Patriarchs, Professor Dr. H. Jacobi, of Münster, has published another fasciculus.

9. Of the **PARÁŚARA SMṚITI**, likewise, Pandit Chandrakánta Tarká-lankára has issued another fasciculus.

10. The **MÍMÁMSÁ DARŚANA** with Savara Svámi's Commentary has been continued by Pandit Maheśa Chandra Nyayaratna, the Principal of the Sanskrit College, who has published one fasciculus.

11. The same learned editor has also issued one more fasciculus of his edition of the **TAITTIRÍYA SAMHITÁ** with the commentary of Mádhava Achárya.

12. The Society's edition of the **NÍTISÁRA** by Kámandakí has at last been brought to a close. The work was first commenced in 1849 by Dr. R. Mitra, who published the text in two fasciculi. Subsequently a Commentary was added of which Pandit Ráma Náráyana prepared one fasciculus, and, after his death, Pandit Jaganmohana published a second fasciculus in 1875. And now the third and last fasciculus has been published by Pandit Kámákhyánátha Tarkaratna. The work treats of the political maxims of Chánakya, the minister of Chandra-Gupta, and is compiled by the minister's disciple Kámandakí.

13. Of the **TATVA CHINTÁMAṆI**, which was commenced during the past year, Pandit Kámákhyánátha Tarkaratna has published one fasciculus.

The following works are in a more or less forward state of publication :

1. **ṬABAQÁT-I-NÁŠIRÍ** (Index of persons and places). 2. **LALITA VISTARA** (Translation). 3. **PRÁKṚITA LAKṢHAṆA** (Translation and Notes). 4. **PRITHIRÁJ RÁSAU** (Text and Translation). 5. **KATANTRA** (Introduction). 6. **BṚIHADDEVATÁ** (Text). 7. **PRÁKṚITÁDHYÁYA** (Text and Translation). 8. **CHARAKA** (Translation with Notes). 9. **NAQÁID** (Text). 10. **LÁMÍYYET-EL-ARAB** (Text and Translation).

The undermentioned new works have been sanctioned for publication :

1. Sanskrit.

1. The **NYAYA VÁRTIKA** of Udyotkara Mísra. This work gives an exposition of the meaning of what is said, of what is left unsaid, and of what is ill or imperfectly said in the Nyáya Aphorisms of Gautama. It is held in high repute, but is exceedingly scarce. There are three or four MSS. available, one of which is an excellent one, old and very correct. The work will be edited by Pandit Vindhyeswarí Prasáda Dviveda of Benares.

2. The *KĀLA VIVEKA*, by Jímúta Váhana, the author of the *Dáyabhága*. It is a treatise on appropriate times for religious ceremonies. Its astronomical disquisitions are of great value, and it is accepted as the leading authority on the subject it treats of. It will be edited by Pandit Madhu Súdana Tarkaratna, a Professor of the Sanskrit College, from several MSS.

3. The *VIVĀDA RATNĀKARA*, a digest of the laws relating to Jurisprudence. It is held in high repute. Some six or seven MSS. are available, and the edition will be prepared by Pandit Dína Náth Nyáyaratna, a Professor of the Sanskrit College.

4. The smaller commentaries of the *Vedánta Súra*. There are five of these: 1st, *Vallabha Bháshya*, which expounds the system of Epicurianism of the Hindús; 2nd, *Rámánúja Bháshya*, which holds the human soul to be a creation of the Divinity; 3rd, *Vishṇu Bháshya*, which holds that the human soul is a reflection of the Divine one; 4th, *Nemárka Bháshya*, which holds the human soul to be subordinate to the Divine one, and 5th, the *Mádhava Bháshya*, which teaches that the human soul is essentially and eternally distinct from the Divine one. These different theories have been all deduced from the *Vedánta*, and illustrate in a remarkable manner the different phases of philosophical thought among the Hindús. They are in fact protests against the theory of Sankara. All these five works are short; but at present there are only in the case of the two first mentioned sufficient MSS. available to proceed to an edition. These two editions will be entrusted to Pandit Hema Chandra Tarkaratna and Pandit Rámánátha Tarkaratna respectively.

5. The *KĀLA MÁDHAVĪYA* of Mádhava Achárya. This will form a sequel to the same author's *Parásara Mádhava*, which is now in course of publication. It will be edited by Pandit Chandrakánta Tarkálankára, from a large number of MSS.

6. The *YOGINĪ TANTRA*, containing a history of Assam and Kúch Bihár. It will be edited by Mr. G. A. Grierson, C. S., from six MSS.

7. The *NĀRADA SMṚITI*, one of the standard authorities on Hindú Law. It is unique in interest, because no other Smṛiti is known to contain equally copious rules on judicial procedure and civil law. It will be edited by Professor J. Jolly, of Würzburg, from six good MSS. The text will be accompanied by the commentary of Asakáya, as far as the latter goes.

8. A *MANU TĪKĀ SANGRAHA* or Extracts from various old Commentaries on Manu's law-book, also by Professor J. Jolly of Würzburg.

9. The *SĀNKHĀYANA ŚRAUTA SÚTRA*, to be edited by Professor A. Hillebrandt of Breslau.

10. Brahma Gupta's *KARAṆA GRANTHA*, the so-called *Khaṇḍa Khádyá*, to be edited, with a translation and notes, by Dr. G. Thibaut.

The three last mentioned works had been sanctioned in 1883 (see Proc. for June, p. 109).

11. The *SVAYAMBHŪ PURĀṆA*, a Buddhist history of Nepal and

12. The *ASHTASĀHASRIKA PRAJÑĀ PĀRAMITĀ*.

The Society possesses one MS. of each of the two last mentioned works; that of the latter being very old and remarkably correct. As soon as one or two more MSS. have been procured, their publication will be taken in hand.

2. *Persian.*

13. The *SAFARNĀMAH* by Maula Sharfuddīn Alī Yazdī. It gives the history of Tīmūr, and is a large work. There are six MSS. in the Society's library, from which it will be edited by Maulvi Illāhdād, late 2nd Professor of the Calcutta Madrasah.

14. The *TĀRÍKH I FĪRŪZ SHĀHĪ*, by Shams i Shiráz Uffī, a history of Tīmūr Shāh. Another history, bearing the same name and written by Zīā o Barnī has already been published by the Society. This second work is an exceedingly rare one, and, if anything, more valuable than the one already published. There is at present one MS. available, which belongs to the Society; but there is every hope of one or two more being procurable from Lucknow and Rāmpur. As soon as these have been obtained, the edition will be proceeded with by Maulvi Abūl Khair, Professor of Arabic and Persian in the Madrasah College, to whom it has been entrusted.

15. An English annotated translation of the first volume of the *MUNTAḤḤAB-UT-TĀWĀRÍKH*, by Abdūl Qādir, the Badāonī. It will be prepared uniformly with Mr. Lowe's translation of the second volume, which is at present in course of publication. Maulvi Abūl Khair, of the Madrasah College, has been entrusted with the work.

16. The *TĀJŪL MA'ASIR* by Hasan Nizāmī, one of the oldest Muhamadan histories of India, treating of the reigns of Qutb-ud-dīn Ibak and Shams-ud-dīn Iltimish.

17. The *TĀRÍKH I WASSAF* by the so-called Wassáf ul Hazrat a sort of general history of the Muhammadan world.

At present only one copy of each of the last two works is available. They are in the possession of the Society. A search is being made for other MSS., after receipt of which the editions will be taken in hand.

18. An English translation with notes of the *TĀRÍKH I YĀMINĪ* by Mr. L. White King, C. S.

Of the works in course of publication in 1885, the outturn may be reckoned at 40 fasciculi which, at the average rate of Rs. 432 for each, will cost Rs. 17,280. The average income being Rs. 13,695, there will be an excess of expenditure of Rs. 3,585 which represents the amount by which the unspent balance of Rs. 21,409 may be reduced.

The following is a detailed list of the publications issued in 1884.

Arabic-Persian Series.

1. IṣĀBAH, edited by Maulvi Abdul Hai of the Calcutta Madrasah, No. 249 (old Series) fasc. XXV, Vol. III, No. 6.
2. The AKBARNÁMAH by Abul-Fazl i Mubárak i Allami; edited by Maulvi 'Abdur Rahím, Professor, Calcutta Madrasah; Nos. 502, 503, Vol. III, Fasc. III: Nos. 514, 515, Fasc. IV; Nos. 524, 525, Fasc. V.
3. MUNTAQĤAB-UT-TÁWÁRIQĤH, by Abdul-Qádir Bin Maluk Sháh, known as Al-Badaoni, translated from the original Persian by W. H. Lowe, M. A., Hebrew Lecturer, Christ's College, Cambridge; Nos. 501, 521, Fasc. I, II.

Sanskrit Series.

4. CHATURVARGA CHINTÁMAṆI by Hemadri, edited by Pandits Yogesvara Smritiratna and Kámákhyánátha Tarkaratna; Nos. 504, 516, 518, Part I, Fasc. VII, VIII, IX.
5. NIRUKTA, with Commentaries, edited by Pandit Satyavrata Sámaśrami; Nos. 506, 508, 517, Vol. II, Fasc. II, III, IV.
6. ÁPASTAMBA ŚRAUTA SÚTRA, belonging to the Black Yajur Veda, with the commentary of Rudradatta, edited by Dr. Richard Garbe, Professor of Sanskrit in the University of Königsberg, Nos. 507, 520, Vol. II, Fasc. VIII, IX.
7. KATHÁ SARIT SÁGARA, or Ocean of the Streams of Story, translated from the original Sanskrit by C. H. Tawney, M. A., Principal, Presidency College; Nos. 509, 519, 523, Vol. II, Fasc. XI, XII, XIII.
8. ŚTHAVIRÁVALI CHARITRA or PARÍŚIṢṬA PARVAN being an appendix of the Trishashṭi Laláka Purusha Charitra by Hemachandra; edited by Dr. Hermann Jacobi, Professor of Sanskrit and Comparative Philology in the Academy of Münster, Westphalia; No. 513, Fasc. II.
9. PARÁSÁRA SMṚITI, by Pandit Chandrakánta Tarkálankára; No. 505, Fasc. II.
10. MÍMÁMSÁ DARŚANA, with the commentary of Savara Svámin; edited by Maheshachandra Nyayaratna; No. 510, Fasc. XVII.
11. SAMHITÁ of the Black Yajur Veda, with the commentary of Mádhave Achárya; edited by Maheshachandra Nyayaratna; No. 522, Fasc. XXXIII.
12. NÍTISÁRA or Elements of Polity, by Kámandaki, with a commentary; edited by Pandit Kámákhyánátha Tarkaratna; No. 511, Fasc. V.
13. TATTVA CHINTÁMAṆI, edited by Pandit Kámákhyánátha Tarkaratna; No. 512, Fasc. I.

Centenary Meeting.

The Report for the past year would not be complete without a brief account of the Centenary Meeting.

This Special Meeting to celebrate the Hundredth Anniversary of

the Society was held on the 15th January, 1884, at 7-30 P. M., the Hon'ble H. J. Reynolds, B. A., C. S., President, in the Chair.

Six gentlemen, proposed at the last meeting of Council, were unanimously elected Special Centenary Honorary Members, on account of their distinguished services to various branches of Science. Their names have been already mentioned in a previous portion of the report.

A review of the Society's History during the century of its existence was laid upon the table, and a vote of thanks passed to the Compilers.

Addresses were then read from learned Societies, congratulating the Society on the celebration of its Centenary.

The Meeting was followed by a dinner, at which were present a large number of Members.

Among the guests were the Marquess of Ripon, Viceroy and Governor-General of India, Archbishop Goethals, Lieutenant-General T. F. Wilson, Professor Monier Williams, and several other gentlemen.

Among the toasts proposed were :

The Queen-Empress.

The Viceroy and Governor-General by the President.

The Viceroy returned thanks, and proposed

The Asiatic Society of Bengal, coupling with it the name of the President.

In replying, the Hon'ble H. J. Reynolds gave a brief sketch of the labours of the Society during the past hundred years, and concluded by proposing "Our Guests," coupling with it the name of Professor Monier Williams.

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.

- * Allahabad :—Editor, Pioneer.
- § American Philological Association.
- * Amsterdam :—Royal Zoological Society.
- * Angers :—Société d' Etudes Scientifiques d' Angers.
- * Baltimore :—Johns Hopkins University.
- * Batavia :—Society of Arts and Sciences.
- § ——— :—Magnetic and Meteorological Observatory.
- * ——— :—Kon. Naturkundige Vereeniging in Nederlandsch-Indië.
- * Berlin :—Royal Academy of Sciences.
- § ——— :—Entomologischer Verein.
- § Birmingham :—Birmingham Philosophical Society.
- * Bombay :—Bombay Branch, Royal Asiatic Society.
- * ——— :—Editor, Indian Antiquary.

- * Bombay :—Editor, Times of India.
- * Boston :—Natural History Society.
- * Bordeaux :—L' Académie Nationale des Sciences, Belles-Lettres et Arts.
- § ——— :—Société de Géographie Commerciale.
- * ——— :—Société Linnéene.
- * Brisbane :—Royal Society of Queensland.
- † Brunswick :—Verein für Naturwissenschaft.
- * Brussels :—L' Académie Royale des Sciences.
- * ——— :—Musée Royal d' Histoire Naturelle de Belgique.
- * ——— :—Société Entomologique de Belgique.
- * ——— :—Société Royale Malacologique de Belgique.
- § Buda Pest :—Royal Hungarian Academy of Sciences.
- * Buenos Ayres :—Public 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.
- * ——— :—Indian Mirror.
- * ——— :—Indian Museum.
- † ——— :—Mahommedan Literary Society.
- † ——— :—Public Library.
- * ——— :—Tuttobodhini Shova.
- † ——— :—University Library.
- † Cambridge :—University Library.
- † Cassel :—Der Verein für Naturkunde.
- † Cherbourg :—La Société Nationale des Sciences Naturelles.
- † Christiania :—University Library.
- * Clinton :—Editor, American Antiquarian and Oriental Journal.
- * Colombo :—Ceylon Branch, Royal Asiatic Society.
- * Copenhagen :—La Société Royale des Antiquaires du Nord.
- † Cuttack :—Cuttack Library.
- * Dehra Dun :—Great Trigonometrical Survey.
- † Dublin :—Royal Dublin Society.
- * ——— :—Royal Irish Society.
- § ——— :—Geological Society of Dublin.
- † Edinburgh :—Royal Society.
- § ——— :—Botanical Society.
- * Florence :—Società Italiana di Anthropologia e di Etnologia.
- * Frankfurt :—Senckenbergische Naturforschende Gesellschaft.
- * Geneva :—Société de Physique et d' Histoire Naturelle.
- † Genoa :—Museo Civico di Storia Naturale.

- * Graz :—Naturwissenschaftlichen Verein für Styria.
- § Hague :—Koninklijk Instituut voor de Taal-Land-en Volkenkunde van Nederlansch-Indië.
- * Hamburg :—Naturhistorisches Museum zu Hamburg.
- * Halle :—Deutsche Morgenländische Gesellschaft.
- † — :—Die Kais. Leopoldinische-Carolinische Akademie.
- * Havre :—Société de Géographie Commerciale du Havre.
- * Helsingfors :—Société des Sciences de Finlande.
- § Ithaca (U. S. A.) :—Cornell University.
- * Königsberg :—Die physikalisch-Oekonomische Gesellschaft.
- * Lahore :—Editor, Civil and Military Gazette.
- § — :—Anjuman-i-Panjab.
- † — :—Agricultural Society.
- † Leyden :—Royal Herbarium.
- † Liège :—La Société Géologique de Belgique.
- † — :—La Société des Sciences.
- § Lille :—Société de Géographie.
- § Lisbon :—Geographical Society.
- † Liverpool :—Literary and Philosophical Society.
- * London :—Anthropological Institute.
- * — :—Editor, Academy.
- * — :—Editor, Athenæum.
- * — :—British Museum.
- * — :—Geological Society.
- * — :—Institution of Civil Engineers.
- * — :—Institution of Mechanical Engineers.
- * — :—Editor, Nature.
- * — :—Linnean Society.
- * — :—Royal Asiatic Society of Great Britain and Ireland.
- * — :—Royal Astronomical Society.
- * — :—Royal Geographical Society.
- * — :—Royal Institution.
- * — :—Royal Microscopical Society.
- * — :—Royal Society.
- * — :—Society of Telegraph Engineers.
- * — :—Statistical Society.
- * — :—Zoological Society.
- † Lyons :—La Société d' Agriculture, Histoire Naturelle et Arts Utiles.
- * — :—Le Muséum d' Histoire Naturelle.
- * — :—La Société d' Anthropologie.
- § — :—La Société de Géographie.
- † Madras :—Literary Society.

- * Madras :—Government Central Museum.
- † Manchester :—Literary and Philosophical Society.
- § Melbourne :—Royal Society of Victoria.
- * Moscow :—Société Impériale des Naturalistes.
- * ——— :—Imperial Society of Amateurs of Natural Sciences, Anthropology and Ethnology.
- * Munich :—K. Bayerische Akademie der Wissenschaften.
- * ——— :—Editor, Repertorium der Physik.
- † Netherlands :—Royal Society.
- † New Haven :—Connecticut Academy of Arts and Sciences.
- § ——— :—American Oriental Society.
- † Ottawa :—Geological and Natural History Survey of the Dominion of Canada.
- † Oxford :—Bodleian Library.
- † ——— :—Indian Institute.
- * Paris :—La Société de Géographie.
- * ——— :—Société d, Anthropologie.
- * ——— :—Société Asiatique.
- † ——— :—National Library.
- * ——— :—Société Zoologique.
- * ——— :—Société Académique Indo-Chinoise.
- § ——— :—Institution Ethnographique.
- * Philadelphia :—Academy of Natural Sciences.
- § ——— :—American Philosophical Society.
- * Pisa :—Società Toscana de Scienze Naturali.
- § Prague :—K. K. Sternwarte.
- § Princeton :—Princeton College.
- § Rio de Janeiro :—Museu Nacional.
- § Rome :—Società degli Spettroscopisti Italiani.
- § ——— :—R. Accademia dei Lincei.
- § Roorkee :—Editor, Professional Papers on Indian Engineering.
- § St. Petersburg :—Comité Géologique.
- † ——— :—Imperial Library.
- * ——— :—Russian Geographical Society.
- * ——— :—Académie Impériale des Sciences.
- § ——— :—Hortus Petropolitanus.
- * San Francisco :—Californian Academy of Arts and Sciences.
- * Schaffhausen :—Swiss Entomological Society.
- † Shanghai :—North China Branch, Royal Asiatic Society.
- * Simla :—United Service Institution of India.
- † Stettin :—Entomological Society.
- † Stockholm :—Royal Swedish Academy of Sciences.

- * Sydney :—Royal Society of New South Wales.
- * Toronto :—Canadian Institute.
- * Trieste :—Società Adriatica di Scienze Naturali.
- * Turin :—Reale Accademia delle Scienze.
- † Ulwar :—Ulwar Library.
- * Vienna :—Anthropologische Gesellschaft.
- § ——— :—K. K. Central-anstalt für Meteorologie und Erdmagnetismus.
- * ——— :—K. K. Akademie der Wissenschaften.
- * ——— :—K. K. Geologische Reichsanstalt.
- * ——— :—K. K. Zoologisch-Botanische Gesellschaft.
- § ——— :—Ornithologische Verein.
- * Washington :—Commissioners of the Department of Agriculture.
- * ——— :—Smithsonian Institution.
- § ——— :—U. S. Army Signal Service.
- * ——— :—United States Geological Survey.
- § ——— :—U. S. Coast and Geodetic Survey.
- * Wellington :—New Zealand Institute.
- * Württemberg :—Natural History Society.
- * Yokohama :—Asiatic Society of Japan.
- § ——— :—Editor, Chrysanthemum.
- * ——— :—German Oriental Society.
- * Zagreb :—Archæological Society.

ABSTRACT OF COUNCIL PROCEEDINGS.

January 31st. Ordinary Meeting.

Congratulatory addresses on the approaching celebration of the Society's Centenary were read from the following Societies :

Royal Prussian Academy of Sciences, Berlin.

German Oriental Society, Halle.

Royal Asiatic Society, London.

Royal Institute for the Philology, Geography and Ethnology of Netherlands-India, the Hague.

Royal Zoological and Anthropological, Ethnological Museum, Dresden.

It was ordered that the receipt of the addresses be acknowledged with thanks, and that a copy of the report of the Centenary Meeting be sent to those Societies.

* 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.

An exchange of publications was sanctioned with the Comité Géologique, St. Petersburg.

A letter was read from Professor J. Jolly, promising to send, at an early date, the MS. of his edition of the Selections from the Commentaries of Mann.

An application from the Straits Branch of the Royal Asiatic Society, for permission to republish Selections from the Asiatic Researches and the Society's Journal, was sanctioned.

It was resolved to subscribe for 2 copies of the "Punjab Notes and Queries" and of the Popular Edition of the Asiatic Researches.

An offer from Mr. J. F. Fleet to purchase one of the six copies left in stock of the Rajatarangani was accepted.

It was resolved that the report of the Centenary Meeting and of the Speeches at the Centenary Dinner be published in a Special No. of the Proceedings and also in the Centenary Review. Also that the three parts of the Review be bound together, and that each Editor receive 20 copies of the bound volume.

The Annual Report was read and approved; and the annual accounts for 1883 with the estimate of Receipts and Expenditure for 1884 were laid on the table.

Mr. J. Westland and Major J. Waterhouse were appointed Auditors of the annual accounts.

February 5th. Special Meeting.

The annual accounts for 1883 and the Budget Estimate of Income and Expenditure for 1884 were submitted and passed.

Mr. Bion, the Assistant Secretary, was granted seven months' leave from 1st April, provided the Catalogue and the Centenary Review were then satisfactorily completed.

February 28th. Ordinary Meeting.

Read a letter from the Meteorological Reporter to the Government of India, stating that he believed that the first part of "Die Temperatur Verhältnisse der Russischen Reiches," intended for his department, had by mistake been addressed to the Asiatic Society. It was ordered that the volume be transferred to the Meteorological Office Library.

At the suggestion of Messrs. Trübner and Co., it was resolved that all foreign periodicals should in future be sent through them instead of direct from the publishers.

The various Committees for the ensuing year were elected.

The Honorable H. J. Reynolds was elected a Trustee of the Indian Museum, on behalf of the Society, *vice* Mr. Eliot, resigned.

It was ordered that 100 copies of the Special Number of the Centenary Proceedings be printed separately for sale.

• *March 27th. Ordinary Meeting.*

A letter was read from the Dewan to the Nawab Nazim of Murshedabad, remitting Rs. 300, as a compounding fee for his admission as a Life Member.

A donation of Rs. 300 to the Society's funds from the Hon'ble Raja G. N. Gazpatee Row was acknowledged with thanks.

On an application from the Director of the Indian Institute, Oxford, it was ordered that a copy of the Society's publications and the publications of the Bibliotheca Indica be presented to the Institute.

An offer from Mr. J. Beames to publish in the Journal a paper he was preparing on the Geography of India during the reign of Akbar was accepted.

The appointment by the Secretary of Mr. J. F. Duplessis, as Offg. Assistant Secretary, during the absence on leave of Mr. Bion, was approved.

May 1st. Ordinary Meeting.

On the recommendation of the Philological Secretary, Pandit Hemachandra was authorized to print his edition of the "Atharvana Upanishad" at his own press, the "Valmiki."

Letters were received from Dr. Joule, Monsieur Sénart, Professors Hacckel and Sayce, conveying their thanks for the great honour conferred on them by the Society in electing them Special Honorary Centenary Members; the letters were ordered to be read at the next meeting of the Society.

Read the Minutes of the Philological Committee regarding the large balance at the credit of the O. P. Fund. The Philological Secretary was instructed to make special arrangements for fresh publications.

It was resolved to subscribe to one copy of an Austrian monthly journal, the "Oesterrische Monatschrift für der Orient."

Mr. Tawney was elected a Member of Council, and was also asked if he would take up the work of the Philological Secretary during the absence on leave for 3 months of Dr. Hoernle.

A letter from Mr. Cecil Bendall, of the British Museum, asking the Society to try to gain subscribers to the facsimile reproductions of the Palæographical Society, was ordered to be read at the next meeting.

May 29th. Ordinary Meeting.

An advance for Rs. 300 to Dr. R. L. Mitra was sanctioned for the purchase of a large number of Jain Manuscripts.

A letter from Mr. Charles Meldrum, in charge of the Mauritius Observatory, thanking the Society for the honour done to him by his election as a Special Centenary Honorary Member was ordered to be read at the next General Meeting.

An exchange of publications was sanctioned with the "Naturwissenschaftlichen Vereins" of Styria.

A presentation of the Proceedings of the Birmingham Philosophical Society was accepted with thanks.

A letter from Mr. F. K. Hervey, expressing a wish to obtain a photograph of an undeciphered inscription on a Singapore Stone presented to the Society in 1848, was ordered to be transferred to the Trustees of the Indian Museum.

On the proposal of Mr. Tawney, it was ordered that a copy of the Sanskrit Series of the Bibliotheca Indica be presented to Mr. Cecil Bendall of the British Museum and to Dr. Hjalmar Edgren of Lund, Sweden.

The Secretary reported that the Library Catalogue was at last published and was being distributed to Members.

Mr. Wood-Mason reported he had returned from furlough, and had relieved Mr. de Nicéville who had officiated during his absence.

A vote of thanks to the latter was unanimously recorded.

June 26th. Ordinary Meeting.

Presentations from Mr. Charles Meldrum, in charge of the Observatory, Mauritius, and from Dr. G. Badaloni, Member of several Italian Medical Societies, of several of their publications were accepted with thanks.

An exchange of publications with the Society of Amateurs of Natural Sciences, Anthropology and Ethnology, of Moscow, was sanctioned.

It was resolved to subscribe for one copy of a German publication, the "Literatur-Blatt für Orientalische Philologie."

A letter from the President of the American Association for the advancement of Science, inviting members to attend their annual meeting to be held in Philadelphia on the 3rd September, was ordered to be communicated to the Society, with a recommendation that an application be made to Government for permission to depute Major Waterhouse to represent the Society.

Messrs. Trübner and Co. were accorded permission to return part of their stock of the Bibliotheca Indica, Arabic and Persian Series, which had a very small sale in Europe, and also part of the Journal stock from 1832 to 1870.

A proposal from Mr. G. A. Grierson to edit the "Yogini Tantra" was accepted on the recommendation of the Philological Committee.

In reply to an application from the "Société de Géographie Commerciale du Havre" for an interchange of publications, it was ordered that a copy of the Proceedings be sent.

On the proposition of the Natural History Secretary, it was resolved that the Council propose to the Society at their next meeting, that Mr. F.

Moore be elected an Associate Member on account of his contributions to Indian Entomology.

The price of the New Library Catalogue to non-members was fixed at Rs. 3-8 per copy.

The Philological Secretary having announced the death on the 22nd June of Dr. H. W. McCann, the General Secretary, it was resolved that Mr. F. E. Pargiter be asked to fill the post thus left vacant.

Major J. Waterhouse kindly offered to carry on the work until Mr. Pargiter's acceptance had been received.

The Council placed on record their sense of the loss the Society has sustained by the untimely death of Dr. McCann, and their deep regret at the sad event which has deprived it of an energetic and valuable officer and a most esteemed colleague.

July 31st. Ordinary Meeting.

A letter from Mr. W. A. Holwell, Quebec, enclosing photographs of the late Governor Holwell, and requesting that a copy of Mr. Bayne's paper on the further excavations of old Fort William be sent to him when published, was ordered to be read at the next General Meeting.

It was resolved that the unexpended balance of a sum of Rs. 1000, which had been placed to the credit of the Society by the late Dr. Muir for publishing an English translation of Sankara Acharya's commentary on the Aphorisms of the Vedanta, be returned to the Trustees of his estate.

The Secretary reported that Messrs. Trübner and Co.'s accounts for 1883 had been examined and found correct, with the exception of a few trifling discrepancies which they had been asked to rectify.

It was resolved to subscribe to one copy each of two works edited by Captain R. C. Temple, *viz.*, " 'Umdat-ut-Tawárikh " and a Dictionary of Hindustani Proverbs.

A letter was read from the Government of India stating that the cost of a copy of the Isabah, which the Society had applied for, would be £41. It was resolved not to proceed further in the matter, as there was no guarantee that the copy would be a correct one.

Major J. Waterhouse reported that, being unable to obtain leave to represent the Society at the Meeting of the American Association for the Advancement of Science, he had asked Mr. W. T. Blanford to act as the Society's representative on the occasion.

Mr. Pargiter's acceptance of the post of General Secretary was recorded; and his election as a Trustee of the Indian Museum confirmed.

Professor Jolly's proposal to edit the Narada Smriti in the Bibliotheca Indica was accepted.

On the recommendation of the Philological Secretary, the publication of 11 Sanskrit and 6 Persian works was sanctioned in the Bibliotheca Indica. A detailed list with full particulars will be found under the section "Bibliotheca Indica."

Mr. John Boxwell, Maulvi Khudabuksh Khan and Colonel Jarrett were elected Members of the Philological Committee.

August 28th. Ordinary Meeting.

Sundry brass articles, presented by Lieut.-Col. Malcolm G. Clerk were ordered to be transferred to the Indian Museum.

A letter was read from Kaviraj Samal Das Ji of Oodeypore asking for the loan of a large number of Persian and Arabic Manuscripts. It was resolved that the rule, which restricted to two the number of MSS. that could be lent out, could not be relaxed.

A letter was read from Professor Monier Williams thanking the Society for the presentation to the Indian Institute of a complete collection of the Society's publications.

At the suggestion of the Philological Secretary, Moulvi Abdul Khair was authorized to undertake the Tarikh-i-Firoz Shahi (already sanctioned by Council) instead of the Tusak-i-Timuri, with which he could not proceed for want of Manuscripts.

A proposal from Mr. G. A. Grierson to affiliate to the Society the Bihar Branch, which it was intended to establish in Patna, was agreed to.

On the recommendation of the Natural History Committee, it was resolved that a copy of all the publications issued in connection with the International Fisheries Exhibition in South Kensington be purchased for the Society's Library.

An exchange of Journal, Part II, with the Proceedings of the Royal Society of Queensland was sanctioned.

Dr. Rájendralala Mitra having rendered an account of the advances made to him up to date, a further advance of Rs. 800 was sanctioned.

Babu Pratapa Chandra Ghosha was elected a Member of Council.

October 30th. Ordinary Meeting.

A letter from Mr. Rivett-Carnac, enclosing his paper on Sankissa with illustrative sketches, was ordered to be brought up early next year.

A letter from Mr. F. Moore, expressing his thanks for his election as an Associate Member, was ordered to be read at the Society's next Meeting.

An exchange of the Society's Journal, Part II, with the Bulletin of the Société Entomologique de Belgique was sanctioned.

An estimate for printing 500 copies of a single Fasciculus of the Bibliotheca Indica for Rs. 154, paper included, from Babu Harishchandra Kaviratna was accepted.

An exchange was sanctioned of the Society's Proceedings and Journal, Part II, with the "Boletin" and "Actas" of the Academia Nacional de Ciencias of the Argentine Republic, and a similar exchange with the publications of the Natural History Museum of Hamburg.

An exchange of the Society's Journal, Part I, and Proceedings was offered with the "Annales" of the Musée Guimet, Lyon.

An exchange of the Society's Proceedings with the Bulletin of the Société d'Etudes Scientifiques d'Angers was also sanctioned.

The Philological Secretary reported that a silver coin received from Col. Clerk had been lost by a peon of Messrs. Newman and Co., who had been charged to prepare a wood-cut, and that they had been informed that they would be held responsible for the loss.

A copy of the correspondence was sent to Col. Clerk, and Messrs. Newman were asked for an account of what had since transpired.

An offer from Dr. Behari Lall Gupta to continue the translation of the "Susruta," which has been suspended by the death of Dr. Uday Churn Dutt, was accepted.

The publication in the Bibliotheca Indica of a translation of the Tarikh-i-Tamini by Mr. L. White King was sanctioned.

The Society's Proceedings and Journal, Part II, were ordered to be sent to the Natural History Section of the British Museum, South Kensington, in addition to the copy sent to the Library in Bloomsbury.

Mr. H. Beverley was elected a Member of Council.

November 27th. Ordinary Meeting.

Read an extract from the Proceedings of the Government of India in the Home Department, regarding alterations in the Treasure Trove Act. It was resolved that a list be kept in which members interested in numismatic research may inscribe their names.

The Editorship of the Prithiraj Rasau was at Dr. Hoernlo's request transferred to Pandit Gopal Sastri of Benares.

Extracts from Major Macgregor's "Notes on Akas and Akaland" presented by the author were ordered to be read at the next meeting of the Society, and published in the Proceedings.

Mr. H. B. Medlicott was elected a Member of Council.

Mr. Bion's resignation of his post of Assistant Secretary was recorded, and his application for a bonus on account of work done in compiling the Library Catalogue was ordered to be circulated to Council.

An application from Mr. Duplessis for the post about to be vacant was ordered to be circulated to Council, with others that might be received.

December 23rd. Ordinary Meeting.

Read a letter from Mr. H. F. Blanford announcing his departure from India, and tendering his resignation as President of the Society

It was resolved that as his leave was for 3 months only, his post did not become vacant.

The printing of the Ramanuja Bhashya by the Valmiki Press was sanctioned on the same terms as those agreed upon with the Girisa Vidyaratna Press.

At the suggestion of Dr. R. L. Mitra, a yearly grant of about Rs. 200 was sanctioned from the O. P. Fund for the purchase of Sanskrit, Persian and Arabic publications.

On a representation from the authors, an additional subscription of 2 guineas per copy of the "Rhopalocera Malayana" was sanctioned.

A bonus of Rs. 600 was granted to Mr. Bion for his services in connexion with the Library Catalogue; and the General Secretary was authorized to give him a Certificate expressing the Society's satisfaction with his work. The selection of a fresh Assistant Secretary was at the same time left in the hands of the General Secretary.

It was resolved to subscribe to one copy of the Rev. J. H. Knowles' Dictionary of Kashmiri Proverbs and Sayings.

A copy of Major Jarrett's translation of the "Tarikh-ul-Khulfa" was ordered to be presented to the Madrassah Library.

On a reference from the Secretary, it was ordered that the rule for submission to Council previously of the names of gentlemen proposed for Membership be observed in future.

The List of Office-bearers and Members of Council for the ensuing year was prepared for circulation to Members of the Society in accordance with Rule 44.

On the suggestion of the Secretary it was resolved that Lord Dufferin be asked to become the Patron of the Society.

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 connexion therewith.

No remarks having been made, the President moved the adoption of the Report, and proposed a vote of thanks to the Honorary Secretaries and to the Honorary Treasurer for their exertions on behalf of the Society.

The motion was unanimously carried.

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

President.

Dr. Rajendralala Mitra, C. I. E.

Vice-Presidents.

Hon. J. Gibbs, C. S., C. I. E.
 D. Waldie, Esq., F. C. S.
 H. F. Blanford, Esq., F. R. S.

Secretaries and Treasurers.

J. Wood-Mason, Esq.
 Dr. A. F. R. Hoernle.
 F. E. Pargiter, Esq., B. A., C. S.
 F. W. Peterson, Esq., F. C. S.

Other Members of Council.

Hon. J. Reynolds, B. A., C. S.
 H. B. Medlicott, Esq.
 J. Westland, Esq., C. S.
 Nawab Abdul Latif Khan Bahadur.
 Major J. Waterhouse.
 Alex. Pedler, Esq., F. C. S.
 C. H. Tawney, Esq., M. A.
 Babu Pratapa Chandra Ghosha.
 E. F. T. Atkinson, Esq., B. A., C. S.
 Dr. Mahendralal Sarkar.

The following gentlemen were appointed Auditors to examine and report on the accounts of the past year :

J. Westland, Esq., C. S.
 J. C. Douglas, Esq.

The Meeting was then resolved into the Ordinary Monthly General Meeting.

HON. J. GIBBS, C. S. I., in the Chair.

The minutes of the last meeting were read and confirmed.

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

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

1. J. W. Oliver, Esq.
2. Babu Haraprasad Sastri, M. A.
3. Pandit Maheschandra Nyayaratna.
4. Raja Surya Kanta Chaudhuri Bahadur.

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

1. Syed Ali Bilgrani, B. A., A. R. S. M., F. G. S., proposed by J. Wood-Mason, Esq., seconded by T. H. Hughes, Esq.
2. Spencer Gore-Brown, Esq., proposed by E. F. T. Atkinson, Esq., seconded by C. H. Tawney, Esq.
3. C. W. Bolton, Esq., C. S., proposed by F. E. Pargiter, Esq., B. A., C. S., seconded by Major J. Waterhouse.
4. Mr. A. F. M. Abdur Rahman, proposed by D. Waldie, Esq., seconded by Hon. J. Gibbs.
5. Kumar Nil Krishna, proposed by Nawab Abdul Latif Khan Bahadur, seconded by Hon. J. Gibbs.
6. H. M. Rustomjee, Esq., proposed by Dr. Rajendralala Mitra, seconded by Hon. J. Gibbs.
7. Babu Rajkumar Sarbadhikari, proposed by Dr. Rajendralala Mitra, seconded by H. B. Medlicott, Esq.

The Chairman reported that the Council had sanctioned the issue in *Bibliotheca Indica* of the *Prayaśchitta* portion of the Institutes of *Parásara*, to be edited by Babu Krishna Kamal Bhattacharjya.

The following paper has been received and will be read at the next meeting.

On the Kings of the Suffárian Dynasty of Nimron or Sijistan.—By MAJOR H. G. RAVERTY.

LIBRARY.

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

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

- Amsterdam. Koninklijk Zoologisch Genootschap Natur Artis Magistra,—*Bijdragen tot de Dierkunde*, Part 10, No. 1.
- _____. _____ . *Tijdschrift voor de Dierkunde*, Vol. V, Part I.
- Baltimore. Johns Hopkins University,—*American Journal of Philology*, Vol. V, No. 3.
- _____. _____ . *Circulars*, Vol. IV, No. 35.
- _____. _____ . *Studies from the Biological Laboratory*
Vol. III, No 2.
- Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—*Notulen*, Vol. XXII, Parts 2 and 3.
- _____. _____ . *Tijdschrift*, Vol. XXIX, Parts 5 and 6.

- Berlin. Entomologische Verein,—Zeitschrift, Vol. XXVIII, No. 2.
 ———. K. preuss, Akademie der Wissenschaften,—Sitzungsberichte,
 Nos. 18—39, 1844.
- Bombay. Indian Antiquary,—Vol. XIV, Part 166, January, 1885.
- Chicago. American Antiquarian and Oriental Journal,—Vol. VI, No. 6.
 November, 1884.
- Copenhagen. K. Nordiske Oldskrift-Selskab,—Aarboger, Part 3, 1884.
- Frankfurt. Senckenbergische Naturforschende Gesellschaft,—Abhand-
 lungen, Vol. XIII, No. 4.
- The Hague. Koninklijk Instituut voor de Taal-Landen Volkenkunde
 van Nederlandsch Indië,—Bijdragen, Vol. IX, No. 4.
- Hamilton. Hamilton Association,—Journal and Proceedings, Vol. I,
 Part I, 1882—1883.
- Lahore. Anjuman-i-Punjab,—Journal (English Section), Vol. V, Nos.
 1—4.
- London. Academy,—Nos. 659—662.
 ———. Anthropological Institute of Great Britain and Ireland,—
 Journal, Vol. XIV, No. 2, November, 1884.
 ———. Athenæum,—Nos. 2982—2985.
 ———. Geological Society,—Quarterly Journal, Vol. XL, Part 4,
 November, 1884.
 ———. ———. List of Fellows, November 1st, 1884.
 ———. Institution of Civil Engineers,—Minutes of Proceedings, Vol.
 LXXVIII.
 ———. Institution of Mechanical Engineers,—Proceedings, No. 3,
 August, 1884.
 ———. Brief Subject-Index, Vols. LIX—LXXVIII.
 ———. Nature,—Vol. XXXI, Nos. 790—793.
 ———. Royal Institution of Great Britain,—Proceedings, Vol. X,
 Part 3.
 ———. Zoological Society,—Proceedings, Part 3, 1884.
- Munich. Repertorium der Physik, Vol. XX, No. 12.
- Paris. Americana. Bulletin du Bouquiniste,—Series IV, No. 1.
 ———. Journal Asiatique,—Vol. IV, (Series VIII), No. 2.
 ———. Société de Géographie,—Bulletin, Vol. V. (Series VII), No. 4.
 ———. ———. Comptes Rendu des Séances, Nos. 18 and
 19, 1884.
 ———. Société Géologique,—Bulletin, Vol. IX, No. 5.
- Philadelphia. Academy of Natural Sciences,—Proceedings, Vol. VIII,
 1856; Part 2, May to October, 1884.
- Roorkee. Professional Papers on Indian Engineering, Vol. II (Series
 III), No. 8, December, 1884.
- St. Petersburg. Comité Géologique,—Mémoires, Vol. I, No. 3.

St. Petersburg. Comité Géologique. Proceedings, Vol. III, Nos. 6 and 7.
 —————. Horti Petropolitani,—Acta, Vols. VIII, No. 3; IX,
 No. 1.

Toronto. Canadian Institute,—Proceedings, Vol. II, No. 3, October,
 1884.

Washington. War Department, Army Signal Service,—Professional
 Papers, No. 14.

BOOKS AND PAMPHLETS,

presented by the Authors and Publishers.

BONAPARTE, PRINCE ROLAND. Les Habitants de Suriname; notes re-
 cueillies à l'Exposition Coloniale d'Amsterdam. Fol. Paris, 1884.

ROY. P. C. Mahabharata, Part XIII, 8vo. Calcutta, 1885.

MISCELLANEOUS PRESENTATIONS.

Nederlandsch Nieuw Guinea En de Papoesche Eilanden, by A. Haga from
 1500—1883, 8vo. Batavia, 1884.

BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN.

Report on the Administration of the Customs Department in the Bengal
 Presidency for the year 1883-84. Fcp. Calcutta, 1884.

Report on the External Trade of Bengal with Nepal, Sikkim and Bhu-
 tan for the year 1883-84. Fcp. Calcutta, 1884.

Returns of the Rail-borne Traffic of Bengal during the quarter ending
 30th September, 1884. Fcp. Calcutta, 1884.

BENGAL GOVERNMENT.

Catalogue of Sanskrit Manuscripts in Mysore and Coorg, by Lewis Rice,
 M. R. A. S. 8vo. Bangalore, 1884.

CHIEF COMMISSIONER, COORG.

Pacific Coast Pilot—Alaska, by W. H. Dall, Part I. 8vo. Washington,
 1883.

REV. C. H. A. DALL.

A set of 27 Photographs of the Caves of Ajunta. Fol. Bombay, 1884.

HOME DEPARTMENT.

Annual Report of the Lunatic Asylums in the Madras Presidency for
 1883-84. Fcp. Madras, 1884.

Annual Report of the Madras Medical College, Session 1883-84. Fcp.
 Madras, 1884.

MADRAS GOVERNMENT.

International Meteorological Observations, October 1883. 4to. Washing-
 ton, 1884.

Monthly Weather Review, October, 1884. 4to. Washington, 1884.

METEOR. REPORTER TO THE GOVERNMENT OF INDIA.

Report on the Explorations in Great Tibet and Mongolia made by A. K.
 in 1879-82, by J. B. N. Hennessey. Fcp. Dehra Dnn, 1884.

TRIGONOMETRICAL SURVEY OF INDIA,

PERIODICALS PURCHASED.

- Allahabad. Punjab Notes and Queries,—Vol. II, No. 16, January, 1885.
- Berlin. Deutsche Litteraturzeitung,—Vol. V, Nos. 45—47.
- Calcutta. Indian Medical Gazette,—Vol. XX, No. 1, January, 1885.
- Cassel. Botanisches Centralblatt,—Vol. XX, Nos. 5 and 6.
- Geneva. Archives des Sciences Physiques et Naturelles,—Vol. XII, No. 12.
- Giessen. Jahresbericht über die Fortschritte der Chemie,—Parts 4, 1882; 2, 1883.
- Leipzig. Annalen der Physik und Chemie,—Beiblätter, Vol. VIII, No. 12.
- . Literatisches Centralblatt,—No. 46, 1884.
- . Literatur-Blatt für Orientalische Philologie,—Vol. I, No. 12.
- London. Annals and Magazine of Natural History,—Vol. XIV (Series V), No. 84, December, 1884.
- . Chemical News,—Vols. L, Nos. 1308 and 1309; LI, Nos. 1310 and 1311.
- . Entomologist's Monthly Magazine,—Vol. XXI, No. 247, December, 1884.
- . London, Edinburgh and Dublin Philosophical Magazine,—Vol. XVIII (Series V), No. 115, December, 1884.
- . Nineteenth Century,—Vol. XVI, No. 94, December, 1884.
- . Numismatic Chronicle,—Part 3, 1884.
- . Publishers' Circular,—Vol. LXVII, Nos. 1134 and 1135.
- . Society of Arts,—Journal, Vol. XXXIII, Nos. 1674—1677.
- New Haven. American Journal of Science,—Vol. XXVIII (Series III), No. 167, November, 1884.
- Paris. Revue Critique,—Vol. XVIII, Nos. 46 and 47.
- . Revue des Deux Mondes,—Vol. LXVI, No. 2.
- Vienna. Orientalische Museum,—Oesterreichische Monatsschrift für den Orient, Vol. X, No. 12.

BOOKS PURCHASED.

- Palæographical Society. Facsimiles of Ancient Manuscripts. Oriental Series. Part VIII. Fol. London, 1883.
- Report of H. M. S. "Challenger" Zoology, Vol. X. 4to. London, 1885.
- STEEL, F. A. and TEMPLE, R. C.—Wide-Awake Stories,—a collection of Tales told by little children, between sunrise and sunset, in the Punjab and Kashmir. 8vo. Bombay, 1884.
- TEMPLE, CAPTN. R. C. Legends of the Punjab, No. 17. 8vo. Bombay, 1884.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MARCH, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th March, 1885, at 9 P. M.

DR. RÁJENDRALÁLA MITRA, C. I. E., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Twenty-two presentations were announced, as detailed in the Library List appended.

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

1. Syad Ali Bilgrámi, B. A., A. R. S. M., F. G. S.
2. Spencer Gore-Brown, Esq.
3. C. W. Bolton, Esq., C. S.
4. Mr. A. F. M. Abdur Rahmán.
5. Kumár Nilakrishna.
6. H. M. Rustomjee, Esq.
7. Bábu Rájakumár Sarvádrikári.

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

1. Kumár Saratchandra Singh, proposed by Nawáb Abdul Latif, Khán Bahádur, seconded by B. L. Gupta, Esq.
2. J. W. Chambers, Esq., proposed by R. R. Bayne, Esq., seconded by F. W. Peterson, Esq.
3. Bábu Yadunáth Sen, proposed by Babu Pratápachandra Ghosha, seconded by Dr. Mahendralál Sarkár.
4. Bábu Yogendranáth Mallik, proposed by Bábu Pratápachandra Ghosha, seconded by Dr. Mahendralál Sarkár.

5. H. Martyn Clark, Esq., M. B., proposed by C. J. Rodgers, Esq., seconded by F. E. Pargiter, Esq.

6. Bábu Narendranáth Sen, proposed by Dr. Rájendralála Mitra, seconded by Bábu Pratápachandra Ghosha.

7. Maulvi Syad Mahdi Áli, Nawáz Jang Bahádúr (of Hyderabad), proposed by Nawáb Abdul Latif, Khán Bahádúr, seconded by C. H. Tawney, Esq., M. A.

The following gentleman has intimated his wish to withdraw from the Society :

Rái Sohan Láll.

The SECRETARY announced the death of Bábu Adharlál Sen, an Ordinary Member of the Society.

The CHAIRMAN reported that Mr. J. Low, and Lt.-Col. J. G. Forbes were largely in arrears of subscription, and though registered letters had been sent to them in accordance with Rule 37, no notice had been taken of them. Their names would therefore be suspended for a month as defaulters in the Society's Meeting-room, and unless the sums due were paid in the meantime, they will be declared removed from the Society's Member List at the next meeting. In accordance with Rule 38, this fact will be notified in the Proceedings.

The SECRETARY reported that Mr. Baden Henry Baden-Powell had remitted a compounding fee in payment of all his future subscriptions.

The SECRETARY read the names of the following gentlemen who had been appointed by the Council to serve on the several Committees during the current year.

FINANCE COMMITTEE.

H. B. Medlicott, Esq.
 Alex. Pedler, Esq.
 J. C. Douglas, Esq.
 E. F. T. Atkinson, Esq.
 Major J. Waterhouse.

LIBRARY COMMITTEE.

H. F. Blanford, Esq.
 H. B. Medlicott, Esq.
 Dr. D. Waldie.
 Major J. Waterhouse.
 C. H. Tawney, Esq.

Dr. Mahendralal Sarkár.
 D. D. Cunningham, Esq.
 Bábu Pránnáth Pandit.
 Bábu Pratápachandra Ghosha.
 E. F. T. Atkinson, Esq.
 A. Pedler, Esq.

PHILOLOGICAL COMMITTEE.

Nawáb Abdul Latif, Khán Bahádur.
 Rev. K. M. Banerjea.
 J. Beames, Esq.
 F. S. Growse, Esq.
 Dr. G. Thibaut.
 C. J. Lyall, Esq.
 G. A. Grierson, Esq.
 C. H. Tawney, Esq.
 Syad Ahmad, Khán Bahádur.
 Col. A. C. Toker.
 J. Boxwell, Esq.
 Moulvi Khudábaksh Khán.
 Col. H. S. Jarrett.
 Pandit Mahesachandra Nyáyaratna.
 Bábu Haraprasáda Sástrí.
 Bábu Pratápachandra Ghosha.

NATURAL HISTORY COMMITTEE.

H. B. Medlicott, Esq.
 Dr. G. King.
 A. O. Hume, Esq.
 S. E. Peal, Esq.
 Dr. D. D. Cunningham.
 R. D. Oldham, Esq.
 L. de Nicéville, Esq.
 E. F. T. Atkinson, Esq.
 Bábu P. N. Bose.
 Dr. Mahendralál Sarkár.
 Dr. J. Scully.

PHYSICAL SCIENCE COMMITTEE.

H. F. Blanford, Esq.
 H. B. Medlicott, Esq.
 Dr. D. Waldie.
 Major J. Waterhouse.

Alex. Pedler, Esq.
 Rev. Father E. Lafont.
 Dr. Mahendralál Sarkár.

COIN COMMITTEE.

Hon. J. Gibbs.
 Major Genl. A. Cunningham.
 J. H. Rivett-Carnac, Esq.
 Major W. F. Prideaux.
 C. J. Rodgers, Esq.
 V. A. Smith, Esq.

HISTORY AND ARCHEOLOGY COMMITTEE.

Hon. J. Gibbs.
 Major General A. Cunningham.
 R. R. Bayne, Esq.
 J. Beames, Esq.
 Bábu Pratápachandra Ghosha.
 F. S. Growse, Esq.
 Bábu Pránnáth Pandit.
 J. H. Rivett-Carnac, Esq.
 Captain R. C. Temple.
 Amir Ali, Esq.
 E. F. T. Atkinson, Esq.

The SECRETARY read the following circular letter from the Royal Academy of Sciences, Turin, offering for competition the Bressa Prize of the value of 12,000 Italian Lire.

“The Royal Academy of Sciences of Turin, in accordance with the last will and testament of Dr. Cesare Alessandro Bressa and in conformity with the Programme published December 7th, 1876, announces that the term for competition for scientific works and discoveries made in the four previous years 1881-84, to which only Italian authors and inventors were entitled, was closed on December 31st, 1884.

“The Academy now gives notice that from the 1st of January, 1883 the new term for competition for the fifth Bressa Prize has begun, to which, according to the testator’s will, scientific men and inventors of all nations will be admitted. A prize will therefore be given to the scientific author or inventor, whatever be his nationality, who during the years 1883-86 “according to the judgment of the Royal Academy “of Sciences of Turin, shall have made the most important and useful “discovery, or published the most valuable work on physical and experimental Science, Natural History, Mathematics, Chemistry, Phy-

“siology and Pathology, as well as Geology, History, Geography and “Statistics.”

“The term will be closed at the end of December 1886.

“The value of the prize amounts to 12,000 Italian Lire.

“The prize will in no case be given to any of the National Members of the Academy of Turin, resident or non-resident.

A. FABRETTI,

The President of the R. Academy.”

Turin, January 1st, 1885.

Read a letter from the Magistrate of Patna forwarding for presentation to the Society a couple of old Buddhist Coins which the owner has presented to Government for this purpose and wishes the Government to be considered as the donor.

The CHAIRMAN reported that the Council had sanctioned the publication in the Bibliotheca Indica of the whole of the Institutes of Parásara, instead of only the Práyaschitta section of it as previously sanctioned.

The CHAIRMAN exhibited a copper-plate inscription forwarded to him by Bábu Nílakanṭha Mazumdár, of Dacca, and referred to the peculiarities of certain dates in it.

DR. MITRA remarked that the plate had been found, several feet under the earth, at Ashrafpur, Station Raipur, Zillah Dacca, when leveling a mound in the neighbourhood of a tank, and is now the property of Bábu Pratápachandra Banerji of that place. It measures 10" × 6"-5, and is encrusted on each side with a uniform layer of verdigris. The edges are much corroded, and the letters near them have become illegible. In the middle of the plate, the letters are, however, clear, and they show the record to be a muniment of the grant of one or more plots of land by one Deva Khaḍga, which is apparently a poetical inversion of Khaḍgadeva. The donees were Buddhists, who had charge of a Vihára or monastery, to the support of which the proceeds of the land were to be applied. The donor was also of the same persuasion, though the legend on his seal is a couchant bull. The mention of a vihára is of some importance, as affording a trace of the existence of Buddhism in the eastern districts at an early period. The name on the seal is not legible.

Owing to the illegibility of the beginning and end of every line, it is impossible to produce a connected translation of the whole record, but a tentative reading, prepared by Paṇḍit Kámákhyánáth Tarkaratna, of the Calcutta Sanskrit College, was submitted.

The most important part of the record is the date. Its letters and figures are perfectly clear in their outlines, and there is no reason to doubt the correctness of the reading (see Plate II). The first two letters of the date (in line 15) are unmistakably *Samva*, an abbreviation of *Samvat*. Then follow three figures of which the last is unquestionably a Nāgarī 3, and the first may be accepted either as a 7, or a 9. Its exact counterpart had nowhere been seen. It makes some approach to a modern Bengali 7, and also to the Valabhi 9, but to no other figure of any of the different ancient Indian systems of numerals known to us. Dr. Mitra took it for 7. The second figure has been often met with in ancient records, and has been accepted by all the later antiquarians and epigraphists to be a symbol for 100. It is formed of two arched lines joined to each other by their nearest legs by a slight curvature, and the off leg of the right hand circle drawn downwards in a line and terminating in a spur projecting forward. In ancient inscriptions these details are not constant. In Prinsep's facsimiles, as given in Mr. Thomas' edition of his essays, the juncture of the two arches is indicated by a point, but in the *Indian Antiquary*, Vol. XI, p. 270, the slight curvature is clear. The line in front is sometimes straight and sometimes curved, and the spur is not constant. *Indian Antiquary*, VI, p. 45. On one occasion Prinsep took the curved figure without a spur for 300. It is obvious, however, that the several variants are intended for the same primary type, and the variations are due to copyists' peculiarities. There is no valid reason to show that the figure on the copper-plate under notice is other than what have been noticed by Prinsep and others. Dr. Bühler takes the arched figure to be the ancient Indian *ś* as the initial of *sata*, a hundred, and the spur at foot the vowel-mark *u*. After this group of three figures, occurs the word *vaiśākha*, the name of the first month of the Indian year. The next is the syllable *di*, the initial of *divasa* a day, and it is followed by two figures, which are counterparts of the second and the third figures of the first group, and this leaves no room for any centenary value being attached to the second figure of the first group. It would be absurd to suppose that the month *Vaiśākha* included 103 days, and the idea must, therefore, be at once abandoned. The symbol must be taken as a numeral of a decimal system, and to ascertain its value the indication of the last figure is the only available guide. It is well-known that no Indian month has ever been made to comprehend more than 32 days, and, the last figure being an unavoidable and unquestionable 3, the preceding one must be 1 or 2, having the value, by its decimal position, of 10 or 20, *i. e.*, the date was either the 13th or the 23rd of the month named. To take it as a 3, as Prinsep once imagined, would be to make the month extend to 33 days, and to make two dissimilar figures do duty for the same value. In

some ancient inscriptions the figure is shown with one or two spurs in front, and the words preceding them show that, so altered, the symbol stood for 200 or 300. As it occurs without a spur in the record under notice, it must be one, and the date must be read *Samvat* 713, *Vaisākha* 13. The year given would make the record correspond with the Christian year 771, and this would not be inconsistent with the style of the letters. The proposed value of the figure, however, if accepted to be correct, and it is difficult to get out of the inference, would necessitate at least a thorough re-examination and a possible recasting of much of what has been already written by antiquarians on the subject, particularly with reference to the origin of Indian numerals. This was, however, a large and very comprehensive question, and Dr. Mitra did not think it expedient to notice it in the course of casual remarks on a single record.

Transcript of a Copper-plate Inscription from Dacca.

- १। खलि ॥ अथत्यविद्याहतिचेतुभूतभान्नीक(ख)संसारमहान्पुराणि अनुत्तरावधि—
- २। ++ भगवान् मुनीन्द्रः। अथत्यशेषस्त्रितिपालमूलिमालामस्त्रितोतितपादपीठः ++
- ३। पादप्रषतेनमाङ्गश्रीदेवखड्गो रूपतिर्जितारिः। ++ गच्छाद्यानिका तरला —
- ४। महादेवी श्रीप्रभावत्या भुज्यमानकपागकभूमहत्तरीको + दंशकाया भुज्यमा—
- ५। नककोदारवारके श्रीमित्रावस्था सामन्वषियिके नवभुज्यमान कश्च —
- ६। +रखतसके श्रीने(?)चभगेन ? भुज्यमानकश्चपागकपरवागननादव —
- ७। - खलमत दशद्रोष वापाशिव द्द्रिकामास्त्रवर्गे नर्तकी अवपारक —
- ८। - श्रीमता श्रीसर्वान्तरेण भुज्यमानक महत्तरशिखरादिभिः छथ्यमाच—
- ९। भागक विहारवास्तूदयखरोल्लवायिका उग्रवारके वन्द्यकन मतिना —
- १०। - पागकतीसनादजयदत्तकगके द्रोषिमठिकायां पागक । ६ —
- ११। - पागके + दशद्रोषाधिकेषु सभुपगतविषयपती कुटुम्बिन प्रतिपा —
- १२। - तयस्तु भवता एते दशद्रोषाधिकनवपागकाय षड्गुण्यदाय —
- १३। - राजराजभद्रस्यायुष्कामाय अवार्थवन्द्यसङ्गमिचपादे का —
- १४। — दारविहारे कायतुष्टय (?) मेकद्रमीकृतं तद्विषयपत्यादि —
- १५। — वितत्यमिति सन्न ०१२ वैशाखदि १२ जयखलु —
- १६। — पुण्यं दस (श) दुर्गतिदुःखभयापहारिस्त्राखलुदातमिति —
- १७। बुद्धा भोगीश्वरैः सकल्पैः प्रतिपासनीयम् । हूल कीञ्च परंपरैः —
- १८। — कसौन्वासके परमयोगतोपासकपुरदासेन —

DR. HOERNLE remarked that he had not seen the copper-plate, but, to judge from the figures as drawn on the black-board, there appeared

to be not inconsiderable difference between the shapes of the two symbols in question. But what seemed to him of more importance was, that, even if there should be a close resemblance between them, no such conclusion as that suggested by the President could be drawn from it, because the figures on the plate, as explained by Dr. Mitra, evidently belonged to the decimal system of notation, whereas the symbol which hitherto has been accepted by all archæologists as signifying 100, belonged to an entirely different system. Moreover the latter had been principally observed in use in Western India, while the present plate was from the extreme East, and it did not follow that an apparently similar numeral figure used in both places necessarily possessed the same signification. He did not, therefore, think the evidence now put before them was sufficient to discredit the theory at present generally accepted.

DR. MITRA replied that he did not then mean to contest Prinsep's and Dr. Bühler's reading of the symbol, but he brought to notice the fact that their reading was inadmissible in the present case, and if the present reading be right, considerable changes will have to be made in all former readings.

The HON. J. GIBBS, c. s. i. exhibited a 100 gold-mohur piece of the Emperor Aurangzib, which had been sent for that purpose by H. H. Maharajah Scindia (see Plate III), and said

• I have the pleasure of exhibiting to the Society a 100 gold-mohur piece of the Emperor Aurangzib which I am enabled to do through the kindness of H. H. the Maharajah Scindiah, to whom it belongs.

It is the piece I mentioned in my note in the Proceedings of this Society for July 1883, and of which I subsequently gave a plaster cast taken from a paper impression.

The coin was in the possession of a well-known banker at Benares who presented it to its present owner. I have been for some years trying to trace it, and only about six weeks ago heard accidentally from a native friend who was calling on me, what had become of it. I at once wrote to Col. Bannerman, the Political Resident at the Maharajah's Court, and he kindly procured it from the Durbar to enable the Society to have the opportunity of seeing so curious a piece, and I think we should not fail to communicate our thanks to H. H. the Maharajah Scindiah for the treat he has afforded us.

The coin is $\frac{1}{2}$ inches in diameter and $\frac{1}{4}$ in. in thickness, and its weight is 35 oz. 4 dwts. The inscription is as follows :

Obverse.

Square centre. Núr-ud-dín Abul Zafar Muhammad Aurangzib
Alamgir Bahádur Bádsháh Ghází, 1083, A. H.

Margin. He from the hand of whose generosity the clouds receive water. The world-conquering king, the sea of generosity, Aurangzib. The face of gold becomes resplendent like the faces of the moon and sun, from the light of his coin in the vast plain of Hindústán.

Reverse.

Square centre. Struck in the auspicious year of accession 15, in the home of the Kalifat Sháh—Jehánábád.

Margin. The emperor Aurangzib, conqueror of the world as powerful as Heaven, as wise as fate. The face of gold from the light of his coin became resplendent like the shining sun.

The PHILOLOGICAL SECRETARY exhibited ten coins forwarded by Mr. Rivett-Carnac, and read the following extract from his letter accompanying the coins :

“ I send for the inspection of the Society some coins obtained from the Panjáb which appear to me to be of rare, if not unknown, types. Ten coins (among them) are thick and lumpy. The metal would seem to be a mixture of copper and silver. On one side representations of a figure—very rough—on the other a Bull or Elephant. Traces of letters are to be found on both sides.”

DR. HOERNLE remarked that he did not recognize the coins, nor had he been able to make anything of the so-called letters on them. But what had struck him was a curious resemblance between these coins and the square piece of silver which had been sent some time ago by Col. Clerk and exhibited at a previous meeting of the Society (see *Proc.* for August 1884, page 128). That piece had met with general suspicion as to its being a genuine coin ; and it was probable that the pieces of metal now before them were of the same character. In connection with this subject, Dr. Hoernle added, he might mention to the meeting, that he had seen a letter from Col. Clerk, dated 9th February last, in which he communicated to the Society, that the letters on the oblong piece of silver, which had been recognized by Mr. Beames and Col. Prideaux to be some form of Semitic (see *Proc.* for January 1885 pp. 2 and 3) were declared by Mr. Thompson of the British Museum to be Slavonic. He read them as follows, commencing at the further end from the ram's head : *th, n*, the sign *sofr, b, kh*.

The HON. MR. GIBBS remarked about the coins now exhibited that he suspected they were spurious, and had been manufactured by persons at Rawal Pindi, who, as he had mentioned on a former occasion, made it a business to manufacture spurious relics and antiquities.

The following papers were read :

1. *On the Kings of the Suffarian dynasty of Nimroz or Sigistan*.—By COL. H. G. RAVERTY.

(Abstract.)

In this paper, Colonel Raverty refers to a Note on "Some Coins from Candabar" by Mr. J. C. Rodgers, published in the April No. of the Society's *Proceedings* and considers the theory therein propounded by Mr. Rodgers as an erroneous one to go upon. This he shows by a reference to his (Colonel Raverty's) translation of the *Ṭabaqât i Nâsirî* in which, he says, will not only be found an account of the ten last rulers of Nimroz or Sigistan but also of the preceding eight, besides other information respecting the Suffarian dynasty. Colonel Raverty then gives a list of these eighteen kings, the years of their reign and the relationship existing between them; and concludes by explaining how Mangú Khán came to put the Kalimah on his coins.

The paper will be published in Journal, Part I for 1885.

2. *Notes on Indian Rhynchota; No. 2, Homoptera*.—By E. F. T. ATKINSON, Esq., M. A., C. S.

(Abstract.)

This paper is a further instalment of the author's notes on *Rhynchota*, of which the first was printed in abstract in the *Proceedings* for December last. The present list comprises 45 species distributed as follows amongst the following genera: *Cosmocarta* 19, *Phymatostetha* 11, *Callitettix* 3, *Ptyelus* 5, *Aphrophora* 1, *Cloria* 2, *Carystus* 1 and *Macherota* 3. In addition to the above, 10 apparently new species of the genera *Phymatostetha* and *Cosmocarta*, contained in the collection of the Indian Museum, will be described in a separate paper hereafter.

The paper will be published in Journal, Part II for 1885.

3. *Notes on the Tristubh Metre of the Rig Veda and its likeness to some classical metres*.—By J. BOXWELL, Esq., C. S.

(Abstract.)

In Mr. Boxwell's opinion, the Vedic Trishtubh or the earliest of Hendecasyllabic metres yields, on analysis, interesting results and discloses curious affinities to others of the same group. For the purpose of scansion he would divide the Trishtubh into an initial and final quadrisyllable and a medial trisyllable, and shows that the typical trishtubh is thus seen to be $\times - \cup - | - || \cup \cup | - \cup - \times |||$ or a combination of Alcaic opening with Sapphic close, a line of great

sweetness and dignity. He gives several instances from the Rig Veda and appears inclined to think that both Shakespere's iambics and Dante's heroics contain many veritable trishṭubhs. He concludes by giving a translation into Latin of two fine odes from the 3rd and 10th books of the Rig Veda, one into Sapphics, the other into its native metre in a latin dress.

The paper will be published in Journal, Part I for 1885.

4. *Description of some new Indian Rhopalocera.*—By LIONEL DE NICEVILLE.

The paper will be published in Journal, for Part II of 1885.

LIBRARY.

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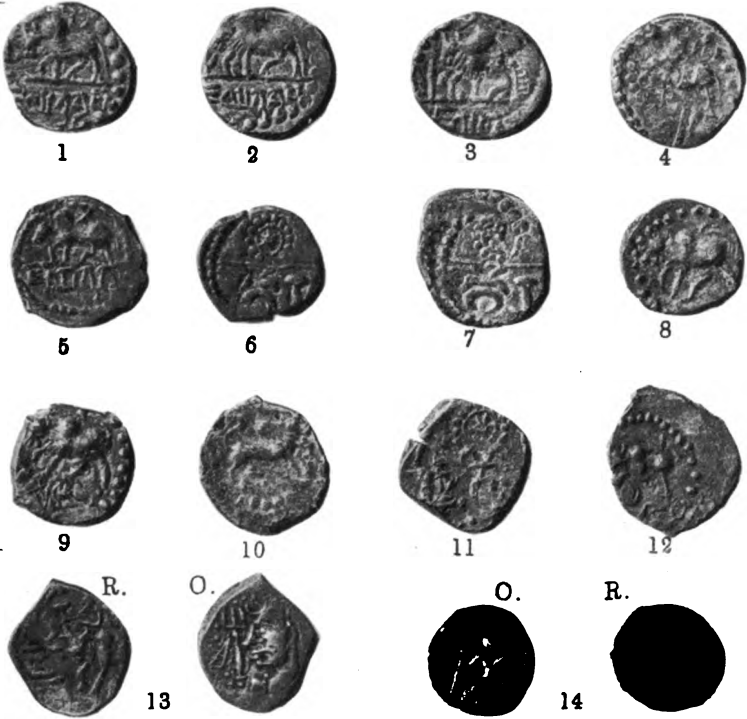
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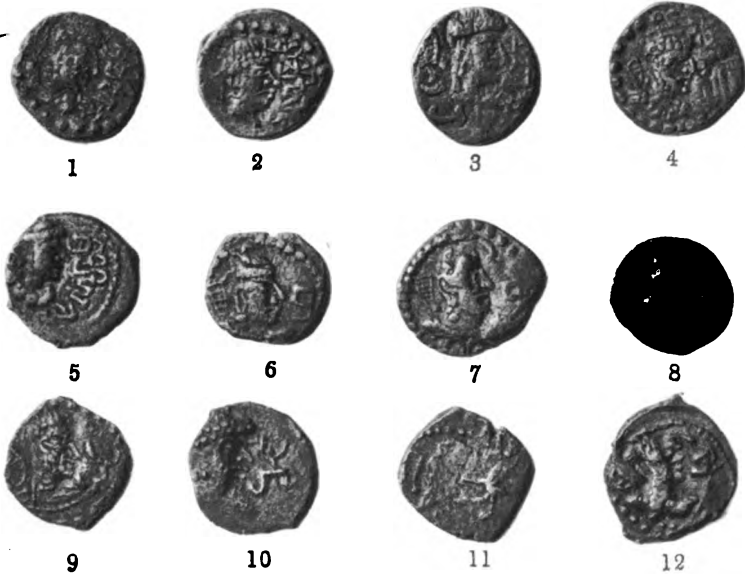
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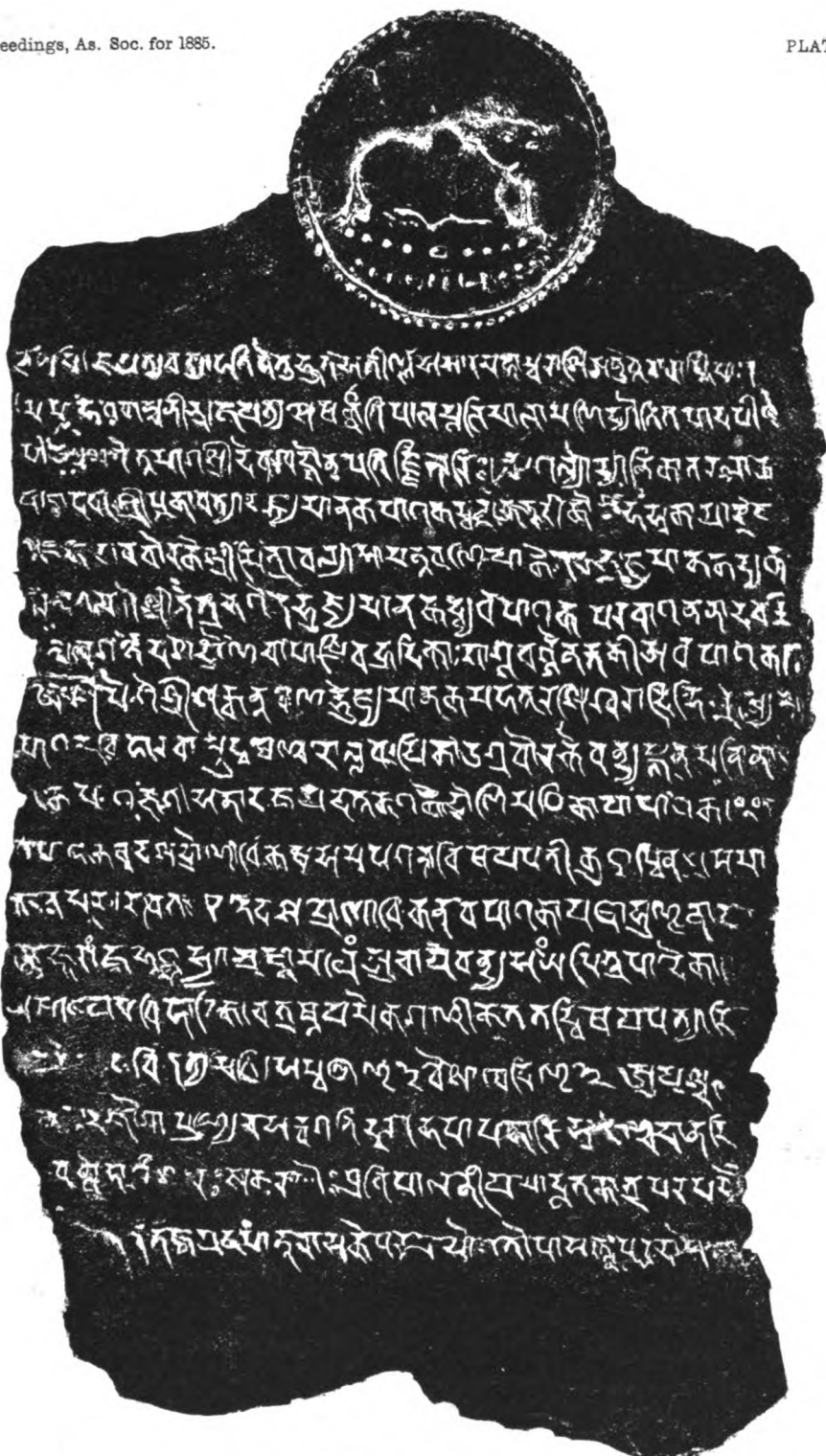


Reverses.



Obverses.





PHOTOENGRAVED AT THE SURVEY OF INDIA OFFICE, CALCUTTA, MAY 1885.



REVERSE.



REVERSE.

Photo-Culotype

100 GOLD-MOHUR PIECE,

Struck by the Emperor Aurangzib, A.D. 1673 (1083 A.H.)

Full size.

Bureau of India Office, Calcutta, June 1865.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR APRIL, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st April, 1885, at 9.15 P. M.

D. WALDIE, Esq., F. C. S., in the Chair.

The minutes of the last meeting were read and confirmed.

Fifteen presentations were announced, as mentioned in the appended Library List.

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

1. Kumar Sarat Chunder Singh.
2. J. W. Chambers, Esq.
3. Babu Yadunath Sen.
4. Babu Yagendranath Mallick.
5. H. Martyn Clark, Esq.
6. Babu Narendranath Sen.
7. Maulavi Syad Mahdi Ali Nawaz Jung Bahadur.

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

1. Monsieur Ivan Verdeau, proposed by Babu Pratapachandra Ghosha, seconded by Babu Kedarnath Dutt.
2. Hon. Kumar Baikuntonath De, proposed by Dr. Rajendralala Mitra, seconded by F. E. Pargiter, Esq.

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

- Rev. K. M. Banerji.
Col. E. C. Macnair.

Mr. Staley who was elected at the meeting in January has declined the membership.

The CHAIRMAN announced that, in accordance with Rules 37 and 38 of the Society's Bye Laws, the names of the following gentlemen had been posted up as defaulting members since the last monthly General Meeting and would now be removed from the list of Members, and the fact published in the Proceedings :

Mr. J. Low.

Lt.-Col. J. G. Forbes.

The CHAIRMAN reported that the Council had appointed Mr. H. F. Blanford a Trustee of the Indian Museum, on behalf of the Society, in the place of Major J. Waterhouse, who had been elected a Trustee on behalf of the Museum.

The CHAIRMAN reported, for the approval of the meeting, that the Council had appointed the Hon'ble H. J. Reynolds a Vice-President of the Society in the place of the Hon'ble J. Gibbs who had left India ; and Mr. A. Simson a member of Council in Mr. Reynolds' place.

Approved unanimously.

Read the following letter from Mr. F. Moore :

With reference to your query anent the continuation of the "Description of *Lepidoptera* collected by Atkinson" all I can at present say is, that I have obtained from Dr. Standingen of Dresden (to whom the collection belongs) the whole of the remaining portions of the moths, contained in 8 boxes closely packed, comprising the *Pyalidæ*, *Geometri-dæ*, *Tortrieudæ*, and *Tineidæ*. I have worked up most of the named species, but I doubt much whether I shall be able to complete the work before next year.

The following papers were read—

1. *The Square Silver coins of the Sultans of Kashmir.*—By CHARLES J. RODGERS, Principal, Normal College, Amritsar.

(Abstract.)

This paper is a long and interesting account of the square silver coins of Kashmir and of the sovereigns in whose reigns they were struck. It gives a description of 40 coins, beginning with those of Shams-ud-din dated A. H. 715 down to those of Yakub Shah dated A. H. 992. There are also a few coins struck by Akbar before he had conquered the province and after the conquest of the country.

This paper, with three plates, will be published in the Journal, Part I.

2. *Zoological Notes from H. M.'s Indian Marine Survey Steamer. "Investigator,"* Commander Alfred Carpenter, R. N., Commanding. No. 1, —On the Structure and habits of *Cyrtophium calamicola*, a new tubicolous Amphipod from the Bay of Bengal.—By G. M. GILES, M. B., Surgeon Naturalist.

This paper is a description of a new Amphipod Crustacean commonly taken in the surface net about the Palmyra shoal and mouth of the Dhamra river on the Orissa coast. It comes under notice as a body moving with tolerable activity, in appearance like a morsel of drift wood. On closer examination, the four antennæ of a minute Crustacean are seen to protrude from one end; they are the locomotor organs of the creature and serve to propel it through the water. A still closer examination shewed the amphipod to belong to the Subdivision *Domicola*, Family *Carophiidae*, Genus *Cyrtophium*.

The tube, inhabited by this little creature, is considerably longer than the body it shelters, and is of a deep golden brown, irregularly banded by zones of darker and lighter tint, varying from a fine golden yellow through a warm brown to black. These tubes vary in size from 5 to 10 millimetres long by 0.5 to 1 millimetre wide, and are nearly cylindrical. The material consists of coarse and nearly opaque fibres, shewing no structure and presenting the appearance of a hardened secretion. The author goes on to give a very interesting account of the habits of this amphipod, the manner in which it repairs its dwelling and the material of which the dwelling is composed.

The paper, which is illustrated by an admirable plate, will be published in full in the Journal, Part II, of 1885.

3. *Fourth List of Butterflies taken in Sikkim in October 1884.*—By L. DE NICEVILLE.
(Abstract.)

In this paper 29 new species of *Rhopalocera* taken in the neighbourhood of Darjeeling in the month of October are enumerated, bringing up the total number recorded to 313. With a few exceptions, they were all taken at low elevations, principally on the road leading to the Rungit Valley.

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

The following paper has been received and will be read at the next meeting—

Observations of the Solar Thermometer at Lucknow.—By S. A. HILL, B. S. C., A. R. S. M., Meteorological Reporter for the North-West Provinces and Oudh.

LIBRARY.

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

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presented by the respective Societies and Editors.

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- Bombay. *Indian Antiquary*,—Vol. XIV, Part 168, March, 1885.
- . *Royal Asiatic Society (Bombay Branch)*,—*Journal*, Vol. XVII, No. 44.
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- Calcutta. *Original Meteorological Observations*,—September and October, 1884.
- Chicago. *American Antiquarian and Oriental Journal*,—Vol. VII, No. 1, January, 1885.
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- . *Royal Asiatic Society*,—*Journal*, Vol. XVII, Part 1, January, 1885.
- . *Royal Astronomical Society*,—*Monthly Notices*, Vol. XLV, No. 2, December, 1884.

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- SINGHA, KAILAS CHANDRA. *Shena Rajgan*. 8vo. Calcutta, 1884.

MISCELLANEOUS PRESENTATIONS.

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- Indian Forester*, Vol. XI, Nos. 2 and 3, February and March, 1885. 8vo. Roorkee, 1885.

BENGAL GOVERNMENT.

- Notes on Aryan and Dravidian Philology*, Vol. I, Part I, by M. Seshagiri Sastri, M. A. 8vo. Madras, 1884.

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- The Lepidoptera of Ceylon*, Part 10, by F. Moore, F. Z. S. 4to. London, 1885.

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Journal of the Health Society for Calcutta, Vol. I, Part I, 8vo. Calcutta, 1885.

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Commentaries of Alfonso Dalboquerque, translated by W. de Gray Birch. Vol. IV, (Hakluyt Society) 8vo. London, 1884.

Index to Alvarez' Narrative of the Portuguese Embassy to Abyssinia, by Lord Stanley of Alderley. 8vo. London, 1884.

HOME DEPARTMENT.

Hand List of Mollusca, Part II, Gasteropoda, by Geoffrey Nevill, C. M. Z. S. 8vo. Calcutta, 1884.

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International Meteorological Observations, December, 1883. 4to. Washington, 1885.

Monthly Weather Review, December, 1884, 4to. Washington, 1885.

METEOR. REPORTER TO THE GOVERNMENT OF INDIA.

Gazetteers of the following Districts in the Punjab, *viz.*,—Gurgaon, Karnal, Hisar, Ambala, Hoshiarpur, Kangra, Vols. I—II, Gurdaspur, Sialkot, Lahore, Gujranwala, Ferozepore, Rawalpindi, Dera Ismail Khan and Hazara. 8vo. Lahore, 1883-84.

Report on the Sanitary Administration of the Punjab for 1883. Fcp. Lahore, 1884.

Report on Vaccination in the Punjab for 1883-84. Fcp. Lahore, 1885.

PUNJAB GOVERNMENT.

Zoological Record, Vol. XX for 1883. 8vo. London, 1884.

ZOOLOGICAL RECORD ASSOCIATION, LONDON.

PERIODICALS PURCHASED.

Allahabad. Punjab Notes and Queries,—Vol. II, No. 18, March, 1885.

Berlin. Deutsche Litteraturzeitung,—Vol. V, Nos. 51 and 52; Vol. VI, Nos. 1—5.

———. Journal für die reine und angewandte Mathematik,—Vol. XCVIII, No. 1.

Calcutta. Indian Medical Gazette,—Vol. XX, No. 3, March, 1885.

Cassel. Botanisches Centralblatt,—Vol. XX, No. 13; Vol. XXI, Nos. 1 and 2.

Edinburgh. The Edinburgh Review,—Vol. CLXI, No. 379, January, 1885.

Göttingen. Gelehrte Anzeigen,—Nos. 1 and 2.

Leipzig. Annalen der Physik und Chemie,—Vol. XXIV, No. 2.

———. ————. Beiblätter, Vol. IX. No. 2.

———. Hesperos,—Vol. IV, Nos. 88—90.

———. Literarisches Centralblatt,—No. 52, 1884; Nos. 1—6, 1885.

- London. *Annals and Magazine of Natural History*,—Vol. XV (5th series), No. 86, February, 1885.
- . *Chemical News*,—Vol. LI, Nos. 1316—1319.
- . *Entomologist*,—Vol. XVIII, Nos. 260 and 261, January and February, 1885.
- . *Entomologist's Monthly Magazine*,—Vol. XXI, Nos. 1248 and 1249, January and February, 1885.
- . *Ibis*,—Vol. III, (5th series), No. 9, January, 1885.
- . *Journal of Botany*,—Vol. XXIII, Nos. 265 and 266, January and February, 1885.
- . *Journal of Science*,—Vol. VII, (3rd series), Nos. 133 and 134, January and February, 1885.
- . *London, Edinburgh and Dublin Philosophical Magazine*,—Vol. XIX (5th series), Nos. 116 and 117, January and February, 1885.
- . *Messenger of Mathematics*,—Vol. XIV, Nos. 7 and 8, November and December, 1884.
- . *Mind*,—No. XXXVII, January, 1885.
- . *Nineteenth Century*,—Vol. XVII, Nos. 95 and 96, January and February, 1885.
- . *Publishers' Circular*,—Vol. XLVIII, Nos. 1138 and 1139.
- . *Quarterly Journal of Microscopical Science*,—Vol. XXV, No. 79, January, 1885.
- . *Society of Arts*,—*Journal*, Vol. XXXIII, Nos. 1682—1685.
- . *Westminster Review*,—Vol. LXVII, No. 133, January, 1885.
- New Haven. *American Journal of Science*,—Vol. XXIX, No. 169, January, 1885.
- Paris. *Académie des Sciences*,—*Compte Rendu des Séances*, Vol. XCIX, No. 26; Vol. C, Nos. 1—4.
- . *Annales de Chimie et de Physique*,—Vol. III, (6th series), December, 1884; Vol. IV, (6th series), January, 1885.
- . *Journal des Savants*,—December, 1884.
- . *Revue des Deux Mondes*, Vol. LXVII, Nos. 1—3.
- . *Revue Critique*,—Vol. XVIII, No. 52; Vol. XIX, Nos. 1—4.
- . *Revue Scientifique*,—Vol. XXXV, Nos. 1—5.
- Vienna. *Orientalische Museum*,—*Oesterreichische Monatsschrift für den Orient*, Vol. XI, No. 2.

BOOKS PURCHASED.

- FALLON, S. W. *Dictionary of Hindustani Proverbs*. 8vo. Benares, 1885.
- TEMPLE, CAPTN. R. C. *The Legends of the Punjab*, Vol. II, No. 19. 8vo. Bombay, 1885.

THOMSON, SIR WILLIAM. *Lectures on Molecular Dynamics.* 4to. Baltimore, 1884.

THORBURN, MAJOR W. STEWART. *A Guide to the Coins of Great Britain and Ireland.* 8vo. London, 1885.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MAY, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 6th May, 1885, at 9.15 P. M.

D. WALDIE, Esq., F. C. S. in the Chair.

The minutes of the last meeting were read and confirmed.

Seventeen presentations were announced, as mentioned in the appended Library List.

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

1. Monsieur Ivan Verdean.
2. Hon. Kumar Baikuntanath Dé.

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

Mahomed Naemullah, Deputy Magistrate of Bulundshahr, proposed by Major J. Waterhouse, seconded by Dr. R. L. Mitra.


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

1. Mr. E. V. Westmacott.
2. Mr. W. R. H. Merk.
3. Maulavi Fateh Ali.

The following letters were read :

1. From Mr. J. W. Chambers forwarding two volumes of Storm Pamphlets collected by the late Henry Piddington, and requesting the Society's acceptance of them for the Library.

2. From Secretary to Government, N. W. Provinces and Oudh, forwarding a parcel containing 204 coins found in the Fatehgarh district.

The PHILOLOGICAL SECRETARY reported that these were all coins of Maizz-ud-din Muhammad ben Sam, who conquered India, and that they were all struck in India. *Obverse* : Horseman with an indistinct Persian inscription, probably  Mahommad. *Reverse* : Bull with a Hindi inscription श्रीमहम्मद साम Shri Muhammad Sami. Their date is about 1192 A. D. They are described by Thomas in his Pathan kings of Delhi, p. 16. They are very common and of no particular value. The Society is amply provided and the coins are available for purchase.

The PRESIDENT reported that the Council had sanctioned the publication of the following works in the Bibliotheca Indica, viz. :—

- | | |
|--|--------------------------------|
| 1. Jnata Dharma Sutra. | } to be edited by Dr. Hoernle. |
| 2. Upasaka Dasa Sutra. | |
| 3. Bipaka Sutra. | |
| 4. Saddharma Pundarika. | |
| 5. Ashtasahasrika, to be edited by Dr. Mitra. | |
| 6. Kurma Purana, to be edited by Pundit Nilmony Mukerji. | |
| 7. Varaha Purana, by Pundit Hrishikes Sastri. | |

The PRESIDENT further reported that Major Waterhouse had been appointed General Secretary temporarily during the absence of Mr. Pargiter; and that Mr. J. Beames had been elected a Member of Council, and had consented to act as Philological Secretary during the absence of Dr. Hoernle.

Also that Mr. E. F. T. Atkinson had been appointed Auditor for the Annual Accounts of 1884, in place of Mr. Westland.

The NATURAL HISTORY SECRETARY (Mr. WOOD-MASON) exhibited specimens of two species of *Nephropsis*, a blind genus of Macrurous Crustacea belonging to the family *Homaridae*, and made the following remarks :—

The members of the Society will be glad to hear that the Government has commenced to fulfil its promise, made to this Society many years ago, to carry out a systematic exploration of the depths of the Indian Seas in connexion with a contemplated survey of the Coasts, and that during the past season some deep-sea dredging has been done on board H. M.'s Indian Marine Survey Steamer 'Investigator.' During the earlier part of the season, dredging was carried out at two stations on opposite sides of the Bay of Bengal—off Kyouk Phyou in 272

fathoms, and off False Point in 202 fathoms, and from these moderate depths interesting collections of objects, consisting chiefly of Fishes and Crustaceans, were brought up in the trawl. These collections were made over to me in March last by Dr. Giles, the Naturalist to the Survey, for determination and description. They include several characteristic genera of deep sea animals, *e. g.*, *Macrurus*, amongst Fishes, and *Nephropsis*, *Rhacocaris*, *Orophorhynchus*, *Munidopsis*, etc., amongst Crustaceans, and several novelties, notably three remarkable fishes belonging to the Eels. Later in the season, after the vessel had been refitted at Calcutta, "the Swatch of no ground" was explored, and, from depths ranging from 285 to 409 fathoms, most interesting collections of animals were brought up consisting of similar types of Fishes and Crustaceans, with the addition of a few Mollusks, amongst which may be mentioned a very large *Nucula* marked with close-set V-shaped ridges as in the Japanese *Nucula mirabilis*, and more novelties. The physical characters of the sea-bed, which is described by Dr. Giles as a green ooze with dead pteropod shells abundantly disseminated through it, the temperature of the water at the greatest depth reached by the dredge, which is stated to have been 47° Fahr., and the occurrence of a characteristic deep sea fauna, in the depths of the Swatch prove that this depression of the seabed, which is chiefly remarkable on account of its close proximity to the shoals at the mouths of the Ganges and Brahmaputra, is, as was long ago suggested by Sir Charles Lyell, a part of the original basin of the Bay of Bengal.

I exhibit specimens of the *Nephropsis* obtained at the three stations above-mentioned; from Station No. 1, Lat. 20° 17' 30" N., Long. 88° 50' E., off False Point, a large series of both sexes was obtained in 202 fathoms with a bottom temp. of 52° F.; from Station No. 2 in Lat. 19° 35' N., Long. 92° 24' E., off Kyonk Phyoo, on the opposite side of the Bay, a single one was fished up from 272 fathoms with a bottom temperature of 50° Fahr.; and from Station No. 3, in the Swatch, in Lat. 20° 49' N., Long. 89° 8' E., one male from 409 fathoms with a temperature of 47° Fahr.

All the specimens from Stations 1 and 2 are of the same species; they differ in colour (which is old ivory-white with orange red markings), in the consistence of the integument of the branchiostegal portions of the carapace in the female (which are soft and papery), in the form and proportions of the rostrum (which is shorter and lanceolate at the extremity), and in other respects from the one obtained at Station No. 3, which is without doubt the male of the species (*N. Stewarti*) dredged by me at about the same depth in the Andaman Sea in 1872, agreeing therewith in the firmly chitinized integument of the carapace in both sexes, in the form of the cervical

suture, of the median thoracic portion of the cephalothorax, and of the rostrum, which gradually tapers to a longer point, and in colour, which is throughout a brilliant scarlet-lake. I propose to call the new species clothed in a white uniform with red facings, *N. carpenteri*, after the commander of the vessel.

Full comparative descriptions of the two species, together with an account of the structure of the respiratory organs and of the larvae, which leave the huge egg, in a condition closely resembling fig. E. of S. I. Smith's plate representing the early stages of the American lobster, will be published with illustrations in the Journal.

In reply to a question by Mr. Cotes, the speaker explained that no trace of the outer remus of the thoracic limbs was preserved in the adults.

The following papers were read—

1. *Observations of the Solar Thermometer at Lucknow.*—By S. A. HILL, B. Sc., A. R. S. M., *Meteorological Reporter for the N. W. Provinces and Oudh.* (Postponed from last Meeting.)

(Abstract.)

This paper has been compiled with a view to test the soundness of the conclusions arrived at by the author from a discussion of seven years' observations at Allahabad, published in the Journal, Vol. LI, Part II.

The data on which the paper is founded are hourly observations of a non-registering black-bulb thermometer *in vacuo*. These observations were made on four days in each month during the eight years 1877-84, but only such as were recorded at times when the sky was free or nearly free from cloud have been made use of. The reductions have been effected by means of Ponillet's formula.

The deduced mean values of the constant of solar radiation in degrees of the thermometer employed are the following:—

Year.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.
<i>Solar Const.</i>	80·1	86·7	80·4	76·7	74·7	74·6	76·4	77·2

These results strongly support the conclusion derived from the Allahabad observations that the solar radiation is most intense when there are fewest spots on the sun's surface, the last sunspot minimum having occurred in 1878 and the maximum probably in 1881 or 1882.

The author then proceeds to show that though there is a rather strong presumption in favour of the variation in the sun's heat indicated by the figures above given, the range indicated is doubtless much too great. The thermometer having a globular bulb receives radiation from all sides; and therefore in dry weather, when the ground under it is bare and the air over it dusty, it receives much more reflected heat than

when the ground is grassy and the air clear. The great excess of observed radiation in 1878 over any other year in the series is probably for the most part due to the dryness of that year. The question can only be satisfactorily solved by continuous records of some form of actinometer designed to receive parallel rays.

As regards atmospheric absorption the conclusions of the previous paper are generally confirmed, but the diathermancy of dry air is shown to be probably not quite so great as was supposed.

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

2. *Notes on Japanese Land and Fresh Water Mollusca.*—By O. F. VON MOLLENDORF, PH. D. Communicated by the NATURAL HISTORY SECRETARY.

(Abstract.)

These notes are based chiefly upon a collection formed during the year 1884 by Dr. J. Anderson, F. R. S., and forwarded by him for classification to Dr. Hungerford and the author, who takes the opportunity to publish descriptions of some new species formerly discovered by Messrs. Hungerford and Eastlake, and to make some correction in his former paper on Japanese *Clausiliae* published in the Journal of this Society for 1882.

The paper contains notices of 42 species, of which 1 *Nanina*, 2 *Bulimini*, 3 *Clausiliae*, and 1 *Diplommatina* are considered to be new to science. It will be published in the Journal, Part II, No. 1 for the current year.

3. *Illustrations of local architecture in the Fatehpur District, N. W. P.*—By F. S. GROWSE, M. A., C. I. E.

(Abstract.)

The district was rich in temples of the same style as those in Bundelkhand in the century preceding the Muhammadan conquest. Those built of stone have mostly been destroyed, and fragments of their ruins may be seen lying about the caves or built into the walls of colleges. Two temples of brick are still standing. The larger of these at a place called Tinduli has recently been repaired out of a grant made by Government at the instance of the writer. The other is susceptible of repair at slight expense.

There is also a large building in the town of Khajuraho consisting of a large walled garden known as the Badshahi Bagh, a masonry tank, and a fortified Sarái. It was erected by the Emperor Aurangzeb in 1659 to commemorate his victory over his brother Shuja'a in a battle fought in the neighbourhood. The works, of which a full description is given, are on a very grand scale, but the execution seems to have been hasty, and there is not much delicacy in the details.

The paper concludes with some remarks on the number of Hindu temples in the district and their architectural style. It will be published in the Journal, Part I for 1885.

4. *Natural History Zoological Notes from H. M.'s Indian Marine Survey Steamer "Investigator," Commander Alfred Carpenter, R. N., Commanding.*—No. 2. *Description of a New Species of the Amphipod Genus Melita from the Bay of Bengal.*—By G. M. GILES, M. B., F. R. C. S., *Naturalist to the Indian Marine Survey.*

(Abstract.)

This paper contains a detailed description of a small Amphipodous Crustacean, only about 5 or 6 millims. in length, of which two specimens were obtained by the author by means of the hempen triangles from a depth of $12\frac{1}{2}$ fathoms near the Mutlah Light Ship off the mouths of the Ganges and Brahmaputra.

The paper, which is illustrated by a highly magnified coloured drawing of the animal, as well as by figures of some of its parts on a much larger scale, will be published in the Journal, Part II, No. 2 for the current year.

The following paper has been received :—

Natural History Notes from H. M.'s Indian Marine Survey Steamer "Investigator," Commander Alfred Carpenter, R. N., Commanding.—No. 3. *On the Prothallus of Padina pavonia.*—By G. M. GILES, M. B., F. R. C. S., *Naturalist to the Indian Marine Survey.*

LIBRARY.

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

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. American Oriental Society,—Proceedings, October, 1884.

———. Johns Hopkins University,—American Chemical Journal, Vol. VI, No. 6.

———. ———. American Journal of Philology, Vol. V, No. 4.

———. ———. Circulars, Vol. IV, Nos. 37 and 38.

Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen, —Notulen, Vol. XXII, No. 4.

———. Natuurkundig Tijdschrift voor Nederlandsch-Indië,—Vol. XLIV.

- Bombay. Bombay Branch of the Royal Asiatic Society,—Journal, Vol. XVII, No. 44.
- . Indian Antiquary,—Vol. XIII, Nos. 164 and 165, December 1884, and Supplement; Vol. XIV, Nos. 169 and 170, April and May 1885.
- Bordeaux. Société de Géographie Commerciale,—Bulletin, No. 6, 1885.
- Brussels. Société Entomologique,—Annales, Vols. I—XXVII.
- . ———. Bulletin, 1881—1883.
- . Société Royale Malacologique,—Annales, Vol. XVIII.
- . ———. Procès-Verbaux, 5th August, 1883 to 6th December, 1884.
- Buenos Aires. Academia nacional de Ciencias,—Vol. VII, Part 3.
- Calcutta. Agricultural and Horticultural Society of India,—Journal, Vol. VII (new series), Part 3.
- . Geological Survey of India,—Memoirs, Palæontologia Indica, Vol. I (series IV), Part 4.
- Dorpat. Naturforscher-Gesellschaft,—Archiv für die Naturkunde, Vol. IX (series I), No. 5.
- . ———. Sitzungsberichte, Vol. VI, No. 3.
- Florence. Società Italiana di Antropologia, Etnologia e Psicologia Comparata,—Archivio per l' Antropologia e la Etnologia, Vol. XIV, No. 3.
- The Hague. Koninklijk Instituut Taal-, Land-, en Volkenkunde van Nederlandsch-Indië,—Bijdragen, Vol. X, No. 2.
- Lahore. Anjuman-i-Punjab,—Journal (English section), Vol. V, Nos. 13—15 and 17.
- London. Academy,—Nos. 671—675.
- . Anthropological Institute of Great Britain and Ireland,—Journal, Vol. XIV, No. 3, February, 1885.
- . Athenæum,—Nos. 2994—2998.
- . Geological Society,—Quarterly Journal, Vol. XLI, Part I, No. 161, February, 1885.
- . Nature,—Vol. XXXI, Nos. 802—806.
- . Royal Astronomical Society,—Monthly Notices, Vol. XLV, No. 3, January, 1885.
- . Royal Microscopical Society,—Journal, Vol. V (series II), Part I, February, 1885.
- Paris. Société de Géographie,—Bulletin, Vol. VI (series VII), No. 1.
- . ———. Comptes Rendu des Séances, Nos. 5 and 6, 1885.
- Philadelphia. Academy of Natural Sciences,—Proceedings, Part 3, November to December, 1884.
- Pisa. Società Toscana di Scienze Naturali,—Atti, Vol. IV, Fasc. 3.

- Rome. Società degli Spettroscopisti Italiani,—Memorie, Vol. XIV No. 1.
- San Francisco. California Academy of Sciences,—Bulletin, Nos. 2 and 3, January and February, 1885.
- St. Petersburg. Comité Géologique,—Mémoires, Vol. III, Nos. 8—10; Vol. IV, No. 1.
- . Russian Geographical Society,—Proceedings, Vol. XX, No. 6.
- Turin. R. Accademia della Scienze,—Atti, Vol. XX, No. 2.
- Vienna. Ornithologische Verein,—Mittheilungen, Vol. IX, Nos. 2—4.

BOOKS AND PAMPHLETS,

presented by the Authors, Translators, &c.

- BONAPARTE, PRINCE ROLAND. *Les Derniers voyages des Néerlandais à la Nouvelle-Guinée.* 4to. Versailles, 1885.
- ROY, PROTAP CHANDRA. *The Mahábhárata, translated into English Prose.* Part XV. 8vo. Calcutta, 1885.

MISCELLANEOUS PRESENTATIONS.

- Nederlandsch-Indisch Plakaatboek, 1602—1811, Vol. I, 1602—1642. 8vo. Batavia, 1885.
- BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN.
Annual Emigration Report from the Port of Calcutta to British and Foreign Colonies for 1883-84. Fcp. Calcutta, 1884.
- Indian Forester, Vol. XI, No. 4. 8vo. Roorkee, 1884.
- Return of the Rail-borne Traffic of Bengal for the quarter ending 31st December, 1884. Fcp. Calcutta, 1885.

BENGAL GOVERNMENT.

- Tagore Law Lectures for 1883. By Professor J. Jolly, Ph. D. 8vo. Calcutta, 1885.

CALCUTTA UNIVERSITY.

- Storm Pamphlets, collected by the late Henry Piddington. 8vo. Calcutta, 1839—51.

J. W. CHAMBERS, ESQ.

- A Description of the Burmese Empire. By Dr. W. Tandy, translated from the Italian of Father Sangermano. 8vo. Rangoon, 1885.

CHIEF COMMISSIONER, BRITISH BURMAH.

- Report on the Judicial Administration of the Central Provinces for 1884, (Civil and Criminal). Fcp. Nagpur, 1885.
- Report of Railway Borne Traffic for the quarter ending 31st December, 1884. Fcp. Nagpur, 1885.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Comparative Scales of Russian, French and English Weights, Measures and Money. Fcp. Calcutta, 1885.

COL. G. C. DE PRE'E, SURVEYOR GENERAL OF INDIA.

Norwegian North Atlantic Expedition,—Vol. XII, Zoology, Pennatulida, Vol. XIII, Zoology, Spongiadæ. Fol. Christiania, 1884—85.

EDITORIAL COMMITTEE, NORWEGIAN NORTH ATLANTIC EXPEDITION,
CHRISTIANIA.

A Catalogue of Sanskrit Manuscripts in the Library of the Deccan College. Fcp. Bombay, 1884.

Magnetical and Meteorological Observations made at the Government Observatory, Bombay, in 1883. Fcp. Bombay, 1884.

GOVERNMENT OF BOMBAY.

Excursions et Reconnaissances :—a collection of official and other papers on Cochin China. 8vo. Saigon, 1885.

GOVERNMENT OF FRENCH COCHIN CHINA.

Brief view of the Caste System of the N. W. Provinces and Oudh. By John Nesfield, M. A. Fcp. Allahabad, 1885.

GOVERNMENT, N. W. PROVINCES.

Selection from the Records of the Government of India, No. CC. Reports on Publications issued in British Burmah during 1883. Fcp. Calcutta, 1885.

HOME DEPARTMENT.

Local Institutions of Virginia. By Edward Ingle, A. B. 8vo. Baltimore, 1885.

JOHNS HOPKINS UNIVERSITY, BALTIMORE.

Catalogus der Bibliotheek van de Koninklijke Natuurkundige Vereeniging in Nederlandsch-Indië. 8vo. Batavia, 1885.

KONINKLIJKE NATUURKUNDIGE VEREENIGING IN NEDERLANDSCH-INDIE.

International Meteorological Observations, January, 1884. 4to. Washington, 1885.

Monthly Weather Review, January, 1885. 4to. Washington, 1885.

METEOR. REPORTER TO THE GOVT. OF INDIA.

Catalogue of the Australian Hydroid Zoophytes. 8vo. Sydney, 1884.

TRUSTEES, AUSTRALIAN MUSEUM, SYDNEY.

PERIODICALS PURCHASED.

Allahabad. Punjab Notes and Queries,—Vol. II. No. 19, April, 1885.

Berlin. Deutsche Litteraturzeitung,—Vol. VI, Nos. 6—8, and Index to Vol. V.

Calcutta. The Calcutta Review, Vol. LXXX, No. 160, April, 1885.

—————. Indian Medical Gazette,—Vol. XX, No. 4, April, 1885.

Cassel. Botanisches Centralblatt,—Vol. XXI, Nos. 3—7.

- Geneva. Archives des Sciences Physique et Naturelles,—Vol. XIII, Nos. 1—3.
- Göttingen. Gelehrte Anzeigen,—No. 3, 1885.
- . Nachrichten,—No. 1, 1885.
- Leipzig. Annalen der Physik und Chemie,—Vol. XXIV, No. 3.
- . Beiblätter, Vol. IX, No. 3.
- . Hesperos,—Vol. IV, No. 91.
- . Literarisches Centralblatt,—Nos. 7—9, 1885.
- Leipzig. Literatur-Blatt für Orientalische Philologie,—Vol. II, No. 1.
- London. Annals and Magazine of Natural History,—Vol. XV, No. 87, March, 1885.
- . Chemical News,—Vol. LI, Nos. 1322—1324.
- . Entomologist,—Vol. XVIII, No. 262, March, 1885.
- . Entomologist's Monthly Magazine, Vol. XXI, No. 250, March, 1885.
- . Journal of Conchology,—Vol. IV, Nos. 7—9.
- . Journal of Science,—Vol. VII (series III), Nos. 135, 136, March and April, 1885.
- . London, Edinburgh, and Dublin Philosophical Magazine,—Vol. XIX, No. 118, March, 1885.
- . Messenger of Mathematics,—Vol. XIV, No. 9, January, 1885.
- . Nineteenth Century,—Vol. XVII, Nos. 97 and 98, March and April, 1885.
- . Numismatic Chronicle,—Part 4, 1884.
- . Publishers' Circular,—Vol. XLVIII, Nos. 1140 and 1141.
- . Quarterly Journal of pure and applied Mathematics,—Vol. XX, Nos. 78—80.
- . Society of Arts,—Journal, Vol. XXXIII, Nos. 1687—1690.
- New Haven. American Journal of Science,—Vol. XXIX, No. 170, February, 1885.
- Paris. Académie des Sciences,—Compte Rendu des Séances, Vol. C, Nos. 5—7.
- . Annales de Chimie et de Physique,—Vol. IV (series VI), February, 1885.
- . Journal des Savants,—January, 1885.
- . Revue Critique,—Vol. XIX, Nos. 5—8, and Index to Vol. XVIII.
- . Revue des Deux Mondes,—Vol. LXVII, Nos. 1—4; Vol. LXVIII, Nos. 1—3.
- . Revue Scientifique,—Vol. XXXV, Nos. 6—8.
- Vienna. Orientalische Museum,—Oesterreichische Monatsschrift für den Orient, Vol. XI, No. 3.

BOOKS PURCHASED.

Ayun ul Aubāh fi Tabqat il Aṭibāh. 8vo.

Encyclopædia Britannica, Vol. XVIII (IXth Edition). 4to. Edinburgh, 1885.

Ibn Abi Useibia. By August Müller. 8vo. Königsberg, 1884.

Report of H. M. S. "Challenger," Zoology, Vol. XI. 4to. London, 1885.

TEMPLE, CAPTAIN R. C. Legends of the Punjab, No. 20, March, 1885. 8vo. Bombay, 1885.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR JUNE, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd June, 1885, at 9-15 P. M.

DR. RAJENDRALALA MITRA, C. I. E., in the Chair.

The minutes of the last meeting were read and confirmed.

Several presentations were announced as detailed in the appended Library List.

The following gentleman proposed and seconded at the last meeting was balloted for and elected an Ordinary Member :

Maulavi Naemwoollah, Deputy Magistrate, Bulandshahr.

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

Professor Nilmani Mukharji, Presidency College, proposed by Dr. Rajendralala Mitra, seconded by Major J. Waterhouse.

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

J. F. K. Hewitt, Esq.

J. Copley Moyle, Esq.

R. Logan, Esq.

The SECRETARY reported the death of the Rev. K. M. Banerjea, who had been a member of the Society from the year 1860 to his withdrawal in April last, and read the following account of Dr. Banerjea's life and labours.

The COUNCIL have to announce their deep regret at the loss the Society has sustained by the death, since the last meeting, of the Rev. Dr. Krishna Mohun Banerjea.

Dr. Banerjea was born in 1813 and received his education in the Hare School and Hindu College. At the latter place he came under the influence of one of the masters, Henry Derozio, the poet, who discussed all kinds of subjects with his pupils and directed their minds towards the improvement and regeneration of their countrymen, though at the same time destroying their religious beliefs. Derozio's teaching produced a great convulsion in Hindu society. Krishna Mohun who was one of the leaders among the pupils was expelled from his home. He became a teacher in the Hare School, and started a weekly newspaper called the "Enquirer," in which he attacked Hinduism and the orthodox party. About this time Dr. Duff, who saw the unsettled state of mind of the educated young men of Bengal with regard to religion, delivered a course of lectures on Christianity, in consequence of which Krishna Mohun accepted the Christian faith in 1832. He then studied Theology in Bishop's College, and was at length ordained a priest of the Church of England. About 1840 he became the Minister of the Church at Cornwallis Square; whence he was afterwards transferred to Bishop's College as a professor. He remained there 15 years, and then retired on pension. It was during these two periods that he carried on most of his literary labours. He was for many years Examiner of Fort William College, and in the Calcutta University; he was also a prominent member of the Calcutta Municipality. In 1876 the University of Calcutta conferred on him the degree of Doctor in Law, and in the beginning of this year he was created a Companion of the Order of the Indian Empire. He died on 11th May, 1885, and is buried at Bishop's College, the present Sibpur College.

It is in his character of oriental linguist that Dr. Banerjee is specially interesting to the Society. He was elected a member in 1860, and served for many years on the Philological Committee. He edited for the Society in the *Bibliotheca Indica* the *Markandeya Purana* in 1862, and the *Narada Pancharātra* in 1865; and he also translated into English the *Brahma Sutras* with Sankara's Commentary in 1870, and the *Mahim-nastava* a hymn to Siva. He contributed besides two papers, one on the Translation of Technical Terms in 1866, and the other on Human Sacrifices in 1876.

The numerous employments of a busy career did not allow him to devote much time to philological studies, but his acquaintance with Sanskrit and the languages derived therefrom was both accurate and profound, and his contributions to the Society's journal and publications possess a permanent value.

The PRESIDENT expressed his own regret at the death of Dr. Banerjea, and the sorrow the Hindu community had felt at the loss of one of their leading members who was distinguished for his literary attainments and public services.

The PRESIDENT reported that Mr. Pargiter had resumed his duties as General Secretary, and proposed a vote of thanks to Major Waterhouse for his services as General Secretary; the vote was carried un-animously.

The following paper was read :—

Natural History Notes from H. M.'s Indian Marine Survey Steamer Investigator, Commander ALFRED CARPENTER, R. N., Commanding.—No. 3. On the Prothallus of Padina pavonia.—By G. M. GILES, M. B., F. R. C. S., Naturalist to the Indian Marine Survey. (Postponed from previous meeting.)

(Abstract.)

The author in this paper describes certain oval deep-green bodies about 5 mm. in diameter, which he had found growing on the fronds of this common sea-weed, and scattered in clusters in immense numbers on the surrounding rocks; and arrives at the conclusion that they represent the prothallus or sexual stage of the plant—the stage usually met with being asexual and answering to a fully formed fern. Only one kind of spore is produced by the asexual plant, alternating with tufts of jointed hairs which the author regards as paranemata in opposition to Agardh, who appears to have mistaken these structures for antheridia. In many instances very young fronds of *Padina* were observed sprouting from the circumference of the prothalloid bodies, which in these cases had already begun to shrivel and decay. The minute structure of the prothalloid bodies is described in detail. The tissue containing abundant chlorophyll which gives to the bodies their beautiful green colour, is encased in a coating of white transparent cellular substance thicker and more opaque on the lower than on the upper surface, where it permits the subjacent green tissue with its marbling of darker green to be seen through it. This outer or peripheral tissue is composed of a network of stellate cells with anastomosing tails, resembling the adenoid tissue of animal histology, and enclosing in the meshes of its lower part a number of opaque spherical bodies, which appear to consist of one or more layers of minute colourless rods radiating from a common centre, so that their entire periphery is beset with minute blunt spines. It encloses a number of tubular bodies, which are supported by bands springing therefrom, the interstices being filled

with spherical nutritive cells containing much chlorophyll. The tubes are scattered in masses through the nutritive central substance, and in each mass two kinds of tubular bodies are to be distinguished differing markedly in size and in the nature of their contents. Of the two kinds of tubular masses of cells, the smaller contains in its lower part masses of cells, each consisting of an oval mother cell enclosing three daughter cells, the contents of which break up into a number of small spherules of a brilliant carmine colour, which in their turn break up into minute rods of the same bright colour: these the author considers to be antherozoids, the tubes producing them being antheridia. The tubes of the other kind are larger and are usually found close to the smaller kind, being commonly enclosed in the same sheath of small-celled tissue. Their lining is usually much thicker than that of the smaller or antheridial tubes, being ordinarily composed of two layers of larger cells. The greater part of their length is as a rule filled with mother and daughter cells, differing from those of the antheridia in containing no coloured spherules or rods and in their more granular contents. Their mode of production is described: a lining cell grows out into the lumen of the tube producing a string of cells which curls round on itself for a turn and a half; and the oldest cell in the middle of the spiral divides into daughter cells. These larger tubes are considered to be archegonia. Fertilisation, the author surmises, is effected by the breaking down of the ripe antheridial and archegonial tubes and the consequent mingling of their contents.

Mr. WOOD-MASON regretted that the author of this interesting paper had not had an opportunity of thoroughly tracing the development of the tubes which he considered to be of the nature of archegonia, and expressed the opinion that the hedgehog cells were degenerated chlorophyll-containing spherical cells, rather an ulterior stage in the development of the spore-like contents of the larger tubes, and that the layers of transparent rods giving to the bodies in question their spiny appearance were probably crystals of carbonate of lime.

The paper will be published with illustrations in the *Journal*, Part II, for the current year.



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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- . American Journal of Philology, Vol. V, No. 1.
- Bombay. Indian Antiquary,—Vol. XIV, Parts 160 and 161, May and June, 1885.
- Bordeaux. Société Linnéenne.—Actes, (4th series), Vol. VII.
- Brussels. Musée Royal d'Histoire Naturelle de Belgique,—Bulletin, Vol. III, Nos. 3 and 4.
- Buenos Aires. Academia Nacional de Ciencias,—Boletín, Vol. VIII, No. 1.
- Calcutta. Asiatic Researches,—Popular Edition, Vol. I, No. 6.
- . Geological Survey of India,—Records, Vol. XVIII, Part 2; Vol. XXI, Parts 3 and 4.
- . Original Meteorological Observations,—November, 1885.
- Chicago. American Antiquarian and Oriental Journal,—Vol. VII, No. 2, March, 1885.
- Florence. Società Africana d'Italia,—Buletino della Sezione Fiorentina,—Vol. I, Nos. 1 and 2.
- Geneva. Société de Physique et d'Histoire Naturelle,—Mémoires, Vol. XXVIII, Part 2.
- Halle. Kaiserliche Leopoldino-Carolinische Deutsche Akademie der Naturforscher,—Leopoldina, Part 19, 1883.
- . Nova Acta, Vols. XLV and XLVI.
- Havre. Société de Géographie Commerciale,—Bulletin, No. 1, 1885.
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 ———. *Musée Guimet*,—*Annales*, Vols. I—VII.
 ———. ———. *Revue de L'Histoire des Religions*, Vol. V, Nos. 1—3; Vol. VI, Nos. 4—6; Vol. VII, Nos. 1—3; Vol. VIII, Nos. 4—6; Vol. IX, Nos. 1—3; Vol. X, Nos. 1—3.
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 ———. ———. ———. *Philos-Philol classe*, Vol. XVII, No. 1.
 ———. ———. *Sitzungsberichte*, *Mathematisch-physikalische classe*, Nos. 2 and 3, 1884.
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- Roorkee. *Professional Papers on Indian Engineering*, Vol. III (IIIrd Series) No. 9, April, 1885.
- St. Petersburg. *Comité Géologique*,—*Memoires*, Vol. II, No. 1.
 ———. ———. *Proceedings*, Vol. IV, Nos. 2 and 3.
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 ———. ———. *Denkschriften*, *Mathematisch-Naturwissen classe*, Vol. XLVII.
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MUSE'E GUIMET, LYON.

Settlement Reports of the Districts of Bannu and Dehra Ismail Khan in the Punjab, 1872-1879 with 2 Atlases. 8vo. Lahore, 1879.

PUNJAB GOVERNMENT.

Anales Estadisticos de la Republica de Guatemala for the year 1883. 4to. Guatemala, 1884.

REPUBLIC OF GUATEMALA.

- Catalogue of Birds in the British Museum, Vol. X. 8vo. London, 1885.
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 Guide to the Collection of Fossil Fishes in the department of Geology
 and Palæontology. London, 1885.
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 ———. Literarisches Centralblatt,—Nos. 10—13, 1885.
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- . Annales de Chimie et de Physique,—(6th Series), Vols. II, July and August, 1884; III, September and October, 1885; IV, March, 1885.
- . Journal des Savants,—February, 1885.
- . Revue Critique,—Vol. XIX, Nos. 9—12.
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- DISTANT, W. L. Rhopalocera Malayana, Part VIII. Fol. London. 1885.
- ROMANES, G. J. Jelly-Fish, Star-Fish and Sea-Urchins, being a research on Primitive Nervous systems. 8vo. London, 1885.
- TEMPLE, CAPTAIN R. C. Legends of the Punjab, No. 21. 8vo. Bombay, 1885.
- TRYON'S Manual of Conchology, Part XXV; second series, Part I. 8vo. Philadelphia, 1885.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.

FOR JULY, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st July, 1885, at 9.15 p. m.

Dr. R. MITRA, C. I. E., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Several presentations were announced, as detailed in the Library List appended.

The following gentleman proposed and seconded at the last meeting was balloted for and elected an Ordinary Member of the Society.

Professor Nilmony Mukerji.

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

John Barnett, Esq., Branch Pilot, proposed by J. Wood-Mason, Esq., seconded by H. B. Medlicott, Esq.

The PRESIDENT exhibited some Sanskrit manuscripts treating of ancient Hindu Veterinary art.

DR. MITRA said—the five MSS. which he laid on the table referred to Veterinary art, a subject which had not yet been noticed by any European orientalist. This was due to the extreme scarcity of Sanskrit works on the subject, and to the neglect with which it had been treated by the modern Paṇḍits of the country. Nor was that a matter of wonder. The later Paṇḍits who wrote Sanskrit works were mostly hermits, yearning for a hereafter, having little care for the affairs of this world, or priests engaged in ritual duties. To them the characteristics and diseases of horses offered no attraction; so they never studied

or wrote any work about them, nor cared to preserve them. Such was, however, not the case in ancient times when Bráhmans and scholars were kings and ministers, and the horse was looked upon as a vitally important element of a kingdom. Then, as a literary nation, the Hindus wrote works on that subject, as on all other subjects which engaged their attention. When the first attempt was made systematically to study the veterinary art, it was not easy to determine, but there was every reason to suppose that it dated from a very remote period of antiquity, when medicine for human ailments first attracted attention. According to Greek tradition the oldest surgeon was Cheiron, son of Kronos by the ocean nymph Philyra, whom Kronos metamorphosed into a mare to prevent his wife Rhea ill-treating her. Born from the womb of a mare, Cheiron was a Centaur. According to some he was a Thessalian prince of the 13th century B. C., and foster-father of Æsculapius to whom he taught his art. According to the Vedas the surgeons of the gods were the twin brothers Ásvínikumára, who were born of a mare. Bearing in mind the close relationship which Greek mythology bears to Vedic traditions, it may safely be inferred that there was an Aryan story current in Central Asia before the Aryans separated into Greeks and Hindus, and that the stories of the Ásvins and of Cheiron were different versions of that original. This carried back the date of the origin of veterinary art to a period of which little was now known; but it sufficed to establish the extreme antiquity of the art among the Indians. The Ásvins were described to have taught the art of medicine to Atri and other sages, from whom it has descended to us. The sages and their immediate followers do not seem to have paid much attention to veterinary art, and there is no tradition to show how the art taught by the Ásvins was preserved. It would seem that after a time the art was split into two parts, one devoted to cattle, and the other to horses. Of the former the most ancient and renowned professor was one Pálakápya, who is frequently noticed in the Puráṇas and elsewhere. The only work attributed to him that Dr. Mitra had seen was a treatise on the training and treatment of elephants; but from the style of the work he suspected it was of a much later date. In some modern MSS. the word is written Pálakávya, but that is obviously incorrect. For the second branch, the earliest professor and author named was Sálihotra. Some say he was a native of Salátura, a town in the neighbourhood of Kandahar, ancient Gándhára. The great grammarian Páṇini was a native of this town, and hence his surname Sáláturiya. Some go the length of saying that Sálihotra and Páṇini were names of the same person; others identify Sálihotra with Dhanvantari; but Dr. Mitra could find no reason to

justify these conjectures. Anyhow, Sálíhotra gave his name to the horse, to veterinary medicine, and to the horse-doctor. The most popular name for the horse-doctor all over Hindustán proper is *saluteṭ*, and his art is called *Saluteri*. No authentic work of Sálíhotra has come down to the present day; but the *Agni Purána* quotes several chapters, which it attributes to him, and Sir Henry Elliot notices a Persian work, named *Kurraṭ ul Mulk*, which he found in the Royal Library at Lucknow, and which professed to be a translation from an original named *Salutár*, which, it said, was the name of an Indian, a Bráhmaṇ and the tutor of Suśrúta. The preface of that work, with characteristic ill-feeling, says that the translation was made in A. H. 783 (A. D. 1381) "from the barbarous Hindi into the refined Persian in order that there may be no more need of a reference to the infidels." It was a small work, divided into eleven chapters and thirty sections. Sir Henry refers to another Persian work which was translated from a Sanskrit MS. which one Sáiyid Abdullá had plundered from the Library of Amar Siñh, of Chitor, during the reign of Jahángír. The Sanskrit name of the work is said to have been *Salutári*. Neither of these referred to an Arabic translation which was published at Bagdad under the name of *Kitáb ul Baitarat*. The only Hindi work Dr. Mitra has found bears the name of *Sálíhotra*, and a MS. of it was laid on the table. Judging from its size and character, Dr. Mitra was under the impression that that was the work from which the Persian version of the 14th century had been made; but as he had not seen the Persian version, he could not speak with any certainty. The name of the Hindi translator was Chetana.

Soon after Sálíhotra come the twin Páṇḍava brothers, Nakula and Sahadeva, who were reputed to be the natural born twins of the Ásvins, and devotedly attached to the profession of their parents. The *Mahábhá-rata* does not refer to any work written by them, but Dr. Mitra laid on the table a MS. which professes in its colophon to be the work of Nakula, the elder of the two brothers. The colophon gives two names to the work. *Sálíhotra* and *Ásvachikitsita*: the words of the colophon are *Nakulakṛite Sálíhotre Ásvachikitsite*. Its language is archaic and enigmatical, and it is limited to 18 short chapters. It opens with an anecdote of Sálíhotra who is appealed to, to describe the qualities of horses fit for the use of Indra. Old as the work doubtless is, there is no positive proof to show that its author was really a Páṇḍava. There is nothing in the text to prevent the assumption that the author was of a much later date and of less dignified pedigree. On a cursory examination Dr. Mitra found the Hindi work to be a very loose rendering of this text.

Dr. Mitra next noticed a work entitled *Vājīśāstra* or "Horse science." The codex is very corrupt and full of lacunæ, and it was the only one that had been seen by him. It had been obtained from a correspondent at Kathmandu, who copied it hastily, not being able to purchase the original. The author of it calls himself Dīpaṅkara "whose mind was unswervingly devoted to the feet of the great Buddha Dīpaṅkara." His father's name was Mánákara, "who was like Buddha himself, the son of Suddhodana." His grandfather was Trinidhanakara, who was a great physician and resident of Kátára (? or Tátára). As the codex is very corrupt, Dr. Mitra had not been able to make much use of it.

The next work on the table was called *Áśva-vaidyaka* or "treatment for horses." It had been sent to Dr. Mitra by a correspondent in Nepal, but it had been copied with more care, and was in a better state of preservation. Its author's name was Jayadatta, son of Vijayadatta. It is a comparatively modern work, and professes to be only an epitome; but it extends to 68 chapters. It treats at some length on all the topics which come under its purview, and the information contained in it would be very useful and interesting to a large number of readers. If a second codex could be got, Dr. Mitra would have strongly recommended it for publication in the *Bibliotheca Indica*. It opens with the anatomy of the horse, giving names for all the parts of the body, and points out what are reckoned as defects of those parts. In connexion with this subject there are two chapters which treat of the various whirls of hair on the head, face, neck, chest, and the legs which are supposed not only to presage the fate of the animal, but also the good or evil luck which the animal is sure to bring to its owner. This curious folklore prevails all over India, both among the Hindus and the Muhammadans, and there are several Persian works in which it is treated at length. Dr. Mitra was not aware of the existence of any such folklore in Europe; but closely allied to it was the belief about the colour of the feet of horses. Most people were doubtless aware of the saying:

"One white foot—buy a horse;
Two white feet—try a horse;
Three white feet—look well about him;
Four white feet—do without him."

In India the folk-lore on the subject is just the reverse. Knowing people will have nothing to do with a horse that has only one or two feet white, but they prize highly a horse stockinged on four feet and having a blaze on the forehead. It is called *Panchakalyána* or "five-fold auspicious." Ideas of good and evil luck are also associated with the neighing, weeping and refusal of food by horses, and the work under

notice treats of them in some detail. Dr. Mitra found in it no mention of the horse-shoe, though the *Rig Veda* refers to it in one of its verses. The belief in the value of the horse-shoe as a means of securing good fortune, so prevalent in England, is unknown in India, except among a few farriers in Calcutta and Bombay who have, doubtless, got it from their English teachers. The work next treats of the size, motion, colour, span of life, stages of life, and races of horses. In treating of age the work points out the value of the cavities, colour and the grooves on the incisors as sure indications, warning the reader at the same time about the wicked practice of bishopping. The feeding, stabling, and breeding of horses next follow, and the rest of the work is devoted to the treatment of the diseases to which horse-flesh is subject. Bleeding, blistering, actual cautery, poulticing and fomentations are largely recommended, and the list of *materia medica* given is pretty large. Among the diseases mentioned, both glanders and farcy find a place. The former is called *ghrīni*, and the latter *utkarna*. These names do not occur in any Sanskrit dictionary; but the descriptions given leave no room for doubt in the matter. The *ghrīni* is described to be a disease characterised by the flow of offensive purulent matter from the nostrils, and always to terminate fatally. The *utkarna* is known by a harsh, rough pilage, attended with large glandular swellings on the neck, chest and the legs, followed by the loss of power of action in the ears, tail, and the skin of the body; the swellings run to suppuration and bring on death.

Dr. Mitra added that he had an intention of preparing an analysis of the work in the form of a paper, and hoped to have an early opportunity of submitting it for the Society's Journal.

The PHILOLOGICAL SECRETARY laid on the table "A Comparative Dictionary of the Bihári language," Part I, by Messrs. Grierson and Hoernle, presented by the authors.

Mr. BEAMES remarked—

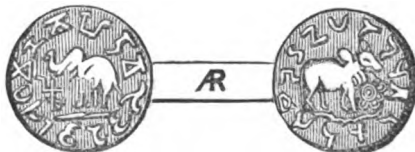
This is the first instalment of a most valuable and important work presented to the Society by the joint authors, both of whom are well-known not only as philologists of the first rank, but as having devoted special study to the languages of Bihár. Dr. Hoernle in his *Comparative Grammar of the Gaudian languages* was the first to point out the marked differences between the speech of Bihár and the ordinary Hindí, and Mr. Grierson in a series of grammars has minutely and carefully worked out all the peculiarities of the dialects of that province. In his grammars the last named scholar gives only three leading dialects the Bhojpúri, Maithilí, and Magahí; but in the dictionary a fourth dialect is included, the Baiswári, spoken in eastern Oudh and as far south as

Jabalpur. This dialect can hardly be called Bihári, as it is spoken in a tract of country lying outside of the political boundary of the province of Bihár, nor is it pure Bihári being largely mixed with Western Hindí. The inclusion of this closely allied dialect has, however, the advantage of enabling the authors to explain and illustrate the *Rámáyan* of Tulsí Dás, by far the most popular modern work in all Northern India which is written in Baiswári.

Although the present instalment only carries us as far as the first quarter of the first letter of the alphabet, yet there is sufficient material to enable a judgment to be formed as to the plan and execution of the work, and there is an extremely lucid and valuable introduction in which the authors explain their system of transliteration, their method of dealing with the short and obscure vowels which form so marked a feature in Bihári, as in fact in all unwritten peasant dialects, also their treatment of certain declensional and conjugational peculiarities. They further explain at some length the origin of these dialects from the *Mágadhí Prákrit*, the division of words into classes according to their derivation, and many other interesting points relating to the scanty literature of Bihári.

In the dictionary itself we find a method of treatment far more accurate and scientific than has yet been applied to any Indian language. Each word, even each dialectic form of a word has a separate article devoted to it, in which its various significations are given in their true linguistic order of succession, and illustrated by ample quotations from literature or colloquial phrases, and finally the derivation is carefully traced from the Sanskrit down through the various phrases of *Prákrit*, with the corresponding forms of the word in the other Aryan languages of India. Nothing so thorough and complete as this has ever been attempted before for any Indian language. The thanks of the Society are due to the authors for this extremely valuable work, and it is to be hoped that they may be enabled to bring it to a satisfactory conclusion.

The PHILOLOGICAL SECRETARY read the following note on an old Hindú coin by the Rev. Charles Swynnerton, and a letter from General Cunningham on the same subject :



Size of the coin—precisely as in the figuring.

Weight— $33\frac{1}{2}$ grains exactly.

This silver coin which appears to be unique comes from the Kángrá Valley. I was riding through the district last June, when I turned into a village in the hope that I should find some specimen coins of the Kángrá Rájás. I was entirely unsuccessful, but as I was leaving the village, a silversmith ran after me and offered me this coin for which I paid him six annas. At first I imagined it to be a pure Bactrian, but the absence of the Greek letters puzzled me. Subsequently I referred it to General Cunningham who was good enough to interpret it for me. The following is the portion of his letter referring to it.

“*Simla, 14th June, 1885.*”

“MY DEAR SIR,

“I thought that I had an impression of a small silver coin like yours, but yesterday on opening a packet of impressions in lead I found that my memory had deceived me, and that your coin is a new one.

“The types of Elephant and Bull are the same as on your coin; but the name is different. I read your coin as follows:

Under the Elephant.

Bhâgevata Mahadevasa Rajaraja.

Under the Bull.

j r jr s v. de h m t. v. g. bh.

“*Bhâgavata* means the worshipper of *Bhagavata*. The king's name is therefore Mahâdeva.

“The other coin of which I have an impression is in the Lahore Museum—and there is a duplicate of it in England, in the possession of Mrs. Freeling.

“I remain,

“Yours sincerely,

“A. CUNNINGHAM.”

The following papers were read—

1. *Notes on Indian Rhynchota. No. 3.*—By E. T. ATKINSON, B. A.

(Abstract.)

This paper is the third instalment of the author's notes on *Rhynchota*. The first was printed in full in the *Journal*; Pt. II, No. 3 for 1884, and the second in No. 1 for the current year. The present list comprises 59 species distributed amongst the following genera: *Oxyhachis* 5, *Hypsauchenia* 2, *Leptobelus* 6, *Xiphopæus* 1, *Acanthophyes* 1, *Leptocentrus* 3, *Centrotypus* 3, *Coccosterphus* 1, *Hemiptycha* 1, *Scaphula* 1, *Signoretia* 11, *Tituria* 1, *Bythoscopus* 1, *Tettigonia* 10, *Hecalus* 2, *Thomsoniella* 1, *Selenocephalus* 1, *Siva* 1, *Drabescus* 2, *Jassus* 1, *Thamnotettix* 1, *Hylca* 1, *Penthimia* 2.

The paper will be published in full in *Journal*, Part II of 1885.

2. "*The Swatch of no ground.*—By COMMANDER ALFRED CARPENTER, R. N., in charge of Marine Survey of India. Communicated by the NATURAL HISTORY SECRETARY.

This paper, which is too brief to admit of being given in abstract, will be published in full in the Journal, Part II, No. 2 for the current year.

3. *A Coincidence in Folk-lore.*—By the REV. CHARLES SWYNNERTON.

When in Naples a few months ago I bought in Italian at a book-stall a copy of the *Liber Facietiarum* of that learned and eccentric ecclesiastic of the fifteenth century, Poggio Bracciolini of Florence, who was one of the brightest ornaments of a period which produced Lorenzo de Medici, Traversari, Bruni, and Politiano, and which first introduced the literary treasures of the ancient Greeks to the nations of West. This, the last edition of Poggio's most remarkable work, was published in Rome in January of the present year, and my object in noticing it here is to record a very singular coincidence which subsists between one of his *facezie*, and a fable which is found among the wild Afghan tribes of our North-West frontier, and which is frequently quoted by the village gossips in ridicule of the gross stupidity of the hill-men of Banér. This fable or rather anecdote appears as Story XV in my lately published volume entitled "*The Adventures of Rájá Rasálu and other Folk-tales of the Upper Panjáb,*" and in order to show the singularly close resemblance between the two stories I cannot do better than quote them in parallel columns, the one in English and the other in Italian.

STORY XV.

The Baneyri and his drowned wife.

There was once a sudden flood in the Indus, which washed away numbers of people, and, among others, the wife of a certain Baneyri. The distracted husband was wandering along the banks of the river looking for the dead body, when a countryman accosted him thus:—"O Friend, if, as I am informed, your wife has been carried away in the flood, she must have floated down the stream with the rest of the bodies; yet, you are

FACIZIA LIX.

Di un uomo che cercava sua moglie annegata nel fiume.

Un altr' uomo, cui era morta la moglie nel fiume, andava contr'acqua a ricercarne il cadavere. Uno che lo vide rimase di ciò meravigliato e lo consigliò di andar secondo la corrente:—"In questo modo," rispose l'uomo, "non potrebbe trovarsi; perchè quando visse fu tanto contraddicente, e difficile, e contraria alle abitudini degli altri, che anche dopo morte essa andrà contro la corrente del fiume."

going up the stream." "Ah, Sir," answered the wretched Baneyri, "you did not know that wife of mine. She always took an opposite course to every body else. And, even now that she is drowned, I know full well that if other bodies have floated down the river hers must have floated up!"

Poggio, for his day, was a great traveller, having visited most of the courts of Europe including that of England, so it is difficult to say whether he picked up the story in Italy or elsewhere. In Europe, however, it certainly existed as a household tale in the fifteenth century, and here in the nineteenth it re-appears on the Upper Indus. It is not often that in folk-tales a collector discovers a resemblance so exactly marked, though I possess several, hitherto unpublished, almost as striking in their apparent identity; and the conclusion which seems forced upon the mind from a comparison of these various stories is not so much that they owe their similarity to an accidental coincidence in thought or inspiration among peoples living far apart, like those undesigned coincidences which are also to be observed in the works of great writers and even composers, but rather that they can trace their original source to some common tribe or family of men, whether in Central Asia or elsewhere, whose descendants, extending themselves east and west over the world, carried their household words with them. To those who have made a special study of this fascinating branch of learning, this is the theory which appears to commend itself, so that what is historically true of language in general, is likewise true of those simple tales in which are preserved the primitive deposits of the human imagination.

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.

- Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VII, No. 1, April, 1885.
 ———. ———. Circulars, Vol. IV, No. 39.
 Buenos Aires. Academia Nacional de Ciencias,—Boletin, Vol. VII, No. 4.
 Calcutta. Original Meteorological Observations,—December, 1884.
 ———. United Service Institution of India,—Journal, Vol. XIV, No. 62.
 Copenhagen. K. Nordiske Oldskrift Selskab,—Aarboger, No. 1, 1885.
 ———. ———. Memoires, 1885.
 ———. ———. Tillæg, 1884.
 Dublin. Royal Society,—Proceedings, Vol. IV, Parts 5 and 6, January and July, 1885.
 ———. ———. Transactions, Vol. III, Nos. 4—6, July and November 1884 and February, 1885.
 Edinburgh. Botanical Society,—Transactions and Proceedings, Vol. XVI, Part 1.
 Lahore. Aujuman-i-Punjab,—Journal, Vol. V, Nos. 22—25.
 Leipzig. Deutsche Morgenländische Gesellschaft,—Zeitschrift, Vol. XXXIX, No. 1.
 Liège. Société Géologique,—Annales, Vol. X.
 London. Academy,—Nos. 680—683.
 ———. Athenæum,—Nos. 3003—3006.
 ———. Nature, Vol. XXXII, Nos. 811—814.
 Paris. Société de Géographie,—Compte Rendu des Séances, Nos. 9—11, 1885.
 Pisa. Società Toscana di Scienze Naturali, Atti, Processi Verbali, Vol. IV, 22nd March, 1885.
 Philadelphia. Academy of Natural Sciences,—Proceedings, Part I, January to March, 1885.
 Rome. Società degli Spettroscopisti Italiani,—Memorie, Vol. XIV, No. 4, April, 1885.

- St. Petersburg. Comité Géologique,—Proceedings, Nos. 4 and 5, 1885.
 ———. Russian Geographical Society,—Proceedings, Vol. XXI, No. 2.
 Turin. R. Accademia della Scienze,—Atti, Vol. XX, No. 5.

BOOKS AND PAMPHLETS,

presented by the Authors, Translators, &c.

- HOERNLE, Dr. A. F. R. and GRIERSON, G. A. A Comparative Dictionary of the Bihāri Language. Part I, 4to. Calcutta, 1885.

MISCELLANEOUS PRESENTATIONS.

- Annual Report of the Police Administration of the Town of Calcutta and its Suburbs for the year 1884. Fcp. Calcutta, 1885.
 Indian Forester, Vol. XI, No. 5, May, 1885. 8vo. Roorkee, 1885.

BENGAL GOVERNMENT.

- Report of the 54th Meeting of the British Association for the Advancement of Science. 8vo. London, 1885.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

- Report of the Police Administration of the Central Provinces for the year 1884. Fcp. Nagpur, 1885.
 Report on the working of the Registration Department in the Central Provinces for the year 1884. Fcp. Nagpur, 1885.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

- Excursions et Reconnaissances, Vol IX, No. 21, January and February, 1885. 8vo. Saigon, 1885.

GOVT. OF FRENCH COCHIN-CHINA.

- Archæological Survey Reports, Vol. XIX. 8vo. Calcutta, 1885.

HOME DEPARTMENT.

- Annual Administration Report of the Forest Department of the Madras Presidency for the year 1883-84. Fcp. Madras, 1885.
 Annual Report of the Civil Hospitals and Dispensaries in the Madras Presidency for 1883. Fcp. Madras, 1884.

MADRAS GOVERNMENT.

- BLANFORD, H. F., F. R. S. Report on the Meteorology of India in 1883. Fcp. Calcutta, 1885.
 International Meteorological Observations, March, 1884. 4to. Washington, 1885.
 Monthly Weather Review, March, 1885. 4to. Washington, 1885.

METEOR. REPORTER TO THE GOVT. OF INDIA.

- Monograph on Cotton Manufacture in the Punjab. Fcp. Lahore, 1885.

PUNJAB GOVERNMENT.

- Addenda to the Bengal Route Book of 1877. 8vo. Simla, 1885.

QUARTER MASTER GENERAL OF INDIA.

Informe Dirijido al Senor Secretario de Fomento Sobre los trabajos por la oficina de Estadistica en el ano de 1884. 8vo. Guatemala, 1885.

REPUBLIC OF GUATEMALA.

PERIODICALS PURCHASED.

- Allahabad. Punjab Notes and Queries,—Vol. II, No. 21, June, 1885.
 Calcutta. Indian Medical Gazette,—Vol. XX, No. 6, June, 1885.
 Geneva. Archives des Sciences Physiques et Naturelles,—Vol XIII, No. 5.
 Giessen. Jahresbericht über die Fortschritte der Chemie,—No. 3, 1883.
 Leipzig. Annalen der Physik und Chemie,—Vol. XXV, Nos. 1 and 2.
 ———. ———. Beiblätter,—Vol. IX, Nos. 4 and 5.
 London. Chemical News,—Vol. LI, Nos. 1329—1332.
 ———. Journal of Science,—Vol. VII, No. 138, June, 1885.
 ———. Nineteenth Century,—Vol. XVII, No. 100, June, 1885.
 ———. Publishers' Circular,—Vol. XLVIII, Nos. 1144 and 1145.
 ———. Society of Arts,—Journal,—Vol. XXXIII, Nos. 1695—1698.
 Paris. Revue des Deux Mondes,—Vol. LXIX, Nos. 1 and 2.
 Vienna. Orientalisches Museum,—Oesterreichische Monatsschrift für den Orient,—Vol. XI, No. 5.

BOOKS PURCHASED.

- TEMPLE, Captain R. C. Legends of the Punjab, Nos. 22 and 23. 8vo. Bombay, 1885.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR AUGUST, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 5th August, 1885, at 9.15 P. M.

Dr. R. L. MITRA, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Several presentations were announced, as detailed in the Library List appended.

The undermentioned gentleman, proposed and seconded at the last meeting, was balloted for and elected an ordinary member of the Society :

John Barnett, Esq., Branch Pilot.

Mr. G. S. Leonard and Colonel S. T. Trevor have intimated their wish to withdraw from the Society.

The PRESIDENT announced that Dr. A. F. R. Hoernle had resumed his duties as Philological Secretary, and proposed a vote of thanks to Mr. J. Beames for his services during Dr. Hoernle's absence.

The vote was carried unanimously.

The PRESIDENT reported that the Council had sanctioned the publication, in the Bibliotheca Indica Series, of the following works :

1. The Sāt Sai of Tulsi Das, to be edited by Pandit Beharilal Chaubé of the Patna College.

2. A translation of the Tuzakh-i-Jahangiri, by Professor W. H. Lowe of Cambridge.

Read a letter from the Superintendent, Government Central Museum, Madras, forwarding a specimen of a Viraraya Gold Coin (Fanam) found in the Calicut Taluq and acquired under the Treasure Trove Act.

The NATURAL HISTORY SECRETARY (MR. WOOD-MASON) exhibited *Lyreidus Channeri*, a remarkable new blind Brachyurous Crustacean from the depths of the Bay of Bengal and said—

Four species of true *Brachyura* were dredged up from depths exceeding 100 fathoms during the past season by H. M.'s Indian Marine Survey Steamer 'Investigator.' They belong to the genera *Amathia*, *Ethusa*, *Encephaloides* (new genus allied to *Collodes*, Stimpson), and *Lyreidus*, of which the last named is especially interesting on account of the rudimentary condition of the eyes. These organs are unequally reduced: the cornea of the left being of the normal form and extent, but opaque and devoid of all traces of facets, as in *Munidopsis*, *Orophorhynchus*, *Nephropsis*, and other blind forms of the deep sea, while that of the right is entirely aborted, its place being only indicated by a small smooth spot marked out by the transparence of a lead-coloured pigment similar to that which is seen through the integument around the base of the left eye. This interesting brachyuran, which is at once distinguished from the Japanese and American species by having the antero-lateral margins of the carapace armed with two pairs of long and slender spines, was trawled up from a depth of 285—405 fathoms, bottom temperature 48°—50° Fahr., in the 'Swatch of no Ground', off the mouths of the rivers Ganges and Brahmaputra.

The PHILOLOGICAL SECRETARY, exhibited copy of the following Persian inscription from Sherpur, sent by Mr. J. Anderson, Magistrate of Murshidabad.

قال الله تعالى كل من عليها فان ويبقى وجه ربك ذو الجلال

دیدیم مسجدیکه درو سر بسر صفا است

آرے صفا چرا نه بود خانه خدا است

در عهد شاه جهان بناه یسد علی متولی

سنه ۱۰۳۸ هجری

God the most high has said, "Every creature which liveth on the earth is subject to decay; but the glorious and honourable countenance of thy Lord shall remain for ever."

We have seen a mosque wherein there is entire cleanness ;
 ' Indeed ! ' Why should it not be clean, (when) it is the house of
 God.

Built by Sayyid 'Alí, Mutawallí during the reign of Sháh Jahán in
 the year 1038 A. H.

The PHILOLOGICAL SECRETARY read :

1. A Report on a find of ancient coins at *Pagara* in the Chindwarra
 district, Central Provinces forwarded by Mr. W. Vertue, Deputy Com-
 missioner, with his No. 2032 of 28th May 1885.

The find comprises coins of the following Sovereigns :—

I. Pathán Sultáns of Delhi.

	No. of specimens.
1. No. XIX, Muḥammad bin Tughlaq, A. H. 725—752=A. D. 1324—1851. A Khalifat coin. <i>Gold</i> . No date or mint. See E. Thomas' <i>Chronicles of the Pathan Kings of Dehli</i> , No. 213. ...	1
2. No. XX, Fírúz Sháh, A. H. 752—790=A. D. 1357—1388. Round, <i>gold</i> . Date illegible. See <i>Chr.</i> No. 224. ...	3
3. No. XXXVI, Sher Sháh, A. H. 947—952=A. D. 1540—1545. <i>Silver</i> . Dates : 949, 950. See <i>Chr.</i> No. 348. ...	2
4. do. do. do. <i>Silver</i> ; date 949 ; <i>Chr.</i> No. 351 ...	1
5. do. do. d. <i>Silver</i> ; date 949. Mint : Gwalior. See <i>Chr.</i> 352. ...	1
6. No. XXXVII, Islám Sháh, A. H. 952—960 = A. D. 1545—1552. <i>Silver</i> ; date 960. See <i>Chr.</i> No. 359. ...	1
7. do. do. do. <i>Silver</i> , date 954. See <i>Chr.</i> No. 361, a ...	1
8. No. XXXVIII, Muḥammad, Adil Sháh, 961 = 1553. <i>Silver</i> ; date : illegible. See <i>Chr.</i> No. 365. ...	1

II. Sultáns of Málwá.

9. No. V, Ghiyásuddín <i>Khilji</i> , A. H. 887—906 = A. D. 1482—1500. Square, <i>gold</i> ; date : (of one) 895, others illegible. <i>Chr.</i> p. 349. ...	3
10. No. VI, Násiruddín <i>Khilji</i> , A. H. 906—916 = A. D. 1500—1510. Square, <i>gold</i> ; date (if any) illegible. See <i>Chr.</i> pp. 346, 349. ...	1

III. Bahmaní Sultáns.

11. No. V, Maḥmúd Sháh I, A. H. 780—799 = A. D. 1378—1397. <i>Gold</i> , round. N. B. Imitates coins of 'Aláuddín Muḥammad, the Pathán. See <i>Chr.</i> p. 341. ...	1
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	No. of specimens.
12. No. VIII, Tájuddín, Fírúz Sháh, A. H. 800—825 = A. D. 1397—1422. <i>Silver</i> Rupee; date 823. See <i>Chr.</i> pp. 341, 345.	1
13. No. X, 'Aláuddín II, bin Aḥmad, 838—862 = 1435—1457. Round, <i>gold</i> ; date; [8]55. See <i>Chr.</i> pp. 341, 843.	... 1
14. No. XIII, Muḥammad Sháh II, A. H. 867—887 = A. D. 1463—1482; round, <i>gold</i> date: 878. See <i>Chr.</i> pp. 341, 346, (legend: Abul Muzaffar, Shamsuddín Maḥammad Sháh, bin Humayún Sháh as Sultán).	1

IV. Jaunpur Sultáns (Sharqí).

15. No. III, Ibráhím Sháh, 805—844 = 1401—1440. <i>Gold</i> , round; with organ-pipe letters. See <i>Chr.</i> p. 321: No. 1, a	... 1
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V. Sultáns of Gujarát.

16. No. XIII, Maḥmúd Sháh III, A. H. 944—961 = A. D. 1537—1553. Small dumpy, <i>silver</i> . No date or mint. <i>Chr.</i> pp. 351, 353	6
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In the collection there are altogether 12 *gold* and 14 *silver*, total 26 coins. They cover a period of two centuries and a quarter, *viz.* from 1324 to 1553 A. D.

2. A Note by Col. G. E. Fryer on a Burmese copy of the Kalāpa Grammar.

"I have recently obtained a complete copy of the Kalāpa grammar called by the Burmese 'Kaláp Kyan' and I find it to be an exact counterpart of the Sanskrit Kátantra, together with the alternative readings, as edited by Eggeling in the Bibliotheca Indica Series. I am not aware that this fact has been noticed before.

The work is written in Burmese Sanskrit characters upon about 82 palm leaves, eleven lines to a leaf. The Sandhi, Káraka, and Samāsa chapters take five leaves each. Nāma and Taddhita take eight and six respectively. Akhyáta occupies 24 and Kita 28 leaves. The work closes with 'iti daurgasíhyá bríttau krittú shashṭha páda samáptah.

The forms for the two Sanskrit sibilants, the palatal and lingual, which are wanting in the Burmese alphabet are thus given ढ ढ = ढ ढ *daśa*, ten; and ष ष = ष ष *shash*, six. You will find these two forms given at page 4 of a Burmese grammar printed at Serampore in the early part of 1814, by F. Carey, I think (for my copy of this grammar has no title page). The writer, however, has made his Burmese symbol correspond to the wrong Sanskrit sibilant. His symbols should change places.

Immediately preceding the 82 pages forming the text of the grammar, there is a list of all the sūtras, filling ten leaves. Immediately

following the text there is a Burmese paraphrase of the Sandhi chapter, which occupies 45 leaves. I am told there is no other paraphrase but the one for this chapter. I am not satisfied with my authority for this statement: but it may be so, since it ends in a very definite way thus:—*Aggadhammálankára therena viracitam sandhiklāpanissāyaṃ niṭṭhitam* and gives a date:—*sakkarājassa pana sahassa aṭṭha-sattati phussamāsasmim ayaṃ sandhiklāpanissāyaṃ niṭṭhitam*, which in the absence of anything to the contrary, I take to be, in Dec.—Jan. 1078 B. E., circa A. D. 1716.”

3. A Note by Mr. J. G. Delmerick on the 100 gold mohur piece, exhibited by Mr. Gibbs at the March meeting,

“The coin which the Hon’ble J. Gibbs, C. S. I. exhibited on the 4th March last and which is noticed in the Proceedings of the Asiatic Society for that month, was offered for sale to me in 1874 by the owner a native banker of Benares. He asked Rs. 2200 for it, but I declined to give more than 1600 Rs. or somewhat more than its intrinsic value, but he refused to accept my offer. I then wrote to Mr. R. S. Poole of the British Museum and asked him if he would buy it for the Museum. In reply under date the 11th June 1875 he wrote to me as follows:—

“I am much obliged by your letter in reference to the gold medal of Aurangzib and I regret that I cannot avail myself of your kind aid in the matter as the Trustees never make any outlay for an object which is not submitted to them. I see that a similar medal in silver is in the Cabinet of Gotha; probably it is an impression from the same die. I should say that its value ought not to exceed about £150. I refer to the gold one.”

When the Imperial Assemblage took place at Delhi the owner came there and presented the coin as a *peshkash* or *nazar* to the Mahárāja of Gwalior, believing no doubt that he would receive some thing more valuable in return, but I was informed that he was cruelly disappointed for he only obtained a *khillat* of trifling value.”

4. A Note by Mr. Chas. J. Rodgers on Major Raverty’s objections to his paper on “Some Coins from Candahar.”

“I am much obliged to Col. Prideaux for his kind remark on my paper, entitled “Some coins from Kandahár.” I have no doubt that the correct reading of the coin is Táj ud Dín Muhammad bin Harab. Col. Prideaux kindly pointed this out in a letter to me, as did also my friend L. White King, Esq., C. S. of Peshawur (now of Ajmeer). But Major Raverty in his paper raises no point at all. He rather confirms all I say. The coins of Harab, and Táj ud Dín his son, and Nasar bin Bahrám Sháh are according to his showing of Sistán or Nímroz. Now-a-days we say Nímroz or Sistán is in the south west of the country marked on our maps as Afghánistán. The coins of Mangú Qáán were

struck at Herat and Gazní as we see from the inscriptions, and Herat is in the north west of what we call now Afghanistan. I do not think I was wrong in saying that these coins were little known. There were none, when I wrote my paper, in the British Museum or in any known collection. My chief sin seems to have been this, that I had not read Major Raverty's translation of the *Ṭabaqát i Náṣirí*. This sin of omission I am trying to get rid of,—for, as soon as my attention was called to the existence of the book, I at once purchased a copy. I find it a vast repertory of Oriental learning, tinged however with a certain amount of "surprise" at the errors people fall into when studying a subject hitherto little known. We stand on the shoulders of our forefathers, and see further than they did. We ought therefore to be thankful for further light obtained by their labours, and not ridicule their mistakes in a sarcastic manner. Here in the Panjáb, working alone and without a library of reference and with few hours of leisure, there is no wonder that I made and do make small mistakes. Major Raverty, unlike Col. Prideaux, does not give me the credit for discovering the coins and bringing them to notice. Col. Prideaux is, however, a fellow-worker in numismatics and can appreciate the work of others, whereas Major Raverty disagrees with every numismatist, except his own anonymous pet who is wrong in every thing he states."

The following papers were read :—

1. *Notes on Indian Rhynchota.* No. 4.—By E. T. ATKINSON, Esq., B. A.

(Abstract.)

This paper, which is the fourth instalment of the author's notes on *Rhynchota*, comprises 49 species distributed amongst the following genera: *Fulgora* 20 (2 new), *Alcathous* 1, *Pyrops* 2, *Homalocephala* 1, *Limois* 1, *Aphana* 9, *Lycarma* 4, *Euphria* 5 (1 new) *Pharonis* 2, *Gebeuna* 1, *Polydicta* 1, *Ancyra* 2.

The paper will be published in full in *Journal*, Part II for 1885.

2. *On the "Pámir"** from the Russian of Professor Minayeff.—By MAJOR W. E. GOWAN.

The Pámir,† which lies in 36° 35' 70" north latitude and 71° 15' 75' 36"

* Minayeff (Professor I.) *Information relating to the countries along the upper course of the Amu-Daria.* St. Petersburg, 1879.

† The etymological signification of this name has not yet been thoroughly cleared up: formerly it was held to be derived from *Ura-meru*, i. e., the country beneath the mythical mountain Meru, which stands, according to the teaching of ancient Indian Cosmography, in the centre of the earth and this explanation is, perhaps, the most likely. (See Lassen's "*Indische Alterthumskunde*, 1, page 1019, Note 1.) Rawlin-

longitude east of Greenwich, is a high plateau (from 12,000 to 14,000 ft. high) intersected in various directions by ranges that rise a little above the surrounding valleys. Some of these ranges are partially covered with snow, others are snowless. Their height above the valleys varies from 3000 to 4000 ft. Neither valleys nor hollows have any definite direction and in the majority of cases are not wider than $1\frac{1}{2}$ to 2 miles. Notwithstanding the severity of the climate of the Pámír and the poverty of its flora and fauna, nomads frequent its heights. Such visitors come from Káshgaria, Karátégín, Shighnán, and other neighbouring states. But the severity of the climate and the dearth of fodder for the cattle must render a stay in such a country very inexpedient: the summer days are very hot but the nights are cold, whilst the change from the sultriness of the day to the chill of night is extremely rapid. Snow falls to a great depth and lies for a long time even on the southern slopes. Winter-snow begins to fall early in September and remains till May. The winds of the Pámír are constant.

The limits of the Pámír have not yet been defined with exactitude. Although the Pámír has of late been visited by several expeditions both Russian and English, there yet lies between their explorations an interval of about 67 miles in width, which up till now has been visited by no European and is only known from inquiry.

The Alai and Trans-Alai ranges form the northern boundary of the Pámír. The Trans-Alai range runs parallel to the course of the Kizil-Su river, in a direction east and west slightly inclined to south. The average height of the peaks of this range is 18,000 ft., but some of its detached summits exceed 20,000 ft. (Kaufmann peak, for instance). The lowest portion of the Trans-Alai lies where the snowless Kizil Art pass is crossed (14,000 ft.). West of this pass the Trans-Alai considerably inclines to the south turning towards the sources of the Muk-Su, of which, under the name of the Hoi range, it forms the left or southern bank. The bed of the same river is closely confined by its crags. Between the Muk-Su and Kizil-Su rivers there is a second-rate range (14,000 ft. high), which is detached from the main or Trans-Alai chain, and serves as the watershed of those rivers. This range is pierced through by the Attin-Dara gorge and by the low Ters-Agar pass (10,300 ft. high). To the south of the Trans-Alai range lies the

son has recently put forward a new derivation, *viz.*, that the name of Pámír, or Fámír as it is always written by the Arabs, is derived from the Fáni, *φάνοι*, who, according to Strabo, founded the first kingdom of Bactria to the east (Strabo, Lib. XI. c. 14), and whose name is also preserved in Fán-Tau, the Fán lake. Fámír or Fán-mír would then be a compound like Kash-mír, Aj-mír, Jessel-mír &c., signifying the lake country of the Fáni. See Rawlinson's Monograph on the Oxus, page 489, note.

small basin of the Kara-kul lake, 13,000 ft. above the level of the sea, and shut in on all sides by snowy ranges. On the south the Pámir is bounded by the Hindu-Kush between the Nuksán and Bárogil passes, and by the Himálayas between the latter pass and the Mustág range. The western confines of the Pámir are still undefined, as this region has not been explored by Europeans. Reconnaissances of the Pámir undertaken in 1876 shewed that on the east it is locked in by a huge snowy range, which reaches heights of at least 24,000 ft.

There are no exact data for the determination of the area of the Pámir. Yule believes the length of this plateau from south to north to be 180 miles, and Kortenko gives the same approximate figures.

There are said to be several lakes on the Pámir: but we have no trustworthy information of all, and the existence of some is open to doubt. Regarding lake Kara-Kul or Pámir Khargoshi the most recent information was collected in 1876. From the mouth of the Kizil-Art gorge on the Alai to the Uz-bal pass the distance is 91 miles, and thence to the Tuzuk pass 80 miles. From the latter to the lake of the Great Pámir (Wood's Sari-Kul) only 67 miles.

The latest information regarding the lake of the Great Pámir has been supplied by Forsyth's Expedition. It is about 10 miles long and 3 broad. Its height is 14,200 ft. Its water was found to be perfectly sweet. The valley in which this lake lies has a width of about 4 miles. The mountains to the north rise to a height of 3000 ft. above the level of the sea, but those to the south exceed them by at least 2000 ft. The same lake, Trotter assures us, is known locally by two names: the more common being Kul-i Pámir-Kalyan, *i. e.*, the Lake of the Great Pámir, and the other Airan-Kul. The name of Sar-i-kul which Wood applies to it is in all probability corrupted; Sar-i-kul signifies the head or beginning of a lake. Other particulars are given by Gordon, another member of Forsyth's Embassy.

The lake on the Lesser Pámir is called Gaz-kul. Gordon says, "It is about 3 miles long and a little less than a mile broad. Its height is 13,000 ft., and the hills on both sides rise some 2000 ft. higher, those to the south being completely covered with deep snow."

"The Alichor Pamir runs east and west, parallel to the Great and Little Pámirs. According to Wakhi accounts, it is similar in character to them, broad at the eastern and narrow at the western end. It is connected with the Great Pámir by the Dasht-i-Khargoshi, a desert which extends across from about 20 miles below the Great Pámir lake.

The Amu-Daria is formed of two principal rivers, the northern the Surkhab, and the southern the Pianja. The northern tributary, under the name Kizil-Su, takes its rise in 39° 42' north latitude

and 43° 18' east longitude approximately. Its bed is about a mile wide, covered with pebbles, and scoured by numerous channels, which change from year to year. The banks are steep everywhere but high only in the lower part of the Alai. The current is rapid but smooth on account of the gradual fall in the level of the valley. The water of the Kizil-Su is turbid and red but is not unwholesome, and it becomes clear when allowed to settle. The tributaries of the Kizil-Su on its right bank are few and small. Those on its south bank are larger and more numerous. The Kizil-Su leaves the Alai as a river of great volume. Below Karategin after being joined by the Muk-Su it receives the name of Surkhab, but of its course here we have no trustworthy information, since this mountain country has not yet been visited by a single European traveller. In its lower course the name Surkhab is changed to Wakhsh. The river then flows between the steep and rocky ranges of the Mir-Tag and Hojankur with furious rapidity. In one of the narrowest parts of this gorge, where the rocks approach each other to within a distance of 20 paces, the famous Pul-i-Sangi (or Stone bridge) has been erected on the projecting crags. In the same place and along the bank of the river, a road of extraordinary difficulty leads from Faizabad to Baljuan and Kuliab. In many parts it has been hewn in steps out of the rocky and steep sides of the crags above. After passing through a gorge dividing the Khodja-mast and Tabakti ranges, the river comes out into the Kurgan-Tube valley (the ancient State of Kholet). Here the Wakhsh divides into several arms which form marshy and low-lying swamps.

The southern source of the Amu-Daria bears, as we have said, the name Pianja (the Oxus). The Pianja is made up of two rivers, *viz.*, the southern called the Pianja, and the northern called the Murghab, which in its upper course bears the name of Ak-Tash or Ak-Su. The Ak-Su issues from the lake of the Lesser Pámir. The latest circumstantial information has been communicated by Trotter in the working of the Forsyth Expedition. The river Pianja is formed by the junction of the two Pámir tributaries of the Murghab. The course of the Pianja is south-westerly, and the extent of it, as far as Wakhan, is 63 miles. Its valley varies in width from 1 mile to a few hundred yards only. Beyond Barshar, an abandoned settlement of considerable size, there enters the Pianja from the east the Boguz. Sixteen miles below Barshar are the famous ruby mines. The valley near Barshar contracts to about one mile in width. The stream is narrow but swift, being not more than 200 feet across and its course an almost continuous succession of rapids. From Kuguz-Parin the course of the Pianja lies through the Shighnan country, which extends for a distance of 60 miles, *i. e.*, as far as the Darband Tower on the frontier of Roshan. In its passage through Shighnan, the Pianja

receives two considerable affluents on its left bank, the Shewa and the Vachew. Along the latter lies a much-frequented road from Shighnan, over the Shewa Pámir to Faizabad. On its right bank the Pianja receives one very large river, the Suchán, which is formed by the junction of two large equal streams, the Shah-Dara and the Ghund. The Suchan enters a few miles south of Bar-Pianja. The valley here opens out to a width of about 4 miles and contains a good deal of well cultivated land and pasturage. Two and a half miles beyond Darband the Murghab enters the Pianja. The valley of the Pianja, which at Darband is very narrow, rapidly widens after the Murghab has entered it until the breadth is about 5 miles. The frequent inundations of the Murghab interfere with cultivation. This river, though generally called the Murghab, is also known by the name of the Darya-i-Bartang, which is the name also of the district through which it flows. Between Waznud and Bar-Roshan the Pa-i-Khoja valley enters that of the Pianja from the south. The road to Kila-Khumb, the chief town of Darwáz, along the river is very difficult and impassable for pack-horses, the valley being very narrow and the banks of the river very precipitous. The most important of the affluents of the Pianja is the Kitchi Surkh-ab or Baljuan Daria, which is called Kitchi or Little to distinguish it from the greater Surkh-ab or Wakhsb. It waters the Baljuan valley and takes its rise in the mountains to the north of the Baljuan Begship where it is made up of many streams.

The Amu-Daria by receiving the waters of the Surkh-ab or Wakhsb receives also the following affluents: 1. Kafir-nihan, which is made up of several mountain streams. The rise, however, of this river is usually taken to be the Roment Daria, which issues from the snowy masses of the Hissar chain. In the basin of the Kafir-nihan there are five considerable towns: Faizabad, Kafir-nihan, Doshamba, Hissar and Kobadian. 2. The Surkhan, which is made up of several rivulets that flow from the mountains surrounding the wide valley of the Surkhan river. Within this valley are situated the towns of Kara-Tag, Regar, Ssar-i-Iui, Ssar-i-Osio, Yurtchi, and Denan. The population of the valley is chiefly confined to its northern portion where the abundance of mountain streams make it possible to irrigate the soil without any very great expenditure of labour. 3. The Shir-abad-Daria, which at the town of Darband is called the Darband-Daria. It is fordable everywhere and indeed does not reach the Amu-Daria every year, because its waters are diverted by means of canals over the hamlets of the Shir-abad Begship. Hence its supply is not always sufficient for the steady and yearly irrigation of the whole locality.

The most important tributaries of the Amu-Daria on the south

are the Koktcha and the Ak-Sarai. The Koktcha is made up of two streams, the Vardoj and the Jirm, which unite at the Shash-pul bridge above the Faizabad passage. The Jirm is a river of greater volume than the Vardoj. Within the valleys of its upper course are the provinces of Kuran, Anjuman, and Parian, which are dependencies of the Jirm province. The Bamian stream is held to be the main source of the Ak-Sarai, and this enlarged by many feeders flows into it from the Ak-Rabat pass and other neighbouring gorges. At Zokhak, in the north-east end of the Bamian valley, the Bamian stream is joined by another of almost equal size, which descends by the wild Pimuri defile from the Hajigak pass. From here the stream turns northward and receives from the west the waters of the Saigan and Kamard. Near Dorhi, 85 miles north-east of Zokhak in a direct line, the Inderab enters it. The latter river, which collects the waters of the main range of the Hindu Kush, parallel to which it flows for more than a degree's length, must bear a great volume of water to either the Ak-Sarai or the Surkhab.

Westward of the Ak-Sarai flow the Dehas and Khuhu rivers, but they do not reach the Oxus, because their waters are diverted into various canals. Both take their rise in the Hindu Kush and flow northward.

Political divisions.

In recent times not a single European traveller has visited Balkh, Khuhu, and Kunduz, or Kataghan. The following information regarding these towns has been furnished by old travellers.

Badakshan has a length of about 200 miles from Wakhan on the east to Talikhan on the west, and its width from Yan-Kila on the north to the Hindu Kush on the south is about 150 miles. Its most important political dependencies are: in the centre, 1, Faizabad or Jirin; 2, Daraim; 3, Shahr-i-Buzur; 4, Gumbaz: on the west, 5, Farakhar; 6, Kishm; 7, Rustak: on the east, 8, Roshan; 9, Shighnan; 10, Ishkashmi; 11, Wakhan: on the south-east, 12, Zaibak; 13, Muijan: on the north, 14, Ragh; 15, Dann; 16, Asiab. All these are dependencies of Badakshan and are ruled by kinsmen of the Mir or by his hereditary vassals. They are obliged to furnish their suzerain with war resources in case of need, and they pay some a very small tribute and some none at all. Within their respective territory their power is very limited, and they are also called *Mirs*.

The first circle mentioned that of Faizabad comprises the following subdivisions: 1, Faizabad; 2, Yaftal; 3, Argu; 4, Shewa. The chief town of this circle is Faizabad. Yaf'al and Shewa are fertile and thickly populated localities. The inhabitants of the former are Tajiks, and from

amongst this race one of the ancestors of the present heir ascended the throne of Badakshan. The people of Shewa are Turks of the Yakka-Mogal tribe, and are very devoted to the ruling dynasty. Yaftal is cut off from Faizabad by a low chain of mountains. Argu and Shewa are both wide plateaus. The former is separated from the somewhat more depressed plain of Faizabad by a very low pass called Kotal Rashkan, 15 miles long and 8 wide. The Argu plateau is covered with cultivated land which belongs to the Court and Government. The Shewa plateau stretches east of Faizabad for a distance of some 20 *kos*. Its climate is a little colder than that of other parts of Badakshan, and here are found more abundant pasture lands. Sar-i-kul lake, which has a circumference of nearly 20 miles, lies on the Shewa plateau.

The valleys of the rivers Koktcha and Kuran as far as Dasht-i-Bakharak comprise the famous province of Yamgan or Khamakhan. Herein are found most of the Badakshan mines of lapis-lazuli, copper, ammoniac, sulphur, and ochre (*zagh*). Dasht-i-Bakharak is also called Dasht-i-Farakh and is the most fertile plain of Badakshan.

Ruby mines exist at Ishkashmi on the Shighnan boundary; iron mines at Arghanjva in the Faizabad district about one day's journey north-west of Dasht-i-Bakharak; and salt mines at Ak-Bulak near the Lattaband pass in the Farakhar circle, and at Darun in the Karlig or Kullak province.

Much grain is raised on the Rustak plain, and its climate is very healthy. The intelligence of its inhabitants is held to be of a very high order and their physique very fine. The best Arab linguists and courtly people come from this country.

Meshed, the largest town in the Kishm circle, lies on the right bank of the river of the same name. It contains about 150 houses and an old mud fort. Meshed lies on the caravan road between Kunduz and Faizabad in the most fertile part of the valley which bears that name.

The circles of Gumbaz and Asiab are situated in the lower portion of the Meshed valley. Both are subject to a Mir who is connected with the ruling dynasty of Badakshan. In the Gumbaz circle are the tombs of those first Muhammadan martyrs who gave the name to the town of Meshed where they fell.

The circles of Muijan, Zaibak, Ishkashmi, Wakhan, Shighnan, and Roshan are more mountainous than are those above described, and their climate is more severe. Their inhabitants too differ from those of the preceding circles in faith, language, character, customs, and dress.

The inhabitants of Badakshan proper are Tajiks, Turks and Arabs, of whom the former are most numerous. They are Sunnis and speak in Persian and Turki. Those of the more mountainous countries are

Tajik Shiahs and have distinct local dialects, though in the principal places they also speak Persian. The Turks are richer than the Tajiks, and excel them in bravery, in aptitude for war, and in capacity for trade. Of the eastern provinces of Badakshan recent information has been given by members of the Forsyth Embassy.

Wakhan extends from the highlands of the Pianja and along the valley of the same river, from Zan to Ishkashmi. The Great and the Little Pamir belong to Wakhan, whilst the Ak-Tash river constitutes the well-recognised boundary between it and Kashgaria. Both Pamirs were thickly populated by Kirghiz and were in former years subject to Wakhan, but they are now unoccupied, the constant feuds between the Shighnans, the Wakhans, the Kirghiz of the Alai, and the Kanjadis having rendered the country quite unsafe. Wakhan was formerly divided into three districts of 100 houses each, which were therefore called *sads* or "hundreds:" 1, Sad-i-kila Vost or Sarbadd, extending from Langar to Hissar; 2, Sad-i-Pianja, from Hissar to Khandut; 3, Sad-i-Khandut, from Khandut to Sad Ishtiragh. To these three *sads* was afterwards added a fourth, that of Sad Ishtiragh which, it would seem, only became a portion of Wakhan in recent times. It lies between Khandut and Ishkashmi.

Ishkashmi and the neighbouring circle of Zaibak are under the same rule. The present territory of Ishkashmi extends for about 16 miles to the north of the village of the same name, which now contains about forty houses.

The Gharan country extends along both banks of the Oxus for about 24 miles. It was once rich and populous. The ruins of large villages to be seen on both banks of the river testify to the bad rule of former Badakshan potentates. The fields adjoining such abandoned villages are still cultivated by the inhabitants of the neighbouring Badakshan circles of Ragh and Sar-Gholam. Both the circles are distant about a day's journey from the river and lie on the far side of the mountain chain which runs parallel with the left bank of the Oxus. In Gharan are famous ruby mines, and the country is distinguished for its cattle and fruit.

Shighnan extends from Kuguz-Parin to the Tower of Darband on the Roshan frontier. It is richer than Wakhan or any of the other parts of Badakshan. Villages abound on both banks of the river between Kuguz-Parin and the Darband Tower, and all are surrounded with gardens and well-tilled fields. Bar-Pianja, the capital of Shighnan, stands on the left bank of the river. In it and its suburbs there are about 1500 houses. Two days' journey from Bar-Pianja on the river Shah-Dara is the large fort of Ratch. This is the residence of the Governor or Hakim of the Shah-Dara circle.

Roshan begins beyond the Tower of Darband. It is a dependency of Shighnan and is ruled by Yusuf Ali Khán. Three miles below the junction of the Murghab and Pianja and on the right bank of the latter river is Wamar the chief town of Roshan. It is in a very flourishing condition, and the soil around is very fruitful. Roshan is divided into three circles: 1, Wamar, which lies on the right bank and embraces the upper portion of the Oxus valley, and contains about 800 houses; 2, Pa-i-Khoja, which lies on the left bank of the Oxus, below the place where that river takes a bend to the west. It is distant from the Wamar circle a day's journey. It contains about 1000 houses, and its inhabitants are Khojas or descendants of Saiyads; they pay no taxes but are liable to military service in time of war; 3, Bartang, a province on a river of the same name. Five miles beyond Pigish on the right bank of the Pianja is the frontier village of Bar-Roshan. One day's journey beyond this again, and also on the right bank of the same river, is Vaznud the frontier village of Darwaz. Five marches from Vaznud is Kila-Khumb the chief town of Darwaz. The boundary between Shighnan and Darwaz is the water-shed lying at the head of the Wamar valley.

Beyond Darwaz it is said that the Khotlan country begins, the chief town of which is Kuliab.

Of Karatigen, which lies north of Darwaz, we have only hearsay information. It is comprised in the valley of the Surkhab and its sources, and is held to be perfectly independent. Once only was it subdued by the Olai-Kirghiz (Black Kirghiz) who nomadize on the slopes of the Kokan mountains. But the raiders were soon driven out, and since then the Karatigens have owned allegiance to none. Garm is the chief town of Karatigen. The villages, most of which are small, are scattered in separate groups over the Surkhab valley. Each has its own Beg, and bears the name of that village in which the Beg resides. The natural products are iron and rock salt, and also gold.

To the south of Karatigen and to the south-west of Darwaz lie Hissar and Kuliab. According to the information gained by the Hissar Expedition, Hissar is now divided into 7 Begships and Kuliab into two. The Hissar Begships are Shirabad, Baisun, Denan, Yurtchmisk, Hissar, Kurgan-Tube, and Kobadian. Kuliab comprises those of Baljuan and Kuliab, and also the amliakdars of Darband, Ssar-i-Iui, and Faizabad, who are appointed by the Amir himself. The amliakdars of the towns and villages are nominated by the Beks. Hissar and Kuliab produce in abundance all the sorts of grain and garden growth that are peculiar to Central Asia. Cotton is cultivated in large quantities only in the Begship of Shirabad because it is pos-

sible to export it thence *viâ* Guzar to Karshi. The carriage of such a bulky product from other parts of the country along the difficult mountain tracks would be attended with too much expense. From Denan Hissar and Du-Shamba grain and flax are exported to Bokhara, and from the village of Bash-khurd (43 miles from Guzar) the famous Guzar rock salt is exported. This salt gets as far as Tashkent where it is called Samarkand. From the entire country, even from Baljuan, Kuliab, and Afghánistán, sheep are driven to Bokhara and Karshi. Wood (the *archa* or dendroid juniper used for building purposes) is taken on mules to Guzar and Karshi from the mountains near Ak-Rabat. One mule load of *archa* wood is sold in Guzar for about 3s. For the transport of goods from the Hissar country to Karshi and Bokhára camels mules and horses are employed. There is not a cart throughout the whole Hissar country, indeed the word *arba* or cart is quite unknown there. Many parts of the country are rich in rock-salt. Mines of it are situated in the Mir-Tag mountains (at the mouth of the Waksh gorge). Hazrat Imam mountain too, near Kuliab, furnishes that town as well as Baljuan and even Badakshan with the same product. There are besides numerous salt springs.

Gold-washing is carried on in two places on the river Wakhsh, *viz.*, at the village of Dart-Kaul and close to Kurgan-Tube. The yield at the latter place is the more abundant. It is carried on by the natives after the fall of the spring floods when the auriferous sand is, so to speak, recharged with fresh deposits from the mountains.

3. *The Geography of India in the reign of Akbar.* Part II.—By JOHN BEAMES, ESQ., C. S.

(Abstract.)

This is the second of the series of papers in which Mr. Beames proposes to reconstruct as far as practicable the map of the Moghul empire in the time of Akbar. The first series dealt with Subah Avadh (Oudh) and was published in abstract in the Proceedings of May 1884, and in full in Journal, Part I, No. 2 for the same year.

The present series treats of Subah Bihar, in reconstructing the details of which, great difficulties had to be encountered owing to the absence of earlier records, the falsification of the later ones by Muhamadan Subahdárs, and the Permanent Settlement of Lord Cornwallis, each in its way having contributed to efface the former political geography. According to Abul Fazl, Bihar was bounded on the east by Subah Bangálah (Bengal), on the west by Subah Ilahabad and Avadh, on the north and south by high mountains, evidently the Himalayas and Vindhya respectively. The principal rivers are the Ganges, Son, and Gandak.

Todar Mal's settlement of 1582 lasted till 1685 when a fresh settlement was made, by which the revenue of the province was raised from fifty-five to eighty-five lacs. This settlement was superseded in 1750 by a fresh settlement, the details of which were carried out under the orders of Ali Vardi Khán, Subahdár of Bengal, by which the revenue was further raised to ninety-five and a half lacs.

The Subah of Bihar was divided into 7 Sarkárs, viz., 1, Bihár; 2, Múngír; 3, Champáran; 4, Hájípúr; 5, Sáran; 6, Tirhut; 7, Ruhtás. The reconstruction of the Subah, according to Mr. Beames, may be summarized as follows:—

I. *Sarkár Bihar*.—46 mehals or pergunnas; area 9,52,598 bighas. Revenue 8,019,639 dams nagdi, 22,70,147 sayurghals. Castes various: 2,150 horse; 67,310 foot.

This Sarkár occupies the whole of the modern districts of Patna and Gaya, the western half of the great plain of Magadha and certain tracts now included in the districts of Hazaribágh and Lohardaga in Chutia-Nagpur. It may be interesting to students of the science of language to note that the area of this Sarkár corresponds pretty accurately with the area of the modern Magadhi dialect, as shewn in the map prefixed to Part II of Mr. Grierson's Grammars of the Bihari language.

II. *Sarkár Múngír*.—31 mehals. Revenue 1,09,625,981½ dams. Castes various; 2,150 horse; 50,000 foot.

In this Sarkár, the first point noticeable is, that not a single mehal contains more than a statement of the revenue payable by it, there is no information as to area, ruling caste or anything else. This Sarkár runs far down south-eastwards into the jungly tracts now in the Santhal Pergunnahs, and it is impossible to fix the boundaries in that direction. In the north too, the vast areas of sparsely peopled swamps and marshes make it uncertain how far its boundary could be held to extend northwards.

III. *Sarkár Champáran*.—3 mehals. Area, 85,711 bighas. Revenue 8,513,420 dams; 700 horse, 30,000 foot.

All the three mehals, Simranu, Mihsi, and Majhowa are still extant. Majhowa is a very large pargannah in the present day, stretching as far as Trebeni Ghát, the point where the Gandak issues from the hills, only a small portion of it is included in Todar Mal's rent-roll.

IV. *Sarkár Hájípúr*.—11 Mehals. Area 4,36,952 bighas. Revenue, 27,331,030 dams. All these mehals are still extant and clearly identifiable. This Sarkár is a long and rather narrow strip comprising the tract between the Burh Gandak river on the north-east, and the Gandak and the Ganges on the south-west and south.

V. *Sarkár Sáran*.—17 mehals. Measured area 2,29,052 bighas. Revenue 60,172,004½ dams. Castes various; 1000 horse, 50,000 foot.

This Sarkár like that of Champáran has no Havelí. In the present day sixteen out of Todar Mal's seventeen mehals are in existence, though some of the modern names differ slightly from those in the *Ain*.

VI. *Sarkár Tirhut*.—74 mehals. Measured area 266,464 bigahs. Revenue 19,189,777½ dams. Castes various; 700 horse, 80,000 foot.

Though this Sarkár contains a greater number of pargannas than others in Bihár, it covers less area than Sarkárs Bihár or Mungír, the pargannas being in many instances very small. This Sarkár is one of the most difficult to reconstruct, many changes having taken place, both in the names and arrangement of the pargannas, and large areas being absolutely unaccounted for.

VII. *Sarkár Ruhtás*.—18 mehals. Area 473,340 bigahs. Revenue 4,081,949 dams. Castes various; 4,550 horse, 162,000 foot.

This Sarkár is in the main conterminous with the modern district of Shahábád, being bounded on the north by the Ganges, on the east by the Son, on the west by the ill-omened Karamnásá, and on the south by the Kaimur range.

In conclusion, Mr. Beames remarks that the reconstruction of this Subah is far from being complete, and expresses a hope that here, as in the case of Subah Avadh, persons living on the spot may be able to clear up some of the doubtful points by local enquiry.

The paper will be published in full in *Journal*, Part I, for 1885.

LIBRARY.

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

TRANSACTIONS, PROCEEDINGS, AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. Johns Hopkins University,—*American Journal of Philology*, Vol. VI, No. 1.

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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR NOVEMBER, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th November, 1885, at 9 p. m.

The Hon. H. J. REYNOLDS, in the Chair.

The minutes of the last meeting were read and confirmed.

Several presentations were announced as detailed in the Library List appended.

The PRESIDENT reported that the following gentlemen were balloted for and elected ordinary members of the Society at the Meeting of Council of the 24th September last, in terms of Rule 7

1. Babu Damoodar Das Burman.
2. N. F. F. Smith, Esq., Manager, Estate Punnalal Seal.

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

As Ordinary Member :

C. L. Griesbach, Esq., F. G. S., proposed by H. B. Medlicott, Esq., F. R. S., seconded by J. Wood-Mason, Esq.

As Associate Member :

Dr. A. Fährer, Curator of the Lucknow Museum and Assistant Archaeological Surveyor, N. W. P. and Oudh, proposed by the Council.

Messrs. W. R. Lawrence, A. Thomson and A. Weekes have intimated their wish to withdraw from the Society.

The PRESIDENT reported that the Council of the Society had sanctioned the publication in the Bibliotheca Indica Series of Al Tabrizi's commentary to be edited by Mr. J. C. Lyall, in lieu of the Lamiiyat, which had been previously sanctioned.

Two letters were read from the Curator, Central Museum, Madras, forwarding 1, a specimen of a Nagri Gold Fanam found in the Nellore District, 2, an old Madras Gold Pagoda found in the same district and both acquired under the Treasure Trove Act.

The PHILOLOGICAL SECRETARY read the following Reports on nine finds of Coins, *viz.* :—

I. *Report on 1191 old coins sent by the Deputy Commissioner of Singbhoom, with his letter No. 779 of 6th January 1885, (found at Chaibassa?)*

1. The place where the coins were found is not mentioned, but they were forwarded from Chaibassa, in Singbhoom, Bengal Presidency.

2. They belong to the class commonly called "old Hindú punched coins." They are well-known and have been often described by Prinsep, Thomas and others (see *Indian Antiquary*, Vol. I, pp. 209 ff.). They are supposed to be the earliest kind of Indian coins, but probably were in use down to comparatively late times, side by side with more regular currencies. They consist of small flat pieces of metal of all kinds of shapes, marked with a great variety of "punches," some on one side only, others on both sides.

3. They are mostly of silver more or less pure (weight generally of about 4 annas), but a large portion in the present collection, on being tested, proved to be of some very base material, and many of them entirely crumbled away. The latter may have been forgeries.

4. They have been found very numerously all over India and are of little value.

II. *Report on a find of 94 pieces of copper coins forwarded by the Deputy Commissioner of Nimar, with his No. 2973, dated 23rd December, 1884.*

1. The find-place is the village of Kirala, Tahsil Khandwa of the Nimár District. Date of find 2nd May, 1883.

2. The collection consists of 94 copper coins weighing about 2 pice each. They are of the following Muhammadan rulers of Gujarát.

	No. of Specimens.
(1) VIII. Qutbu-d-dín Muzaffir Sháh bin Maḥmúd, 917—932 A. H.=1511—1525 A. D. Dates represented, 921 (2 speci- mens), 922 (2 sp.), 924 (1 sp.), 925 (6 sp.), 926 (3 sp.), 927 (3 sp.), 928 (5 sp.), 932 (2 sp.), illegible dates (4 sp.), bad (5 sp.); total, 	33
(2) XI. Bahádur Sháh, 932—943 A. H.=1525—1536 A. D. Date represented, 935 (2 sp.), 9 (1 sp.), 940 (4 sp.), 943 (1 sp.), illegible date (1 sp.), total	9

	No. of Specimens.
(3) XIII. Násiru-d-dín Maḥmúd III, bin Latíf Sháh, 944—961 A. H. = 1537—1553 A. D. Dates and mints appear to have been on the margin which is almost entirely worn away in every specimen, total, 51	51
(4) XV. Muzaffir Sháh III, 969—980 (P)=1561—1572 (P) Date [9]83, of doubtful identification, total, 1	1
<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>	
Grand total, ...	94

III. Report on 20 old silver coins, sent by the Deputy Commissioner of
Nimár with his No. 586, of April 1885.

1. Find-place defined as "this district," i. e., Nimár.
2. The collection comprises the following silver coins; all of the
Moghul Dynasty of Delhi:—

	No. of Specimens.
1, V. Sháh Jehán, 1037—1068 = 1627—1658; date: [1059], 22; Mint ? 1	1
2, VI. Aurangzib, 1068—1118 = 1658—1707; dates: 1096, 29—1104, 36—1073, 5; Mint, Súrat 3	3
3, do. do.; dates: 1109, 41—1116, 48—1118, 50; Mint Sháh Jáhánábád 3	3
4, VIII. Bahádur Sháh, 1118—1124 = 1707—1712; date: [1118], 1, Mint Lakhnau 1	1
5, IX. Jehándár Sháh, 1124—1712; date: [1124], 1; Mint, Súrat 1	1
6, X. Farokhsír, 1124—1131 = 1712—1719; dates: 1128, 5—11—[1127], 4 3	3
7, XI. Rafiu-d-darjât, 1131—1719; date: [1131], 1; Mint: Dár ul Khiláfat Sháh Jehánábád 1	1
8, XIII. Muḥammad Sháh, 1131—1161 = 1719—1748; date: 1142, 12; Mint: Korá 1	1
9, do. Muḥammad Sháh, 1131—1161 = 1719—1748; date: 1140, 10, Mint Súrat 1	1
10, do. do.; date: 1141, 11; Mint, Sháh Jehánábád 1	1
11, do. do.: date; 11[41], 11; Mint, Etáwáh 1	1
12, do. do.: date; 113[5], 5, Mint: Dár ul Khiláfat, Sháh Jehánábád 1	1
13, do. do.: date; 11[31], 1; Mint: Murshidábád 1	1
14, do. do.: date; 1[143], 14; Mint: illegible 1	1
<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>	
Total, ...	20

They cover a period of 84 years, from 1059—1143 A. H.

IV. Report on 40 silver coins, forwarded by the Deputy Commissioner of Raipur, with his No. 2126 of the 30th April, 1885.

1. The coins were found in Monzah Biranpur, in the Gaudai Zemindari of the Raipur District, and number forty.
2. They belong to the following Moghul Emperors of Delhi :

	No. of specimens.
1, VI. <i>Aurangzib Alamgir</i> , A. H. 1068—1118=A. D. 1658—1707; two bad specimens, with mint and date illegible ...	2
2, IX. <i>Jehandár Sháh</i> , A. H. 1124 = A. D. 1712, Mint: Súrat; Date [1124], regnal 1 ...	1
3, X. <i>Farrukhsír</i> , A. H. 1124—1131=A. D. 1712—1719; Mint: Mustaqir ul Khiláfat, Akbarábád, date 1131, 7 ...	1
4, XIII. <i>Muhammad Sháh</i> , A. H. 1131—1161=A. D. 1719—1748;	
a, Mint: Kotah, 4 specimens, dates (regnal) 6, 14, 27, 28;	
b, Mint: Murshidábád, 6 spec., dates (regnal) 2, 15, 16, 19 bis, 26	
c, Mint: Azímábád, 10 spec., dates 1153, 22—115[9], 28—115[8], 27—P, 7—P, 19—P, 26 tris,—P, 30 bis.	
d, Mint: Dár ul Khiláfat Akbarábád, 1 spec., date 1154, 23	
e, Mint: Dár ul Khiláfat, Sháh Jehánábád, 1 spec., date [1131], 1	
f, Mint: Dár ul Khiláfat, Sháh Jehánábád, another type with Sáhib Qírán Zání, 1 spec., date 113[9], 8; Total, ...	23
5, XIV. <i>Ahmed Sháh Bahádur</i> , A. H. 1161—1167=A. D. 1748—1754;	
a, Mint: Banáras, 2 spec., dates 1166, 5 bis.	
b, Mint: Murshidábád, 1 spec., date P, 3	
c, Mint: Súrat, 2 spec., dates [11]61, 1—[116]7, 6 Total, ...	5
6, XV. <i>Alamgir Zání</i> , A. H. 1167—1175=A. D. 1754—1761;	
a, Mint: Banáras, 2 spec., dates 11[70], 3—[1172], 5	
b, Mint: Etáwah, 2 spec., dates 116[9], 2—[1110], 3	
c, Mint: Patna, 1 spec., date [1173], 6 Total, ...	5
7, XVI. <i>Sháh Alam</i> , A. H. 1175—A. D. 1761	
a, Mint: Banáras, 1 spec., date 1174, 1	
b, Mint: Etáwah, 1 spec., date [1174], 1	
c, Mint: Patna, 1 spec., date 1174, 2; Total, ...	3
	Total, ... 40

V. *Report on two old Silver coins forwarded by the First Asst. Agent to Govr.-Genl., Rajputána, with his No. 1241 G of 20th May 1885.*

1. The find-place is not stated. Apparently in the neighbourhood of Abú.
2. One of the coins is a so-called "Paṭhan" coin, *viz.*, of Alá-u-d-dín, Muḥammad Sháh, Sultan of Delhi, the XIVth of the so-called "Paṭhan" kings of Delhi, from A. H. 695—715 = A. D. 1295—1315. The margin which contained mint and date is worn away. The coin is well known, and described in E. Thomas' *Chronicles of the Pathan kings of Delhi*, p. 171, No. 132 (Plate III, No. 57) 1
3. The other coin is a "Mughal" coin, *viz.*, one of Sultan Jehangir Sháh, son of Akbar Sháh, A. H. 1014—1037 = A. D. 1605—1627. It bears date 1027, the 12th year of his reign ... 1

VI. *Report on five ancient coins forwarded by the Deputy Commissioner of Gurdaspur with his No. 619, of the 28th May 1885.*

1. The coins were found in the district of Gurdaspur. The locality is not further specified. They number five.

2. Their age and attribution is still uncertain. They bear, however, a rude resemblance to the coins of Samudra Gupta, of the old imperial Gupta family, who reigned in the 3rd century A. D. They have been described by Prinsep in his *Indian Antiquities* (ed. E. Thomas) Vol. I, pp. 227 (Plate XXII, fig. 13).

OBVERSE. Standing figure of king with some letters arranged perpendicularly (Chinese fashion), under his arm *Keda*, near the left margin *Kapa*, near the right margin *Sha*.

REVERSE. Figure of a goddess (Lakshmi?) seated on a throne.

3. They are of mixed metal, some kind of debased gold (electrum); their numismatic value is about Rs. 5 each.

VII. *Report on an ancient gold coin forwarded by the Collector of Bhagalpur with his No. 757, G, dated 24th June 1885.*

1. The find-place is not stated. It is very desirable to have precise information on this point, especially in the case of gold and silver coins.

2. The coin is an Indo-Scythian one; it is usually ascribed to Vasu Deva, about the end of the 2nd century A. D. It has been described by Prinsep in his *Indian Antiquities* (ed. Thomas) Vol. I, p. 227 (Plate XXII, fig. 4), also by H. H. Wilson in the *Ariana Antiqua*, p. 378 (Plate XIV, figs. 12, 13, 14) Coins of this kind are rare and valuable. Their numismatic value is about Rs. 20; intrinsic about Rs. 13.

VIII. *Report on 346 old copper coins forwarded by the Deputy Commissioner of Gujrat with his No. 1061, dated 4th August 1885.*

1. They were found buried at Mauza Basli, Tahsil Kharan, Gujrat District. They number 346 and are all of copper.

2. They are all coins of Sultan SIKANDAR SHÁH, son of Sultan Bahlol Sháh, of the House Lodí, who sat on the throne of Delhi from A. H. 894—923, or A. D. 1488—1517. They are of two very slightly differing varieties; the difference consisting merely in the type of the letters. They are well-known, and described and figured by E. Thomas in his *Chronicles of the Pathan Kings of Delhi*, No. 316, p. 366, plate V, fig. 167. The following regnal years are represented in the collection:

A. H. 895, specimens	1	A. H. 913, specimens	6
„ 896, „	1	„ 914, „	6
„ 897, „	2	„ 915, „	10
„ 898, „	5	„ 916, „	6
„ 899, „	3	„ 917, „	10
„ 900, „	3	„ 918, „	11
„ 901, „	1	„ 919, „	11
„ 902, „	2	„ 920, „	1
„ 903, „	2		Brought over 29
„ 906, „	2		
„ 907, „	2		Total, ... 90
„ 908, „	2		
„ 910, „	3		

Total, ... 29

Specimens with clear dates	90
„ „ imperfect „	99
„ „ illegible „	115
„ sticking together „	51

Total, ... 346

IX. *Report on 232 old copper coins forwarded by the Offg. Deputy Commissioner of Seoni, Central Provinces, with his No. 1759, dated Seoni 2nd July 1885.*

1. The find-place of the coins is not specified. They number 232, are of copper, and in very bad condition.

2. Owing to the bad condition of the coins I have found great difficulty in identifying them. Not less than 182 among them are so much worn as now to present entirely smooth surfaces, with no trace

whatsoever of any inscription. Some 24 still show traces of letters on one or both sides, but not sufficient to be readable. The remaining 26 show more or less distinct traces of their dates and mints. From these I have been able to ascertain, that their mint town is *Dár us Saltanat Sháh Jehánábád*, i. e., Delhi, and that their dates are the following :

17 specimens are dated 1068 A. H. = 1857-58 A. D.

1 „ „ 1075 „ = 1664-65 A. D.

3 „ „ 1075 „ = 1664-65 A. D.

The Mughal Emperor Sháh Jehán of Delhi reigned up to the year 1068 A. H., while his son and successor Aurangzeb reigned from 1068-1118 A. H. The earlier specimens of 1068 might therefore belong to Sháh Jehán ; but they might also belong to Aurangzeb. On the other hand, the traces which remain of the emperor's name, though too imperfect to be decipherable, seem to be alike on all the coins ; and as all the ascertained dates agree with Aurangzeb's reign, I conclude that they must all be ascribed to that emperor of Delhi.

The following papers were read :

1. *Notes on Indian Rhynchota, No. 5.*—By E. F. T. ATKINSON, Esq.

(Abstract.)

This paper which is the fifth and final instalment of the author's notes on the Homopterous section of the Indian Rhynchota, comprises 140 species of Fulgoridæ distributed among the following genera : *Eurybrachys* 10 ; *Messena* 2 ; *Thessitus* 3 ; *Loxocephala* 2 ; *Nesis* 2 ; *Frutis* 1 ; *Dichoptera* 1 ; *Metaurus* 1 ; *Anagnia* 1 ; *Centromeria*, 1, *Diclyophara* 10 ; *Oixius* 3 ; *Oliarus*, 2 ; *Brixia* 1 ; *Benna*, 1 ; *Hygops*, 2 ; *Faventia*, 1 ; *Helicoptera*, 1 ; *Darada*, 1 ; *Tropiduchus*, 1 ; *Elica*, 1 ; *Monopsis*, 2 ; *Hiracia* 1 ; *Phenice* 2 ; *Lacusa* 1 ; *Corethrura* 1 ; *Hemisphærius* 1 ; *Flavina* 1 ; *Eupilis*, 1 ; *Tempsa*, 1 ; *Tetrica* 1 ; *Issus*, 2 ; *Oyrene* 2 ; *Ricania* 26 ; *Miriza*, 1 ; *Mindura*, 1 ; *Pucina* 1 ; *Oerynia* 1 ; *Scarpanta* 1 ; *Phromnia* 5 ; *Lechæa* 1 ; *Flata*, 22 ; *Selisa* 4 ; *Flatoides* 5 ; *Atracis*, 1 ; *Copsyrna*, 1 ; *Nephesa*, 1 ; *Pæciloptern*, 2. In the addenda to the paper Mr. Atkinson has given the description of or notes on 73 species of which the names and synonymy alone were given in previous papers and has added 55 species not noticed before, making a total of Cicavidæ, 115 ; Cercopidæ, 70 ; Membracidæ, 29 ; Jassidæ, 38 and Fulgoridæ, 202 or a grand total of 454 species of recorded Homoptera. Indications are given of species recorded from neighbouring countries which raise the record to about 500 known species.

At the conclusion of the paper, Mr. Atkinson said :

The paper just read completes the account of the recorded species of insects belonging to the Homopterous section of the Indian Rhynchota.

It is not my intention at present to deal with the sub-orders *Phytophthires* and *Anoplura*, the former including the *Psyllidæ*, *Coccidæ*, &c., as the recorded species are few and of little value, and it will be better, should time and opportunity permit, to undertake original investigations of these sections in which India is so rich in species. My object in these papers has been to lay the foundations of a '*Homoptera Indica*' by collecting all the information at present available and above all to clear the synonymy which is full of so many pit-falls and troubles for the beginner. I felt that it was useless to attempt to enlist the sympathies of observers on behalf of this interesting order of insects, unless some substantial aid was given them to enable them to take an intelligent interest in the work. For this purpose I have given the original descriptions of each Indian insect wherever possible or where Stål, Signoret, Distant or Butler have re-described an insect, their descriptions. In a few cases I have re-described the type, but this is so far a work of doubt that I have preferred to give the original description only, however meagre, until I have had an opportunity of visiting Europe and seeing the actual types themselves. The work so far as I have gone is merely preparatory to a truly useful work on the Indian Homoptera, and I trust that I have done enough to enlist the aid of all lovers of Natural History in India to collect materials for the purpose. I am prepared to do all I can towards naming any collections sent for that purpose to me at 43 Park Street, Calcutta. I would suggest that all new and unnamed or unrecognized specimens be deposited in the Indian Museum until arrangements can be made for their being sent to Europe for identification, and further I shall be happy to furnish instructions for the collection and preservation of specimens in the meantime. In the section *Homoptera* are included the cicadæ whose shrill song is so well-known, the beautiful lantern-flies with their long cephalic process, the cicadinæ, the plant-lice including that which yields the lac-dye and lac of commerce, and the majority of the myriads of insects which one can see flying about the street lamps at the close of the rains. Not one in fifty of these latter has as yet been described, and I can promise any one who chooses to take up this order plenty of novelties and plenty of amusement. In the section *Heteroptera* are included those insects which live on vegetable juices and are found on land or in water, in the latter element skipping over the surface or swimming. Many of them are beautifully coloured and vie with all other orders in the richness of their clothing and the quaintness of their forms. As this is the first attempt at reviewing the recorded knowledge of our Indian *Homoptera* there must be many omissions but no trouble has been spared to make the record perfect. Nearly all the English, French, German, Swedish, Italian and Russian publications of the various Entomological

Societies have been examined, and it is believed that the omissions will prove to be of no great importance. I have added some species hitherto recorded only from Singapore and Siam when their occurrence in India is probable. Those acquainted with the order can alone appreciate the labour involved and value it, a labour enhanced by the absolute absence of any named collection in India. I have arranged as far as possible the collection in the Indian Museum, Calcutta, and this will always remain available for consultation by collectors. It is desirable, however, that fresh efforts should be made to increase that collection which is particularly deficient in *Rhynchota* and does not possess one-fourth of the named species.

2. *The Currents and Tides of the Hooghly and its littoral, and how they are influenced.*—By S. R. ELSON, Esq.

About twenty miles, or more, to the eastward of the entrance channels to the Mutlah River, and fifty to the eastward of the Hooghly River, lies the northern end, or termination, of a peculiar deep gut of water, named the 'Swatch of no Ground': where the delta sand-banks end so very abruptly as to launch suddenly from seven into one hundred fathoms, in the course of only three or four miles: and the depth is 300 fathoms at only 15 miles from the shore.

This gut, if I may be allowed the expression, is, doubtless, the subway, or aqueduct, for the conveyance, between the walls of the adjacent raised sea bottom, of the cooler and dense briny current which, all authorities show, runs up from S. W. to N. E. parallel with the Coromandel Coast for at least eight months of the year,* and which continues onwards, as a sure convection current, towards the sun-warmed shoal waters of the extensive submarine Ganges delta: thereby preventing the river silt from settling so far seaward as it has done both east and west of the head of the Swatch: even supposing that there is such a great outpour of water from the northern rivers during the freshets as some aver, but on which point there is, unquestionably, a doubt. *

At its head, the waters the Swatch pours forth seem to divide, the main part running eastward towards Chittagong, and then down along the Arracan Coast, at least so say some of the sea-directories. But a great portion of this stream of water, and that which most concerns us, turns westwards over the remarkably well-formed submarine sand dunes (alone to be found to the westward of the Swatch of no Ground) stretching out for more than thirty miles from dry land, and lying between the Bulchery sand on the east and Balasore Roads on the west. In proof of which statements, we have it from registers (kept on board the outer Light Vessels

* See Blanford's *Rudiments of Physical Geography.*

and courteously placed at my disposal by the Port Officer, Captain Stiffe, I. M.) of currents, that the mean daily set of the sea for the year 1880 was, at the Mutlah Light Vessel, 12·1 miles W. $\frac{3}{4}$ S., and, at the Eastern Channel Light, only one-half, or 6·4 miles in a S. W. by W. $\frac{1}{4}$ W. direction; whilst at the Pilots' Ridge, 32 miles W. S. W. of the latter, it was really an inset of the sea of $\frac{2}{3}$ of a mile N. W. $\frac{1}{4}$ W. *per diem*, during the six months, March to September, that she was in position.

Besides the natural tendency of the waters of the Hooghly littoral to flow round over the sands cyclonically, or against the hands of the watch (face upwards), all the year round, any small baric depression out over the Bay is quite sufficient to hurry it along with great force; so that it is a well-known fact that a large westward set at the Pilot Station, Sandheads, is a sure precursor of a cyclonic storm of greater or less intensity; this set showing itself long before the indraughted N. E. wind has gained sufficient force to cause it by friction with the sea-surface; doubtless, this deep gut, so handy to draw upon, furnishes a ready supply of northwards moving water, as required by the demand of a reduced or diminished aerial pressure on its left front: as flow also the responsive and light, but much more sluggish, air strata above it: a vibration of energy being taken up and translated by a water medium four and a quarter times more surely and speedily than by an air medium.

On the other hand, when such local meteorological conditions of an anti-cyclonic character occur as take place at the head of the Bay during the months of March, April, and May, (when strong S. S. W. and S. W. winds blow, and an eastward set of the sea is begot), such eastward set at the Mutlah Light is as nothing compared to that at the Eastern Channel Light; and even here, is scarcely ever more than 12 miles in the 24 hours, and, then, only on extraordinary occasions, when a S. W. gale and high sea call it forth (*see* Table of Sea-set at Sandheads in author's Sandheads Sailing Directory).

This deep gut of (doubtless running) water, this Swatch of no Ground, has also another influence not yet written about, that is, in giving a greater range to the tides in the Mutlah River of 3 feet 6 inches over those of the Hooghly River: these waters being so close-to are ever ready to swing and pulsate, to flow and ebb, in response to the disturbed equilibrium caused by the constantly varying attractions of sun and moon on land and sea areas: whilst the Hooghly has to draw upon a more distant reservoir wherewith to build up her tidal wave, and to which also to return the uprisen waters after the Hooghly meridian has rolled away eastwards from under the lunar and solar perturbing influences. I have been told by the captains of the Light Vessels who have had experience there, that there is a much stronger current

in and off the Mutlah than in and off the Hooghly. And if my memory serves me rightly, I remember there were not a few vessels lost in the Mutlah during the short period it was open as a port; their loss pointing to a stronger current making navigation of the Mutlah at least as dangerous, if not more so, than that of the Hooghly: all which I think may be safely attributed to its proximity to the Swatch of no Ground, the probable birthplace of the 'tide-rips' we experience throughout the Sandheads about September and October.

In all old directories for the Bay sailors are taught, that the tides at the Sandheads, in fact, all over the littoral, flow regularly round, and with equal force, like the hands of a watch (face upwards): this is an error which it is desirable should be corrected; for I find that but very little water runs to the eastward of north and south-south-east, and that for not more than an hour or so, at the turn of the tide from flood to ebb; all the rest going to the westward over the outlying reefs and sands, whose characteristics as well-formed sand dunes prove this westward set, if no other proofs were available for the purpose.

All the water from the Hooghly goes towards Balasore Roads in a S. W. direction from the mouth of the river. This large shallow basin, 40 miles in diameter, with an average depth of 7 to 8 fathoms of muddy, warmed water, may, with all propriety, be called the settling tank and evaporating pool for the annual 78,000,000 yards of solid silt deposit said to be brought down by the Hooghly waters. Muddy water is scarcely ever to be seen at the Ridge Light Station, excepting on spring tides, and when the sea is much agitated; and, as before stated, the mean daily set of the sea at that station is for the six months, March to September, only $\frac{2}{3}$ of a mile in a N. W. $\frac{1}{4}$ W. direction.

Although, at first sight, the general trend of the outlying reefs and sands to the S. S. E. seems to point to the currents setting in that direction, yet, in reality, they do not so set, and, doubtless, their S. S. E. direction is the result of the combination of three causes:—the proven almost constant westward set of the waters over them: the transporting, upheaving effect of the almost as constant sea swell from the S. and S. S. W.: also the disturbance caused by the warmed and, in the freshets, purer ebb waters meeting the above-mentioned constant westward set of cooler and denser water. Both currents in seeking equilibrium roll over and over each other as the tidal stream runs down the steep western edges of the sands, until the 10 fathom line is reached, where the upheaving wave power suddenly ceases, and the hard sand deposits as suddenly halt.

Close to the western edges of all the sands of the littoral, the

bottom is of a very soft blue clay, with a tenacious substratum which holds the sounding lead much too firmly, sometimes with such tenacity as to break the line.

But the eastern edges of the whole of them shelve very gradually, and consist of hard, fine sand such as is found high up in the Hooghly. This fine sand has, in very disturbed states of the sea, been deposited on the rigging of vessels, when these have been in from 12 to 15 fathoms of water, shining, when dry, like particles of steel filings.

As elsewhere, the tides of the Hooghly seem to be very much influenced by varying conditions of relative baric pressure over sea and land areas: both diurnal, when, in the afternoon, within 100 miles of land, the sea area has the superior pressure and *vice versâ* in the forenoon: and yearly or as termed in the tide tables, 'seasonal,' when, from October (as Mr. Blanford tells us, 'the land area is suddenly transformed into a region of high pressure') to March, the pressure is higher to the north than to the south, and *vice versâ*, when, the sea area becoming the seat of highest pressure, southerly winds as a necessary result, predominate, and raise a high swell at the Sandheads: this swell becoming more agitated in the shoal water of the estuary is, of itself, doubtless, a cause of the waters of the river standing higher; but, taken in conjunction with the steepened baric gradient and southerly wind, the mean level of the water in the river rises steadily till the advent of the lighter fresh water in the rains, when it stands higher still, or about four feet higher in September than in January and February, when salt or brackish water reaches far up the river. (In June of this year, immediately before the freshets had set down, I found five and a half grains at low, and five and three quarter grains of salt per ounce troy at high water, at Diamond Harbour.)

Any abnormal state of the usual relative baric pressure causes a corresponding disturbance in the predicted regularity of the tides, both in times and heights of low and high water: the water, as above-mentioned, responding to the altered baric gradient before the air has time to do so, much less to raise waves outside, which, of themselves, are known to augment, or exalt, the calm mean sea level.

From low to high water, in the whole of the river, is a little more than five hours; and from high to low water a little more than seven hours: but the flowing and ebbing of the water is greatly influenced by the strength of the freshets, and the distance from the sea: so that at Calcutta, in the month of September, vessels in the neap-tides, do not swing to the flood: and, owing to an extraordinary freshet this year, vessels did not swing flood in the height of a perigee spring tide; but this masking of the flood stream does not affect the rise and fall of the tide, which goes on all the same as the tide tables predict.

The difference in the times of low water between any two places on the river is generally equivalent to half the difference of high water between the two places added to the difference of the said high water.

For instance, the difference between the times of high water at Calcutta and Mud Point is three hours; and that between the time of low water is about four and a half hours.

3. *On the Antiquity, Authenticity and Genuineness of Chand Bardái's Epic, the "Prithiráj Rasau."*—By KAVIRAJ SHYAMAL DAS, M. R. A. S., *Poet Laureate and Member of the Royal Council, Meywar.*

(Abstract.)

The object of the author of this paper is to demonstrate that the well-known epic of Chand Bardái, the Prithiráj Rasau is not genuine, but was fabricated several centuries after by a bard of Rajpútáná. This position he endeavours to establish by quotations from the poem itself, showing that they abound with expressions commonly used in the dialect of that province and not found in the Braj Bháshá or any other Eastern dialect of India. The author then refers to several stone inscriptions found in Meywar which all contribute to confirm the position taken up by him. He concludes by stating that his object in writing the paper is to caution the public against the belief that the poem was written by Chand Bardái, or even by any author who was his contemporary. The spuriousness of the Rasau, he adds, is confirmed by the fact that its narrative and the names of persons mentioned and the dates given do not agree with those in the Persian works of Prithiráj's time.

At the conclusion of the paper, which will be published in full in *Journal, Part I.*, DR. HOENLE remarked, that from the brief perusal which he had been able to give to the Kavirája's paper, it seemed to him that it was likely to prove of considerable interest and importance. The question of the genuineness and credibility of the epic of Chand was one which deserved careful consideration. He did not feel sure regarding the cogency of the author's argument from the Rajpútání language of the Epic. There was no good reason why the language of the real Chand should be supposed to have been Braj Bháshá or any other Eastern dialect of India. The argument from the disagreement of the dates given in the epic from those given in Persian historical works was far more apposite. The fact of the existence of this disagreement had been long since pointed out; though hitherto it had not been satisfactorily accounted for. The peculiar point, requiring explanation, seemed to him to be this, that the dates of the epic, while smaller by about 90 years than those given elsewhere, were consistent with one another. The most important of the Kavirája's arguments, however, were undoubtedly

those, which were intended to identify certain events related in the epic with occurrences that happened in the history of Rajpútáná and Gujarát several centuries after the time when the real bard Chand was known to have lived. If these identifications could be satisfactorily established—as the Kavirája seemed to have done,—they would certainly prove, that, if not the whole epic, at least certain large portions of it were not genuine. With regard to this point, Dr. Hoernle said, he might briefly state what his own conclusions were. In connexion with the edition of the epic, which was being prepared for the Society, he had occasion carefully to examine and compare the available manuscripts. These seemed to disclose clear evidence that the epic had undergone, in the course of time, three distinct revisions or recensions. At the time of each of these revisions, large new portions, being sometimes entire cantos, were added to the poem. He thought it might possibly be shown, in the course of further investigation, that those events which did not take place so early as Chand's time, were recorded in the cantos subsequently added to the original and genuine epic. For the present, he was not disposed to give credence to such a sweeping statement that the whole of the poem was a forgery dating from so late a date as the 15th or 16th century.

4. *On some copper coins of Akbar found in the Kángra District.*—By E. E. OLIVER, M. G. C. E. (With 2 plates.)

(Abstract.)

This paper contains a description given by Mr. E. E. Oliver of a parcel of copper coins of Akbar, about 30 in number, which the author obtained from a Baniyá in the Kángra Valley. Though struck at widely distant places and considerably differing in date they were all in an excellent state of preservation. Most of the mints, 28 in all, were new to Mr. Oliver; and one curious circumstance which he notes in connexion with this find is that it includes specimens of the whole twelve Persian months, in many cases of several mints.

The paper with 2 plates, will be published in full in *Journal*, Part I.

5. *On the Corrosion of the lead-lining of Indian Tea-Chests.*—By ALEXANDER PEDLER, ESQ., F. C. S.

(Abstract.)

In this paper Mr. Pedler gives an account of numerous experiments which he made at the request of the Indian Tea Association to ascertain the cause of the partial corrosion and in some instances total destruction of the lead linings of tea chests. The experiments made, and the results given by them are very interesting, and the paper will be published in

full in the Journal, Part I. The conclusions arrived at by Mr. Pedler may, however, be stated here. They are :

1. That tea properly manufactured in the ordinary way has no power to corrode lead.
2. That if unseasoned and damp wood is used for the manufacture of tea boxes, corrosion of the tea lead is, under favourable circumstances, almost certain, but that some varieties of wood will act more violently than the others.
3. That even if seasoned wood be used, and if it be allowed to become saturated with water and then placed in favourable circumstances of heat and moisture, corrosion of the tea lead may occur, though not to so great an extent as if unseasoned wood had been used.
4. That the active agent does not exist ready formed in unseasoned wood, but is produced by a secondary action from the constituents of the wood.
5. That the corrosion is not due to contact action between the lead and the wood, but that a volatile substance is gradually produced from the unseasoned wood.
6. That the corroding agent is usually acetic acid in the presence of moist air and carbonic acid, but that other acids of the same series are sometimes produced and also act on the lead, and in the case of butyric and valeric acids, a greenish yellow incrustation is formed differing entirely from the whitish and yellowish white incrustation produced from the acetic acid.
7. That the acetic and other acids are produced by the decomposition (probably by a kind of fermentation under the influence of heat and moisture and perhaps induced by some of the unstable nitrogenous compounds present) of certain substances which are known to be present in wood. Such bodies are fermentable sugars, starchy matters, malic acid, &c.
8. That the lead linings of the tea chests having been corroded and perforated by the corroding of the acids in the presence of moist air and carbonic acid, the tea can easily take up the disagreeable odour which the wood itself will possess after it has undergone the change in which acetic and butyric acid &c. are formed and thus the quality of the tea will be deteriorated.

Mr. WALDIE said that he considered the communication a very excellent and complete investigation of the subject and that the conclusions arrived at were very satisfactory. One point he thought not quite perfectly proved, *viz.*, that volatile acids only were concerned in the action of the wood or the lead, but perhaps a better knowledge of the details, to be had when the paper should be published, would make the matter clearer. It had also occurred to him with reference to the varieties of action of different kinds of wood, whether the presence of oily or resinous matters in some might not possibly have some influence in producing such differences.

LIBRARY.

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, 1885.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 2nd December, 1885, at 9 P. M.

D. WALDIE, Esq., F. C. S. Vice-President in the Chair.

The minutes of the last meeting were read and confirmed.

Several presentations were announced, as detailed in the Library List appended.

The following gentlemen proposed and seconded at last meeting were balloted for and elected :

As ordinary Member,

C. L. Griesbach, Esq., Depy. Supt., Geological Survey of India.

As Associate Member,

Dr. A. Fuhrer, Curator, Lucknow Museum, and Asstt. Archæological Surveyor, N. W. P. and Oudh.

The following gentlemen are candidates for election at next meeting,

1. A. R. Elson, Esq., proposed by J. Wood-Mason, Esq., seconded by H. B. Medicott, Esq.

2. Colonel W. B. Thomson, B. S. C., proposed by R. A. Sterndale, Esq., seconded by F. E. Pargiter, Esq.

3. Francis Carnac Barnes, Esq., Private Secretary to H. H. the Lieutenant-Governor, proposed by E. T. Atkinson, Esq., seconded by E. Gay, Esq.

4. Saiyad Mohamad Latif Khan, Extra Assistant Commissioner, Dera Gazi Khan, proposed by D. G. Barkley, Esq., seconded by Denzil Ibbetson, Esq.

The PRESIDENT reported that the undermentioned gentlemen were largely in arrears of subscription, and, though registered letters had been sent to them in accordance with Rule 37, no notice had been taken of them. Their names would therefore be suspended for a month as defaulters in the Society's Meeting Room, and, unless the sums due were paid in the meantime, they would be declared removed from the Society's Member List at the next meeting. In accordance with Rule 38, this fact is notified in the Proceedings.

1. T. Blissett, Esq.
2. Babu Bhairub Chunder Chatterji.
3. Capt. L. A. C. Cook.
4. Babu Sib Chunder Nag.
5. „ Protap Narain Sing.
6. J. C. Rees, Esq.
7. G. R. C. Williams, Esq.

Babu Binod Behary Mullik intimated his wish to withdraw from the Society.

The PHILOLOGICAL SECRETARY read 3 Reports on as many finds of old coins.

I. Report on 15 old uncurrent silver coins, forwarded by the Secretary to the Chief Commissioner of Assam, with his No. 1272, dated 29th July 1885.

1. The find place is not distinctly stated, but appears to have been Lakhimpur. The coins number 15 and are all of silver. Thirteen of them belong to Moghul Sultans of Delhi, the remaining two are of Assamese Rájás.

2. The Moghul coins are the following :

	No. of Specimens.
1, V, <i>Sháh Jehán</i> , A. H. 1037—1068 = A. D. 1627—1658 ; mint and date illegible ; reign 13 ; bad specimen	1
2, VI, <i>Aurangzib</i> , A. H. 1064—1118 = A. D. 1658—1707 ;	
<i>a</i> , mint, Súrat, date 1095, reign 27	1
<i>b</i> , "Golkonda ;" date [1074], reign 6	1
<i>c</i> , mint Jehánagar ; date 1102, reign 34 ...	1
<i>d</i> , illegible ; illegible	1
	4
3, XIII, <i>Muhammad Sháh</i> , A. H. 1131—1161 = A. D. 1719—1748,	
<i>a</i> , mint Arkot, dates illegible	5
<i>b</i> , mint Jehángírábád ; date 1145, reign 15	1
	6

	No. of Specimens.
4, XIV, <i>Ahmed Sháh Bahádur</i> , A. H. 1161—1167 = A. D. 1748—1754; mint Arkot, date illegible	1
5, XV, <i>Azízuddín Muḥammad</i> , <i>Alamgír</i> II, A. H. 1167—1175 = A. D. 1754—1761; mint Arkot, date illegible	1
Total ...	13
3. The Assamese coins are the following :	
6, IX, <i>Svarga Deva Pramatta Siṅha</i> , Sáka 1660—1662 = A. D. 1738—1750 : date 1664; octagonal	1
7, XI, <i>Svarga Deva Lakshmí Siṅha</i> , Sáka 1693—1706=A. D. 1771—1784; date 1697; octagonal :	1
Total ...	2
Grand total ...	15

II. Report on 227 old gold coins, forwarded by the Deputy Commissioner of Hissar, with his No. 1155, dated 18th August 1885.

1. The find place is not stated. Exact information on this head is always desirable.

2. The coins number 227, all of gold, and all of Emperor Akbar's mints, and of various types : viz.,

	No. of Specimens.
1, TYPE, figured in Marsden's Numismata Orientalia, Plate XXXIX, No. DCCCXIII, with two beaded, oblong and square, areas.	
<i>a</i> , mint <i>Ahmadábád</i> , dates 981 ¹ , 982 ¹⁰ , 984 ¹	12
<i>b</i> , „ <i>Dár ul Khiláfat Agra</i> , dates 981 ³ , 982 ¹⁵ , 983 ⁹ , 984 ¹ ,	28
<i>c</i> , „ <i>illegible</i> ; dates 982 ¹ , 983 ¹⁹ , 984 ²⁴ , 985 ¹	45
<i>d</i> , „ <i>Patna</i> , date 984 ¹	1
2, TYPE, figured in Marsden's Numismata Orientalia, plate XXXIX, No. DCCCIV, with two straight-lined, oblong and round, areas :	
<i>a</i> , mint <i>Ahmadábád</i> , dates 980 ¹⁰ , 981 ¹⁰	20
<i>b</i> , „ <i>Dár ul Khiláfat Agra</i> , date 976 ⁷ , 977 ⁵ , 978 ³ , 979 ⁴ , 980 ⁴	23

		No. of Specimens.
c,	mint <i>Agra</i> (with Sultán al <i>Azam</i>) dates 971 ¹⁰ , 972 ⁵ , 973 ² , 974 ⁴ , 975 ⁶	27
d,	„ <i>Hasrat Dehli</i> , dates 977 ⁶ , 978 ¹ , 979 ¹	8
e,	„ <i>Hasrat Dehli</i> , (with Sultán al <i>Azam</i>) dates 972 ² , 973 ¹ , 975 ⁴ , 976 ¹ , 979 ¹	9
f,	„ <i>Dár ul Khiláfat Láhor</i> , dates 976 ² , 977 ⁵ , 972 ¹ , 973 ²	11
g,	„ <i>Láhor</i> (with Sultán al <i>Azam</i>), dates 975 ³ , 976 ² , 977 ⁴ , 978 ¹ , 979 ¹	11
h,	„ <i>illegible</i> , dates 980 ³ , 981 ⁴ , 983 ³ ...	10
3,	TYPE, not fig. in Marsden, with one straight- lined oblong and one scalloped round area.	
	a, Mint <i>Láhor</i> (with Sultán al <i>Azam</i>), dates 970 ³ , 973 ² , 974 ² , 976 ⁴	13
4,	TYPE, not fig. in Marsden, with one straight- lined oblong and one double scalloped area :	
	a, mint <i>Láhor</i> , (with Sultán al <i>Azam</i>), date 971 ⁵	5
5,	TYPE, not fig. in Marsden, with two straight- lined, oblong and square, areas :	
	a, mint <i>Dár us Salánat Ahmadábád</i> , date 981 ²	2
6,	TYPE, not fig. in Marsden, with one arched oblong and one round area :	
	mint <i>Jaunpur</i> , date 972	1
7,	TYPE, not in Marsden ; lettered surfaces ; mint (camp), date 984	1
Grand Total, ...		227

The value of the coins is, intrinsic Rs. 18-12-0 each, and numismatic Rs. 22 each.

III. Report on 176 old silver coins forwarded by the Deputy Commissioner of Hissar, with his No. 1192, dated 29th August, 1885.

1. They are stated to have been found in the Hissar District. They number 176, and all are (silver) rupees.

2. They belong to the following Moghul sovereigns of Delhi :

1, VI. *Aurangzib*, A. H. 1068—1118 = A. D.

1658—1707, mint *Mustaqir ul Khiláfat Akbarábád*, dates 1113, 1117 ; reigns 45, 49, 37

3

	No. of Specimens.
2, VIII. <i>Bahádur Sháh</i> , A. H. 1118—1124 = A. D. 1707—1712; mint illegible, date 1122.	1
3, X. <i>Farrokh Sír</i> , A. H. 1124—1131 = A. D. 1712—1719, mint Dár us Saltanat Láhor; date [1130], reign 7	1
4, XIII. <i>Muhammad Sháh</i> A. H. 1131—1161 = 1719—1748; mint Dár ul Khiláfat Sháh Jahánábád; dates various; two varieties of the "Sáhib Qirán" type of coins: <i>viz.</i>	
<i>a</i> , with date in top line	104
<i>b</i> , with date in middle line	16
5, XIV. <i>Ahmad Sháh</i> , A. H. 1161—1167 = A. D. 1748—1754; mint Dár ul Khiláfat Sháh Jahánábád; dates various	37
6, XV. <i>Alamgír Zání Azíz ud dín</i> , A. H. 1167—1175 = A. D. 1754—1761, two different types of coin: <i>viz.</i> ,	
<i>a</i> , "Azíz ud dín" type, mint Sháh Jahánábád, dates 1169, 1170, 1173	8
<i>b</i> , Alamgír type, mints Sháh Jehánábád, Láhor and Akbárábád, date 1171	6
	} 14
Total, ...	176

3. The intrinsic value of the coins is about one Rupee each; the numismatic, from Rs. 1-4 to Rs. 2, according to the age.

The PHILOLOGICAL SECRETARY read a letter from Mr. Growse on a Hindú coin found at Kutiya.

"I am sending you a silver coin from Kútiya, on the Ganges, in the Fatehpore district, where I was encamped yesterday. Gen. Cunningham (Survey XI, 56) has conjectured on topographical grounds and from a calculation of distances that this might be the Buddhist site mentioned by Huwen Thsang in his Itinerary under the name of Ozuts. The chief object of my visit was to ascertain whether there were any remains on the spot that would help to confirm this theory.

"The present village is a most miserable place, but was evidently of much more importance at some earlier period, since it gives its name to a perganna and, is therefore for the sake of distinction officially styled Kútiya Khás. It lies in a ravine, with a high cliff on either side, one called Koṭ, the other Bará-gáṇw. The latter was the original site of the

village, and was deserted only about 100 years ago; the other is said to have been a fort. Under a tree on the Bara-gánw hill have been collected a few fragments of figure sculpture, one of which had been afterwards appropriated for a Muhammadan building, as it shows on the back the endings of four lines of a Persian inscription in bold raised characters.

“The coin was probably found in the Koṭ mound, where bricks of large size are also excavated. Its inscription is in modern Nágari characters, and what remains of it is very clear; but so many of the outside letters have disappeared, together with the outer rim of the coin itself, that I am unable to decypher it. I shall be glad if you can enlighten me.”

DR. HOERNLE remarked that the coin was a well-known one. It had already been described and figured in Marsden's *Numismata Orientalia* (No. MCCII, p. 789). It was again described and figured in the Appendix to Prinsep's *Indian Antiquities* (Useful Tables, Vol. II, p. 65). In the latter work it is said to be a coin issued by an obscure zemindar of Jayanagar, a village near Bajragarh. The inscriptions are differently read in the two works mentioned, but incorrectly in both. The correct reading appears to be the following. Obverse: *Srī Rághava Pratápa Pavana-putra Balavardhaka*. Reverse: *yak sika par chháp maha Rájá Jaya Singh* (*Ke date Jayanagar*). The words enclosed in brackets with the date, are wanting on the present coin. Both inscriptions are in the Hindi language, and in modern Nágari characters. The reverse states that “on this coin is inscribed the name of the Rájá Jai Singh, (the date, and the mint Jayanagar).”

The following papers were read :

1. *On Indian Ants of the Indian Museum in Calcutta.*—By PROFESSOR AUG. FOBEL.—*Communicated by the NATURAL HISTORY SECRETARY.*
(Abstract.)

This paper is an account of a collection of Calcutta ants recently forwarded to the author for determination by the Superintendent of the Indian Museum. The collection contains 26 species, of which two are described as new, one from the ‘soldier’ form under the name of *Pheidole jucunda*, and the other from the soldier and worker forms under that of *Pheidole woodi*, and a third has its female described for the first time.

The paper will be published in the forthcoming number of *Journal*, Part II, for the current year.

2. *Notes on the Chittagong Dialect.*—By MR. F. E. PARGITER.
(Abstract.)

In offering these Notes on the Chittagong dialect, Mr. Pargiter remarked that he was aware how incomplete they were, how many matters

were unnoticed and how much remains to be filled in to render his sketch thoroughly serviceable. These notes were collected some years ago when he was residing in Chittagong. Several of the peculiarities noticed are not confined to Chittagong, but prevail generally throughout Eastern Bengal, though not in so marked a degree. He hoped, however, that these notes, incomplete though they are, might be of use to others, whether as an aid in learning the vernacular, or as an inducement to supply what was wanting.

The language spoken in Chittagong is a dialect of Bengali, but greatly corrupted owing to the remote position of the district, the strong Muhammadan element in the population, and the tendency in East Bengal to speak quickly and clip the words.

These causes have been at work in Bakarganj and the country east of the Meghna, and the language spoken there differs from ordinary good Bengali, the difference increasing with the distance south-eastward. The extreme is reached in Chittagong where the difference is so marked that a native from other parts of Bengal does not readily understand the language.

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

DR. HOERNLE remarked that he had listened with very great interest to the paper which had just been read. Any contributions to our knowledge of the dialects of the North Indian languages were specially welcome in the present day when so much attention was beginning to be bestowed on the comparative study of them. There were only two of those languages which had hitherto received any closer examination with respect to their dialects. These were the Hindí and the Bihári languages. It was well-known that the other Gauḍian languages, and especially the Bangálí possessed equally distinct and instructive dialects; but, hitherto, but very little had been made known about them beyond the fact of their existence. It was, therefore, of peculiar interest to receive some information on the Chittagong dialect, one of the most curious, in many ways, of the Bangálí language. Listening to the paper as it was he had marked down a few points which had specially struck him. The process of phonetic detrition in some respects was carried a step beyond the stage in which it was usually found in the Gauḍians. The dissimilar Sanskrit conjunct *ksh* was assimilated in Prákrit to *khh*, and in Gauḍian simplified to *kh* or reduced to *h*, but in the Chittagong dialect it was found altogether dropped, as in *deíte* 'to see' for the ordinary Bangálí *dekhite*. This change was said to be "almost invariable, if the second vowel be *i* or *í*." But that it occurred also under other conditions was shown by the instance of *húmná* (हुमना) for *súkh'ná* (सुखना). The change of an initial sibilant or of a *chh* to *h* was almost invariable in the Chittagong dialect,

but this phenomenon might be observed also in other dialects, and curiously enough it was found of the greatest frequency in the extreme west, in the Sindhí and Panjábí ; so that here the dialects of the furthest east and the furthest west most nearly approximated.

NAWAB ABDUL LATIF KHÁN BAHADUR said :—Mr. Pargiter is deserving of the best thanks of this meeting for the very interesting paper which he has read this evening. He has taken great pains in enquiring into, and collecting information regarding, the shape which the Bengali language has assumed in the district of Chittagong. If similar enquiries were made by gentlemen residing in the other districts of Bengal, the various forms which the vernacular has taken in those districts, would show a most interesting and instructive state of affairs. What has struck me much is the way in which the Bengali language has become gradually more and more corrupted, the further you go in all directions from the district of Nuddea, the seat of pure Bengali.

While on this subject, it would not perhaps be uninteresting, if I mention my own experience of the various forms which the Urdu language has assumed in various parts of India. It seems to me that the principle is exactly the same as in the case of the Bengali already noticed by me. The chief seat of Urdu is Delhi and the further the distance from Delhi, the more and more corrupted does the Urdu language become. As it travels northwards, it gets mixed up with the Gurmukhi and Pushto in the Panjáb and the Frontier districts, and loses its purity. Towards the south-west it passes through Rajpútáná, and becoming mixed up with the Marwari Nágari gets more and more corrupted until it reaches the Province of Sindh, and there getting mixed up with Sindhí, assumes the worst form. Travelling towards the south, it passes through Gwalior and Indore in Central India, and reaches Bombay viâ Baroda, and thus becomes mixed up with Nágri, Gujrati, and Marhatti, thereby entirely losing its integrity. It then travels further south towards Hydrabad and Madras, and assumes the worst form by getting mixed up with Canarese, Telugu and Tamil. In some of the districts around Delhi, the Urdu preserves its integrity to a certain extent, with some slight but quite perceptible corruptions. In travelling south-east, towards Bengal, it becomes mixed up with the Braj Bhasha of Muttra, the Nágri of various forms all along the south-eastern confines of Behar, and finally with the Bengali language, becoming more and more corrupted the further it moves from Delhi. Of all the cities at a distance from Delhi, Lakhnau, Murshidábád and Dacca have kept up the Urdu in a much purer condition than other places. The Urdu of Bombay is very bad, and that of Hydrabad and Madras even worse. In my

travels through all these places I have been much struck with the different ways in which the Urdu language has been corrupted; but what seems to me to be most curious is, that in such a large Muhamadan city as Hyderabad, the Urdu has not been preserved in such a decent condition, as at Lakhnan, Murshidábád and Dacca. And it is also remarkable, that whilst the idiomatic expressions of Delhi have been carefully preserved in Murshidábád and Dacca, they have been quite corrupted in the chief towns of the Province of Behar, through which the Urdu language has travelled to Bengal. It seems to me, that it would be a gain to our Society if gentlemen who take an interest in this subject, and who have the time and the inclination, would direct their attention to enquire and collect information as to the various forms which the Urdu has assumed in different parts of Hindustán.

DR. HOERNLE suggested that the Nawab himself would be the best qualified person to supply that information about Urdu. All information of that kind was certainly very desirable.

LIBRARY.

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

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presented by the respective Societies and Editors.

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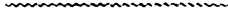
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OF THE
ASIATIC SOCIETY OF BENGAL.

ON THE 31ST DECEMBER, 1884.

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Vice-Presidents.

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D. Waldie, Esq., F. C. S.

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H. B. Medlicott, Esq., F. R. S.

J. Westland, Esq., C. S.

Nawab Abdul Latif Khán Bahádur, C. I. E.

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Babu Pratápachandra Ghosha, B. A.

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R. = Resident. N. R. = Non-Resident. N. S. = Non-Subscribing.  
L. M. = Life Member. F. M. = Foreign Member.

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N. B.—Members who have changed their residence since the list was drawn up are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alteration may be made in the subsequent edition. Errors or omissions in the following list should also be communicated to the *Secretaries*.

Members who are about to leave India and do not intend to return are particularly requested to notify to the *Secretaries* whether it is their desire to continue members of the Society; otherwise, in accordance with Rule 40 of the Bye-Laws, their names will be removed from the list at the expiration of three years from the time of their leaving India.

Date of Election.		
1860 Dec. 5.	R.	Abdul-Latif, Khán Bahádur, Nawab, c. i. e. <i>Calcutta</i> .
1860 July 4.	N.R.	Ahmad Khán Bahádur, Hon. Sayyid, c. s. i. <i>Aligarh</i> .
1872 April 3.	N.R.	Ahsan-ullah, Nawáb. <i>Dacca</i> .
1860 April 4.	N.R.	Aitchison, J. E. T., M. D., Secretary to the Surgeon General, H. M.'s Forces, Bengal, with the Afghan Boundary Commission.
1884 Mar. 5.	L.M.	Ali Kader Syud Hossain Ali Mirza, Bahadur, Nawab Nazim of <i>Murshedabad</i> .
1878 Mar. 6.	N.S.	Allen, G. W., c. i. e. <i>Europe</i> .
1874 June 3.	R.	Amír Alí, Hon., Barrister-at-Law. <i>Calcutta</i> .
1865 Jan. 11.	R.	Anderson, John, M. D., F. R. S., F. L. S., Superintendent, Indian Museum. <i>Calcutta</i> .
1884 Sept. 3.	R.	Anderson, J. A. <i>Calcutta</i> .
1875 Feb. 3.	N.R.	Armstrong, J., Surgeon, Bengal Army. <i>Naini Tal</i> .
1871 Sept. 6.	R.	Atkinson, Edwin Felix Thomas, B. A., c. s., Acct.-General. <i>Calcutta</i> .
1869 Feb. 3.	N.R.	Attar Singh Bahádur, Sirdár, c. i. e., M. U. F., Chief of Bhadour. <i>Ludiana</i> .
1870 Feb. 2.	N.R.	Baden-Powell, Baden Henry, c. s., c. i. e., Offg. Judge, Chief Court of the Panjab. <i>Lahore</i> .
1873 Aug. 6.	N.S.	Badgley, Major William Francis, s. c., Offg. Deputy Superintendent of Surveys. <i>Europe</i> .
1862 Feb. 5.	R.	Baisák, Gaurdás, Deputy Magistrate. <i>Calcutta</i> .
1859 Aug. 3.	R.	Balaichand Siñha. <i>Calcutta</i> .
1865 Nov. 7.	N.S.	Ball, Valentine, M. A., F. R. S., F. G. S. <i>Europe</i> .

Date of Election.		
1860 Nov. 1.	R.	Banerjea, Rev. Kristo Mohun, LL. D. <i>Calcutta.</i>
1862 Aug. 1.	R.	Barclay, Arthur, M. B., Surgeon, Bengal Medical Service. <i>Calcutta.</i>
1869 Dec. 1.	L.M.	Barker, R. A., M. D., Civil Surgeon. <i>Nya Doonka, Santhal Pergunnahs.</i>
1879 Aug. 28.	N.R.	Barkley, D. G., M. A., C. S. <i>Lahore.</i>
1881 Aug. 3.	N.R.	Barstow, Henry Clements, C. S., Magistrate and Collector. <i>Cawnpore.</i>
1878 June 5.	R.	Bayley, C. S., C. S., Offg. Under-Secretary to the Government of Bengal. <i>Calcutta.</i>
1873 Feb. 5.	R.	Bayne, R. R., M. R. I. B. A., Draughtsman, Chief Engineer's Office, E. I. Railway. <i>Calcutta.</i>
1864 Sept. 7.	N.R.	Beames, John, B. C. S., Offg. Commissioner, Burdwan Division. <i>Chinsurah.</i>
1878 Sept. 25.	N.R.	Beighton, T. D., C. S., Offg. Judge. <i>Patna.</i>
1881 Mar. 2.	N.R.	Benett, W. C. <i>Cawnpore.</i>
1862 Oct. 8.	N.S.	Bernard, Charles Edward, C. S., Chief Commissioner. <i>British Burmah.</i>
1872 Aug. 7.	R.	Beverley, The Hon. Henry, M. A., C. S. <i>Calcutta.</i>
1876 Nov. 15.	N.R.	Beveridge, Henry, C. S., District and Sessions Judge. <i>Faridpur.</i>
1878 Oct. 4.	R.	Bhakta, Krishna Gopal. <i>Calcutta.</i>
1879 Mar. 5.	N.R.	Biddulph, Major J., B. S. C. <i>Europe.</i>
1884 Jan. 2.	N.R.	Bidie, G., Brigade-Surgeon, M. B., F. L. S., C. I. E., Supt. Govt. Central Museum. <i>Madras.</i>
1884 Feb. 6.	R.	Bigg-Wither, Major A. C., B. A., A. I. C. E. <i>Calcutta.</i>
1875 July 7.	N.R.	Black, F. C., Archæological Engineer. <i>Bellary, Madras Presy.</i>
1857 Mar. 4.	L.M.	Blanford, H. F., A. R. S. M., F. R. S., F. G. S., Meteorological Reporter, Govt. of India. <i>Europe.</i>
1879 Aug. 28.	R.	Blyth, W. D., M. A., LL. D., C. S., Under-Secretary to the Govt. of Bengal. <i>Europe.</i>
1880 Nov. 3.	N.R.	Bose, Pramatha Nath, B. Sc., F. G. S., Geological Survey of India. <i>Raipur, C. P.</i>
1877 May 2.	N.S.	Bourdillon, James Austin, C. S., Inspector-General of Registration. <i>Europe.</i>
1876 Nov. 15.	N.R.	Bowie, Major M. M. <i>Nagpur.</i>
1868 Jan. 15.	N.R.	Boxwell, John, C. S., Offg. Comr., Patna Divn. <i>Gya.</i>
1883 Feb. 7.	R.	Brace, Lewis Jones K., Curator of the Herbarium, Royal Botanic Garden. <i>Sibpur.</i>
1876 May 4.	N.R.	Bradshaw, Brigade-Surgeon A. F., A. M. D. <i>Quetta.</i>
1860 Mar. 7.	L.M.	Brandis, Dietrich, Ph. D., F. L. S., F. R. S. <i>Europe.</i>
1879 Jan. 8.	R.	Browne, J. F., C. S., M. R. A. S., Offg. District and Sessions Judge, 24-Pergunnahs. <i>Calcutta.</i>
1879 April 2.	R.	Calcutta, The Rt. Rev. the Lord Bishop of. <i>Calcutta.</i>
1869 Jan. 20.	N.R.	Cadell, Alan, B. A., C. S., Magte. <i>Aligarh, N. W. P.</i>
1880 Mar. 3.	N.R.	Carlleyle, A. C., Archæological Survey of India. <i>Allahabad.</i>

Date of Election.		
1881 Feb. 2.	N.R.	Carter, Philip John, Deputy Conservator of Forests. <i>Rangoon.</i>
1876 Nov. 15.	R.	Cayley, Surgeon-Major H., Surgeon, Mayo Native Hospital. <i>Europe.</i>
1881 Mar. 2.	N.R.	Channing, Francis Chorley, B. C. S. <i>Europe.</i>
1883 Aug. 30.	R.	Chatterji, Dr. Aghorenath. <i>Calcutta.</i>
1881 Mar. 2.	N.R.	Chatterji, Bhairab Chunder. <i>Jessore.</i>
1880 May 5.	N.R.	Chatterji, Tara Prasada, Deputy Magte. <i>Burdwan.</i>
1880 Jan. 7.	R.	Chaudhuri, Govinda Kumara. <i>Calcutta.</i>
1861 Mar. 1.	N.R.	Chaudhuri, Haranchandra, Zamindar. <i>Sherpur, Maimansingh.</i>
1880 Nov. 3.	N.R.	Chaudhuri, Khirode Chandra Roy. <i>Berhampore College.</i>
1874 Aug. 5.	N.R.	Chennell, A. W., Asst. Surveyor, Survey Department. <i>Shillong.</i>
1877 Aug. 30.	N.S.	Clarke, Major Henry Wilberforce, R. E. <i>Europe.</i>
1880 Aug. 26.	N.R.	Clerk, Lieut.-Colonel Malcolm G., Commandant of the Fort. <i>Chunar, N. W. P.</i>
1881 May 4.	N.R.	Cockburn, John, Asst. Sub-Depy. Opium Agent. <i>Karwi.</i>
1884 April 2.	N.R.	Cole, Major H. H., R. E. <i>Mhow.</i>
1884 Mar. 5.	R.	Colvin, The Hon. Sir Auckland, K. C. M. G. <i>Calcutta.</i>
1874 Nov. 4.	F.M.	Constable, Archibald, Resident Engineer and Personal Asst. to Chief Engineer, Oudh and Rohilkund Railway. <i>Lucknow.</i>
1881 Mar. 2.	N.R.	Cook, Capt. L. A. C. <i>Jamrud.</i>
1884 Aug. 6.	R.	Cotes, E. C., Indian Museum. <i>Calcutta.</i>
1876 Mar. 1.	N.R.	Crawford, James, B. A., C. S., Barrister-at-Law, Offg. District and Sessions Judge. <i>Nuldea.</i>
1877 June 6.	R.	Croft, Hon. A. W., M. A., Director of Public Instruction. <i>Calcutta.</i>
1874 Mar. 4.	N.S.	Crombie, Alexander, M. D., Civil Surgeon. <i>Europe.</i>
1883 April 4.	N.R.	Crosthwaite, Hon. C. H. T., C. S., Central Provinces. <i>Nagpur.</i>
1873 Aug. 6.	N.S.	Cunningham, David Douglas, M. D., Professor, Medical College. <i>Calcutta.</i>
1873 Dec. 3.	N.R.	Dames, Mansel Longworth, C. S., Asst. Commissioner. <i>Dera Ismail Khan.</i>
1877 June 6.	N.R.	Darbhanga, H. H. the Maharájá of. <i>Darbhanga.</i>
1865 June 7.	N.R.	Dás, Rájá Jaykishan, Bahádúr, 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>
1869 April 7.	F.M.	Day, Dr. Francis, F. L. S., F. Z. S. <i>Europe.</i>
1859 Oct. 6.	N.R.	Delmerick, J. G., Extra Assistant Commissioner. <i>Mussoorie.</i>
1862 May 7.	N.R.	Dhanapati Singh Dughar, Raí Bahádúr. <i>Azimganj.</i>
1880 Dec. 1.	N.R.	Dilawar Husein Ahmad, Maulavi, Depy. Magte., and Depy. Collr. <i>Jamui, Monghyr.</i>

Date of Election.			
1877	July 4.	R.	Diler Jang, Nawáb Syad Ashgar Ali, Khan Bahadur, c. s. i. <i>Calcutta.</i>
1875	Mar. 3.	R.	Douglas, J. C., Supdt. of Telegraph Stores. <i>Alipore.</i>
1882	Mar. 1.	N.R.	Douie, J. M., c. s., Settlement Officer. <i>Karnal, Panjab.</i>
1879	Feb. 5.	N.R.	Duthie, J. F., Superintendent, Govt. Botanical Gardens. <i>Saharanpur.</i>
1877	Aug. 30.	N.R.	Dutt, Kedarnath, Depy. Magistrate. <i>Calcutta.</i>
1873	April 2.	R.	Dutt, Omesh Chunder. <i>Calcutta.</i>
1881	Mar. 2.	F.M.	Eden, The Hon'ble Sir Ashley, K. C. S. I., C. I. E. <i>Europe.</i>
1870	Mar. 9.	L.M.	Edinburgh, H. R. H. The Duke of. <i>Europe.</i>
1863	May 6.	R.	Edgar, John Ware, c. s., c. s. i. <i>Calcutta.</i>
1874	Dec. 2.	N.S.	Egerton, The Hon. Sir Robert Eyles, c. s., K. C. S. I., C. I. E. <i>Europe.</i>
1871	Dec. 2.	N.S.	Eliot, J., M. A., Meteorological Reporter to the Govt. of Bengal. <i>Europe.</i>
1859	Dec. 7.	R.	Fath Ali, Maulavi. <i>Calcutta.</i>
1863	Jan. 15.	N.S.	Fedden, Francis, Asst., Geological Survey of India. <i>Europe.</i>
1876	Jan. 5.	F.M.	Feistmantel, Ottokar, M. D., Palæontologist, Geological Survey of India. <i>Europe.</i>
1880	April 7.	N.R.	Fiddian, W., M. A., c. s., Offg. Magistrate and Collector <i>Birbhum.</i>
1879	July 2.	N.R.	Finucane, M., c. s., Director of Agriculture, Bengal. <i>Europe.</i>
1869	Sept. 1.	N.S.	Fisher, John Hadden, c. s. <i>Europe.</i>
1872	Dec. 4.	N.R.	Forbes, Lieut.-Col. John Greenlaw, R. E. <i>Allahabad.</i>
1876	July 5.	N.R.	Foulkes, The Rev. Thos., F. L. S., M. R. A. S., F. R. G. S., Chaplain. <i>Coimbatore, Madras Presy.</i>
1869	Sept. 1.	N.R.	Fryer, Colonel G. E., M. S. C. Deputy Commissioner. <i>Thayetmo, B. Burmah.</i>
1880	April 7.	N.R.	Gajapati, Ananda Ram, Raja of Vizianagram. <i>Vizianagram.</i>
1873	Dec. 3.	N.R.	Gamble, J. S., M. A., Conservator of Forests, Northern Circle. <i>Madras.</i>
1883	Aug. 1.	N.R.	Garga, Kumar Isvariprasad, Zemindar. <i>Maisádal.</i>
1859	Aug. 3.	L.M.	Gastrell, Major-General James Eardley, (retired). <i>Europe.</i>
1867	Dec. 4.	N.R.	Gay, E., M. A., c. s., Accountant-General. <i>Bombay.</i>
1883	Aug. 30.	R.	Ghose, Manomohan. <i>Calcutta.</i>
1871	May 3.	R.	Ghoshá, Káliprasanna. <i>Calcutta.</i>
1869	Feb. 3.	R.	Ghoshá, Pratápachandra, B. A. <i>Calcutta.</i>
1870	May 4.	R.	Ghoshál, Rájá Satyánand. <i>Calcutta.</i>

Date of Election.		
1880 Aug. 4.	R.	Gibbs, The Hon. James, C. S. I., C. I. E., F. R. G. S., M. R. A. S., Member of the Governor-General's Council. <i>Calcutta</i> .
1884 Dec. 3.	N.R.	Giles, George M., M. B., F. R. C. S., Surgeon Naturalist, S. S. "Investigator." <i>Sandoway</i> .
1875 July 7.	N.R.	Girdlestone, Charles Edward Ridgway, C. S., Resident. <i>Katmandu, Nepal</i> .
1861 Feb. 5.	F.M.	Godwin-Austen, Lieut.-Colonel H. H., F. R. S., F. Z. S., F. R. G. S. <i>Europe</i> .
1882 May 3.	R.	Golam Sarwar, Maulavi. <i>Calcutta</i> .
1862 July 2.	N.S.	Gordon, Robert, C. E., Executive Engineer, P. W. D. <i>Europe</i> .
1881 Mar. 2.	R.	Gosain, Hem Chunder. <i>Calcutta</i> .
1863 Nov. 4.	F.M.	Gowan, Major-General J. Y. <i>Europe</i> .
1879 Jan. 8.	N.R.	Gowan, Major W. E. <i>Simla</i> .
1877 Nov. 7.	L.M.	Grant, Alexander, M. I. C. E., Director of State Railways. <i>Europe</i> .
1876 Nov. 15.	N.R.	Grierson, George Abraham, C. S. <i>Bankipur</i> .
1861 Sept. 4.	N.S.	Griffin, Sir Lepel Henry, C. S., K. C. S. I. <i>Europe</i> .
1861 Feb. 6.	N.R.	Growse, Frederick Salmon, M. A., C. S., C. I. E., Magistrate and Collector. <i>Fatehpur, N. W. P.</i>
1880 Feb. 4.	R.	Gupta, Behárilál, C. S. <i>Calcutta</i> .
1883 June 6.	N.R.	Gurdyál Singh, Sirdár, C. S., Asst. Commissioner. <i>Hoshiarpur, Panjab</i> .
1867 July 3.	N.S.	Hacket, Charles Augustus, Assistant Geol. Survey of India. <i>Camp Abu, Rajputana</i> .
1883 Jan. 3.	N.R.	Harding, Francis Henry, B. A., C. S. <i>Europe</i> .
1879 Mar. 5.	R.	Harraden, S. <i>Calcutta</i> .
1877 Sep. 27.	R.	Hart, J., Attorney-at-Law. <i>Calcutta</i> .
1875 Mar. 3.	N.S.	Hendley, Surgeon Major Thomas Holbein. <i>Europe</i> .
1875 Aug. 4.	N.R.	Hewitt, James Francis Katherinus, C. S., Commissioner. <i>Chota Nagpur</i> .
1883 May 2.	N.R.	Hill, Samuel Alexander, B. Sc., A. B. S. M., F. C. S., Prof. of Physical Science, Muir College and Meteor. Reporter to Govt., N. W. P. and Oudh. <i>Allahabad</i> .
1872 Dec. 4.	R.	Hoernle, Rev. A. F. R., Ph. D., Principal of the Madrasah. <i>Calcutta</i> .
1878 Mar. 6.	N.R.	Hoey, W. <i>Lucknow</i> .
1884 Mar. 5.	N.R.	Holdsworth-Fisher, John, Professor, Hooghly College. <i>Chinsurah</i> .
1884 Mar. 5.	N.R.	Hooper, John, C. S., Settlement Officer. <i>Basti, N. W. P.</i>
1873 Jan. 8.	L.M.	Houstoun, G. L., F. G. S. <i>Europe</i> .
1863 Jan. 15.	N.R.	Howell, Mortimer Sloper, C. S. <i>Mirzapur, N. W. P.</i>
1878 Sep. 25.	N.R.	Hughes, G., C. S. <i>Rupar, Amballa</i> .
1867 Aug. 7.	N.R.	Hughes, T. H., A. R. S. M., F. G. S., Geol. Survey of India. <i>Kutni, E. I. R.</i>

Date of Election.		
1866 Jan. 17.	N.S.	Hughes, Major W. G., M. S. C. <i>Europe.</i>
1870 Jan. 5.	N.R.	Hume, Allan Octavian, C. B., C. S. <i>Allahabad.</i>
1884 May 2.	N.R.	Hussein, Syud, B. A., Secy. to Nizam of Hyderabad's Council.
1872 Dec. 4.	N.R.	Ibbetson, Denzil Charles Jelf, C. S. <i>Lahore.</i>
1866 Mar. 7.	N.R.	Irvine, William, C. S., Magistrate and Collector. <i>Ghazipur.</i>
1884 May 2.	N.R.	Iskander Ali Mirza, Prince. <i>Murshedabad.</i>
1853 Dec. 7.	N.R.	Isvariprasad Singh, Maharaja, G. C. S. I. <i>Benares.</i>
1874 Feb. 4.	R.	Jackson, Surgeon Major Charles Julian J. <i>Calcutta.</i>
1880 Dec. 1.	N.S.	Jackson, William Grierson, B. C. S. <i>Europe.</i>
1869 Aug. 4.	R.	Jahán Qadr Muhammad Wáhid Alí, Bahádur, Prince. <i>Garden Reach, Calcutta.</i>
1876 July 5.	N.S.	Jarrad, Lieut. F. W., R. N., F. R. A. S., Marine Survey Dept. <i>Europe.</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, Capt. Thomas Morris, M. S. C., Asst. Commissioner and J. P. for Burmah. <i>Bassein.</i>
1862 Mar. 5.	N.R.	Johnstone, Lieut.-Colonel James William Hope, Commissioner. <i>Europe.</i>
1867 Dec. 4.	N.S.	Johnstone, Lt.-Col. James, Political Agent. <i>Europe.</i>
1878 Aug. 7.	N.R.	Johnstone, P. DeLacy, C. S.
1873 Dec. 3.	N.R.	Johore, H. H. the Mahárájá of, K. C. S. I. <i>New Johore, Singapore.</i>
1884 Aug. 6.	N.R.	Jones, E. J., Geol. Survey of India. <i>Chhindwara.</i>
1875 Nov. 3.	N.R.	Jones, S. S., B. A., C. S. <i>Santhal Pergunnahs.</i>
1869 April 7.	R.	Kabíruddín Ahmad, Maulavi. <i>Calcutta.</i>
1882 Mar. 1.	R.	Kennedy, Pringle, M. A. <i>Calcutta.</i>
1874 Dec. 2.	N.R.	Khudábaksh, Khan Bahadur, Maulavi. <i>Bankipur.</i>
1884 Nov. 5.	N.R.	Kitts, Eustace John, C. S. <i>Azamgarh, N. W. P.</i>
1867 Dec. 4.	R.	King, G., 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., <i>Peshawar.</i>
1862 Jan. 15.	N.R.	King, W., Jr., B. A., F. G. S., Depy. Supdt. of Madras Geol. Survey of India. <i>Kutni, E. I. R.</i>
1880 Dec. 1.	N.S.	Kirton, Surgeon-Major William Henry, F. L. S., Medical Store-Keeper. <i>Europe.</i>
1880 Jan. 7.	N.R.	Kisch, H. M., M. A., C. S. <i>Calcutta.</i>
1877 Jan. 17.	N.R.	Kishor, Kumara Radha Dev, Juvráj of Hill Tipperah. <i>Tipperah.</i>
1882 June 7.	N.R.	Kishore Singh, Maharaja Kumar Harendra. <i>Bettiah.</i>
1884 Sept. 3.	R.	Kumar Indra Chandra Singh of Paikparrah. <i>Calcutta.</i>
1883 Aug. 30.	N.R.	Kuster, E. E. A. <i>Darbhanga.</i>
1878 Oct. 4.	N.R.	Lachman Singh, Raja. <i>Bulandshahr.</i>
1884 Jan. 2.	R.	Lall, Rai Sohun. <i>Calcutta.</i>

Date of Election.		
1877 Sep. 27.	N.R.	La Touche, James John Digges, B. A., C. S. <i>Gorakhpur.</i>
1881 Feb. 2.	N.S.	Laughlin, Robert Campbell, Asst. Supdt., Govt. Telegraph Department. <i>Calcutta.</i>
1882 Dec. 6.	N.R.	Lawrence, Walter. <i>Abu, Rajputana.</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>
1879 Dec. 3.	N.R.	Leonard, G. S., Traffic Superintendent, N. B. State Railway. <i>Saïdpur.</i>
1880 July 7.	N.R.	Lewis, Rev. Arthur, B. A., Vice-Principal, St. John's Divinity School. <i>Lahore.</i>
1873 Feb. 5.	N.S.	Lewis, Timothy Richards, M. B., Special Asst. to the Sanitary Commissioner with the Government of India. <i>Europe.</i>
1881 Dec. 7.	N.S.	Logan, R., C. S. <i>Lahore.</i>
1866 Jan. 17.	F.M.	Low, James, Surveyor, G. T. Survey. <i>Europe.</i>
1869 July 7.	N.R.	Lyll, Charles James, B. A., C. S. <i>Shillong.</i>
1870 April 7.	L.M.	Lyman, B. Smith. <i>Northampton, Mass., U. S., America.</i>
1884 Dec. 3.	N.R.	McCabe, R. B., C. S. <i>Kohima, Naga Hills, Assam.</i>
1868 Dec. 2.	N.R.	Macauliffe, Michael, B. A., C. S., Judicial Assistant. <i>Gujrat, Panjab.</i>
1880 June 2.	N.R.	Macdonald, James, C. E. <i>Rurki.</i>
1884 Mar. 5.	R.	Macdonnell, A. P., B. A., C. S., Offg. Secy., Govt. of Bengal. <i>Calcutta.</i>
1879 Feb. 5.	N.R.	Macgregor, Major C. R., F. E. G. S., 44th N. I. <i>Dibrugarh.</i>
1848 April 5.	L.M.	MacLagan, Major-General Robert, R. E., F. R. S. E., F. E. G. S. <i>Europe.</i>
1873 Dec. 3.	R.	MacLeod, Surgeon-Major Kenneth, M. D. <i>Calcutta.</i>
1880 May 5.	N.R.	MacLeod, Roderick Henry, B. C. S., Asst. Magte. <i>Kasia, Gorakhpur, N. W. P.</i>
1884 June 4.	R.	Macnair, Col. E. J. <i>Calcutta.</i>
1881 July 6.	R.	Mahomed Firukh Shah, Prince. <i>Calcutta.</i>
1882 Aug. 2.	R.	Mahomed Yusoof, Hon. Moulvie. <i>Calcutta.</i>
1867 April 3.	R.	Mainwaring, Major-General George Byres, S. C. <i>Serampur.</i>
1878 April 3.	R.	Mallet, F. R., Geological Survey of India. <i>Calcutta.</i>
1864 July 6.	R.	Mallik, Coomar Debendra. <i>Calcutta.</i>
1869 Sept. 1.	R.	Mallik, Yadulal. <i>Calcutta.</i>
1872 Nov. 6.	N.R.	Man, E. H., Asst. Supdt. <i>Nanconry, Nicobars.</i>
1880 May 5.	N.R.	Mandalik, The Hon. Rao Sahib Visvanath Narayana, C. S. I. <i>Bombay.</i>
1869 July 7.	N.R.	Markham, Alexander Macaulay, C. S., F. R. G. S., Collector. <i>Banda.</i>
1873 July 2.	N.R.	Marshall, C. W. <i>Gonatea, Synthia, Bengal.</i>
1877 Feb. 7.	N.S.	Marshall, Major Geo. Fred. Lycester, R. E., Asst. Secy., Govt. of India, P. W. D. <i>Europe.</i>

Date of Election.		
1860 Mar. 7.	R.	Medlicott, H. B., M. A., F. R. S., F. G. S., Supdt., Geological Survey of India. <i>Calcutta.</i>
1877 Mar. 7.	N.R.	Medlycott, Rev. Adolphus Edwin, PH. D., Military Chaplain. <i>Ferozepur, Panjab.</i>
1882 Dec. 6.	N.R.	Merk, W. R. H., c. s. <i>Lahore.</i>
1884 Nov. 5.	N.R.	Middlemiss, C. S. <i>Chakrata, N. W. P.</i>
1871 Sept. 6.	F.M.	Miles, Lieut.-Colonel S. B., s. c., Political Agent. <i>Muscat.</i>
1884 Sept. 3.	R.	Miles, William Harry. <i>Calcutta.</i>
1870 July 6.	R.	Miller, A. B., B. A., Barrister-at-law, Official Assignee. <i>Calcutta.</i>
1874 May 6.	N.R.	Minchin, F. J. V. <i>Aska, Ganjan.</i>
1875 Aug. 4.	N.R.	Minchin, Colonel, C. C. <i>Hissar, Panjab.</i>
1884 Dec. 3.	R.	Mirza Saraiya Jah Bahadur, Prince.
1856 Mar. 5.	R.	Mitra, Rájendralála, Rái Bahádur, LL. D., C. I. E. <i>Calcutta.</i>
1876 Dec. 6.	F.M.	Mockler, Major E., British Consul. <i>Basrah, Persian Gulf.</i>
1881 May 4.	N.R.	Molloy, Major Edward, 5th Goorkhas. <i>Abbotabad, Hasara, Panjab.</i>
1884 June 4.	R.	Moncreiffe, T. G. H. <i>Calcutta.</i>
1884 Apr. 2.	R.	Mondy, Edmund F., Civil Engineering Coll. <i>Sibpur.</i>
1881 Dec. 7.	N.R.	Monteath, J. J., M. D. <i>Silchar.</i>
1878 May 2.	N.R.	Moyle, J. C., Barrister-at-law. <i>Moulmein, Burmah.</i>
1864 Nov. 2.	N.R.	Muir, J. W., M. A., C. S., Barrister-at-law. <i>Mirzapore.</i>
1879 May 7.	N.R.	Mukerjea, Bhudeva, C. I. E. <i>Benares.</i>
1883 May 2.	R.	Mukerji, Rajkrishna, M. A., B. L., Bengali translator to Govt. <i>Calcutta.</i>
1867 Mar. 6.	R.	Mukerjea, The Hon. Pearimohan, M. A. <i>Uttarpara.</i>
1882 Jan. 4.	R.	Mukerji, Girijabhushan, M. A. <i>Calcutta.</i>
1880 Aug. 26.	R.	Mullick, Benod Behari. <i>Calcutta.</i>
1880 Aug. 26.	N.R.	Nag, Sib Chunder. <i>Bakarganj.</i>
1880 Dec. 1.	R.	Napier, J. R. <i>Calcutta.</i>
1882 Aug. 2.	N.R.	Narain Singh, Raja Ram. <i>Khyrah, Monyhyr.</i>
1876 May 4.	R.	Nash, A. M., M. A., Professor, Presidency College. <i>Calcutta.</i>
1881 Nov. 2.	R.	Nicéville, L. de. <i>Calcutta.</i>
1869 July 7.	N.R.	Nursing Rao, A. V. <i>Visagapatam.</i>
1871 July 5.	N.S.	Oates, E. W., C. E., Engineer, P. W. D., Garrison Div., Sittang Canal. <i>Europe.</i>
1879 Aug. 28.	N.S.	Oldham, Surgeon-Major C. F., F. R. G. S. <i>Europe.</i>
1883 Dec. 1.	N.R.	Oldham, R. D., A. R. S. M., Asst., Geol. Sur. of India.
1883 Aug. 30.	N.R.	Oliver, Edw. Emmerson, M. I. C. E., Asst. Secy. to Govt. Panjab, P. W. D. <i>Lahore.</i>
1880 Aug. 4.	L.M.	Pandia, Pandit Mohanlall Vishnulall, F. T. S., Member and Secy., Royal Council of Meywar. <i>Oodeypnr.</i>
1880 Jan. 7.	R.	Pargiter, Frederick E., B. A., C. S., Officiating Commissioner of the Sundarbans. <i>Calcutta.</i>

Date of Election.			
1880 Jan. 7.	N.R.	Parry, J. W., C. E., ASSOC. M. I. C. E., Asst. Engineer. <i>Nundial, via Cuddapah, Madras.</i>	
1862 May 7.	L.M.	Partridge, Surgeon-Major Samuel Bowen, M. D. <i>Europe.</i>	
1871 Dec. 6.	N.R.	Peal, S. E. <i>Sibsagar, Assam.</i>	
1860 Feb. 1.	F.M.	Pearse, Major-General G. G., C. B., R. H. A. <i>Europe.</i>	
1873 Aug. 6.	R.	Pedler, Alexander, F. C. S., Professor of Chemistry, Presidency College. <i>Calcutta.</i>	
1864 Mar. 2.	N.S.	Pellow, Fleetwood Hugo, C. S. Offg. Commissioner. <i>Europe.</i>	
1865 Sept. 6.	N.R.	Peppé, T. F. <i>Arrah.</i>	
1881 Aug. 25.	R.	Percival, Hugh Melville, M. A., Professor, Presidency College. <i>Calcutta.</i>	
1883 Jan. 3.	N.R.	Plowden, Major Trevor C. <i>Simla.</i>	
1877 Aug. 1.	N.R.	Peters, C. T., M. B., Surgeon-Major. <i>Bombay.</i>	
1868 May 6.	R.	Peterson, F. W., F. C. S., <i>H. M.'s Mint. Calcutta.</i>	
1835 July 1.	N.S.	Phayre, Sir Arthur Purves, K. C. S. I., C. B. <i>Europe.</i>	
1872 Dec. 4.	R.	Pránánáth Sarasvati, Pandit, M. A., B. L. <i>Bhowanipur.</i>	
1830 June 2.	N.R.	Prasad Sinh, Thakur Garuradhawaya, Raja of Beswan. <i>Beswan Fort, Aligarh.</i>	
1877 Aug. 30.	N.R.	Pratapnarayan Singha, Depy. Magte. <i>Bankura.</i>	
1881 Feb. 2.	R.	Prideaux, Major William Francis, B. S. C. <i>Calcutta.</i>	
1880 April 7.	R.	Rai, Bipina Chandra, B. L. <i>Calcutta.</i>	
1877 May 2.	N.S.	Ravenshaw, Thomas Edw., C. S. <i>Europe.</i>	
1877 Aug. 1.	N.R.	Rees, J. C., Asst. Engr., P. W. D. <i>Thonzai, British Burmah.</i>	
1871 July 5.	N.R.	Reid, James Robert, C. S., Collector. <i>Bareilly, Rohilcund.</i>	
1881 Mar. 2.	R.	Reynolds, The Hon'ble Herbert John, B. A., C. S. <i>Calcutta.</i>	
1880 Aug. 4.	N.R.	Reynolds, Herbert William Ward, C. S. <i>Allahabad.</i>	
1884 Mar. 5.	N.R.	Risley, H. H., B. A., C. S., Depy. Comr. <i>Mambhoom.</i>	
1860 Jan. 3.	N.R.	Rivett-Carnac, John Henry, C. S., C. I. E., F. S. A., Opium Agent. <i>Ghazipur.</i>	
1878 Sept. 25.	R.	Robertson, Rev. J. <i>Calcutta.</i>	
1865 Feb. 1.	N.S.	Robinson, S. H. <i>Europe.</i>	
1881 Aug. 30.	R.	Roy, Nanda Kumar. <i>Calcutta.</i>	
1880 Sept. 30.	N.R.	Sage, E. M., Asst. Engineer, P. W. D. <i>Tavoy, British Burmah.</i>	
1877 May 2.	N.R.	Sandford, W., Rajputana-Malwa Railway. <i>Ajmere, Rajputana.</i>	
1870 May 4.	R.	Schlich, Dr. W. <i>Calcutta.</i>	
1884 April 2.	N.R.	Scotland, John Parry, C. E., Ex. Engineer. <i>Buzar.</i>	
1874 July 1.	R.	Scully, Dr. John. <i>H. M.'s Mint, Calcutta.</i>	
1878 Mar. 6.	R.	Sen, Adharlal, B. A. <i>Calcutta.</i>	
1874 Dec. 2.	N.R.	Sen, Dr. Rám Dás. <i>Berhampur.</i>	
1882 June 7.	F.M.	Senart, Emile, Membre de l'Institut de France. <i>Paris.</i>	

Date of Election.		
1882 Aug. 2.	R.	Serajul Islam, Maulavi. <i>Calcutta.</i>
1879 Jan. 8.	N.R.	Sewell, R., M. C. S. <i>Madras.</i>
1878 May 2.	R.	Sharpe, C. J. <i>Calcutta.</i>
1879 May 7.	N.S.	Sheridan, C. J., C. E. <i>Europe.</i>
1881 Mar. 2.	N.R.	Shopland, E. R., Indian Marine, Port Officer. <i>Akyab.</i>
1882 May 3.	N.R.	Shyamaldass, Kavirāja, Private Secy. to H. H. the Mahāráná of Udaipur. <i>Udaipur.</i>
1878 April 3.	R.	Simson, A. <i>Calcutta.</i>
1867 April 3.	R.	Sirkár, Dr. Mahendralála. <i>Calcutta.</i>
1872 Aug. 5.	N.S.	Skrefsrud, Rev. L. O., Indian Home Mission to the Santháls. <i>Europe.</i>
1864 Sept. 7.	N.R.	Sladen, Col. E. B., M. S. C. <i>Akyab.</i>
1874 June 3.	N.R.	Smith, Vincent Arthur, C. S., Settlement Officer. <i>Basti, N.-W. P.</i>
1872 July 3.	N.R.	Stephen, Carr, B. L., Judl. Asst. Commr. <i>Ludianah.</i>
1879 Oct. 2.	N.S.	Sterndale, R. A., F. R. G. S., Asst. Commr. of Currency. <i>Europe.</i>
1882 May 3.	R.	Stewart, H. E. Sir Donald M., Bart., G. C. B., G. C. S. I., Commander-in-Chief. <i>Calcutta.</i>
1878 July 3.	N.R.	St. Barbe, H. L., C. S. <i>Bassein, British Burmah.</i>
1876 Aug. 2.	N.R.	St. John, Lieut.-Col. Sir Oliver Beauchamp, B. E., K. C. S. I., Officer on special duty. <i>Kashmir.</i>
1880 Nov. 3.	N.R.	Sturt, Lieut. Robert Ramsay Napier, B. S. C., Panjab Frontier Force. <i>Kohar.</i>
1884 Mar. 5.	N.R.	Swinhoe, Lieut.-Col. C., B. S. C., Asst. Comy. Genl. <i>Bombay.</i>
1864 Aug. 11.	R.	Swinhoe, W., Attorney-at-Law. <i>Calcutta.</i>
1880 Nov. 3.	N.R.	Swynnerton, Rev. Charles. <i>Naushera.</i>
1880 June 2.	N.S.	Sykes, John Gastrell, LL. B., Barrister-at-Law and Advocate, High Court, N. W. P. <i>Europe.</i>
1868 June 3.	R.	Tagore, The Hon'ble Mahārájá Jotendra Mohun, K. C. S. I. <i>Calcutta.</i>
1865 Sept. 6.	N.S.	Tawney, C. H., M. A., Principal, Presidency College. <i>Europe.</i>
1874 Mar. 4.	N.S.	Taylor, Commander A. D., late Indian Navy. <i>Europe.</i>
1884 May 5.	N.R.	Taylor, W. C., Settlement Officer, Khurda. <i>Orissa.</i>
1860 May 2.	N.S.	Temple, Sir R., Bart., K. C. S. I., C. I. E., B. C. S. <i>Europe.</i>
1878 June 5.	N.R.	Temple, Capt., R. C., S. C. <i>Ambala.</i>
1876 Feb. 2.	R.	Tennant, Major-General James Francis, B. E., F. R. S., C. I. E., Mint Master. <i>Europe.</i>
1875 June 2.	N.R.	Thibaut, Dr. G., Professor, Sanskrit College. <i>Benares.</i>
1869 Oct. 6.	N.R.	Thomson, A., The College. <i>Agra.</i>
1875 Nov. 3.	N.R.	Thomson, Robert George, C. S., Asst. Comr. <i>Jhelum, Panjab.</i>
1847 June 2.	L.M.	Thuillier, Major-Genl. Sir Henry Edward Landor, B. A., C. S. I., F. R. S. <i>Europe.</i>

Date of Election.		
1883 June 6.	N.R.	Token, Lieut.-Col. Alliston Champion, B. S. C., 18th N. I. <i>Dinapoor.</i>
1871 April 5.	F.M.	Treffitz, Oscar. <i>Europe.</i>
1861 June 5.	L.M.	Tremlett, James Dyer, M. B., C. S., Commissioner. <i>Delhi.</i>
1884 Mar. 5.	R.	Trevor, the Hon'ble Col. S. T., R. E., Chief Engr. and Secy. to Govt. of Bengal, P. W. D. <i>Calcutta.</i>
1872 July 3.	R.	Trevor, Colonel William Spottiswoode, R. E. with the Supreme Govt. <i>Calcutta.</i>
1880 Mar. 3.	N.R.	Tufnell, Lieut. R. H. C., 30th M. N. I. <i>Madras.</i>
1863 May 6.	N.R.	Tyler, J. W., M. D., F. R. C. S., Supdt., Central Prison. <i>Agra.</i>
1865 Nov. 1.	R.	Waldie, David, F. C. S. <i>Calcutta.</i>
1865 May 3.	R.	Waterhouse, Major James, B. S. C., Dy. Supdt., Survey of India. <i>Calcutta.</i>
1874 July 1.	R.	Watt, Dr. George. <i>Calcutta.</i>
1876 Dec. 6.	R.	Webb, W. T., M. A., Professor, Presidency College. <i>Calcutta.</i>
1879 Mar. 5.	N.R.	Weekes, A., C. S., Magistrate and Collector. <i>Purneah.</i>
1869 Sept. 1.	R.	Westland, James, C. S., Comptroller-General. <i>Calcutta.</i>
1867 Feb. 6.	R.	Westmacott, Edward Vesey, B. A., C. S. <i>Calcutta.</i>
1875 Feb. 3.	N.R.	Whiteway, Richard Stephen, C. S., Settlement Officer. <i>Ajmere and Merwara.</i>
1878 Aug. 29.	N.S.	Whittall, R., Forest Dept. <i>Europe.</i>
1873 May 7.	N.R.	Williams, George Robert Carlisle, B. A., C. S., Depy. Commissioner. <i>Jhansi.</i>
1880 Feb. 4.	N.S.	Wilson, The Hon. Arthur. <i>Europe.</i>
1870 Aug. 3.	N.R.	Wilson, Robert Henry, B. A., C. S. <i>Calcutta.</i>
1878 Mar. 6.	N.R.	Wilson, J., C. S. <i>Gurgaon, Punjab.</i>
1866 Mar. 7.	L.M.	Wise, Dr. J. E. N. <i>Rostellan, County Cork, Ireland.</i>
1870 Jan. 5.	N.S.	Wood-Mason, James. <i>Calcutta.</i>
1873 Aug. 6.	N.R.	Woodthorpe, Lieut.-Col. Robert Gossett, R. E., Asst. Supdt., Survey of India. <i>Camp vid Dibrugarh, Upper Assam.</i>

SPECIAL HONORARY CENTENARY MEMBERS.

Date of Election.	
1884 Jan. 15.	James Prescott Joule, Esq., LL. D., F. R. S. <i>Manchester.</i>
1884 Jan. 15.	Dr. Ernst Hæckel, 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, <i>Paris.</i>
1884 Jan. 15.	Monier Williams, Esq., Boden Prof. of Sanskrit, <i>Oxford.</i>

HONORARY MEMBERS.

1847 Nov. 3.	His Highness the Nawáb Nazim of Bengal. <i>Europe.</i>
1848 Feb. 2.	Sir J. D. Hooker, K. C. S. I., C. B., M. D., D. C. L., F. R. S. F. G. S. <i>Kew.</i>
1853 April 6.	Major-General H. C. Rawlinson, K. C. B., D. C. L., F. R. S. <i>London.</i>
1858 July 6.	B. H. Hodgson. <i>Europe.</i>
1860 Mar. 7.	Professor Max Müller. <i>Oxford.</i>
1860 Nov. 7.	Edward Thomas, F. R. S. <i>London.</i>
1860 Nov. 7.	Dr. Aloys Sprenger. <i>Heidelberg.</i>
1860 Nov. 7.	Dr. Albrecht Weber. <i>Berlin.</i>
1868 Feb. 5.	General A. Cunningham, C. S. I. <i>India.</i>
1868 Feb. 5.	Professor Bápu Deva Sástri. <i>Benares.</i>
1868 Sept. 2.	A. Grote. <i>London.</i>
1872 May 1.	Sir G. B. Airy, K. C. B., M. A., D. C. L., LL. D., F. R. S. <i>London.</i>
1872 June 5.	Prof. T. H. Huxley, LL. D., PH. D., F. R. S., F. G. S., F. Z. S., F. L. S. <i>London.</i>
1875 Nov. 3.	Dr. O. Böhtlingk. <i>Jena.</i>
1875 Nov. 3.	Prof. J. O. Westwood. <i>Oxford.</i>
1876 April 5.	Col. H. Yule, R. E., C. B. <i>London.</i>
1876 April 5.	Dr. Werner 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>
1870 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. F. Helmholtz. <i>Berlin.</i>
1881 Dec. 7.	Dr. Rudolph v. Roth. <i>Tübingen.</i>
1881 Dec. 7.	Sir William Thomson, Knt., LL. D., F. R. S., F. R. S. E. <i>Glasgow.</i>
1881 Dec. 7.	Professor William Wright, LL. D. <i>Cambridge.</i>
1883 Feb. 7.	W. T. Blanford, A. R. S. M., F. R. S., F. G. S., F. E. G. S. <i>London.</i>
1883 Feb. 7.	Alfred Russell Wallace, F. L. S., F. E. G. S. <i>Godalming.</i>
1883 Feb. 7.	Prof. William Dwight Whitney. <i>Newhaven, Connecticut,</i> <i>U. S.</i>

CORRESPONDING MEMBERS.

Date of Election.		
1844	Oct. 2.	Macgowan, Dr. J. <i>Europe.</i>
1856	July 2.	Krämer, A. von. <i>Alexandria.</i>
1856	„ 2.	Porter, Rev. J. <i>Damascus.</i>
1856	„ 2.	Smith, Dr. E. <i>Beyrout.</i>
1856	„ 2.	Taylor, J., Esq. <i>Bussorah.</i>
1857	Mar. 4.	Nietner, J., Esq. <i>Ceylon.</i>
1858	„ 3.	Schlagintweit, R. von. <i>Giessen.</i>
1859	Nov. 2.	Frederick, Dr. H. <i>Batavia.</i>
1860	Feb. 1.	Baker, The Rev. H. <i>E. Malabar.</i>
1861	July 3.	Gösche, Dr. R.
1862	Mar. 3.	Murray, A., Esq. <i>London.</i>
1863	July 4.	Barnes, R. H., Esq. <i>Ceylon.</i>
1866	May 7.	Schlagintweit, Prof. E. von. <i>Berlin.</i>
1868	„ 5.	Holmböe, Prof. <i>Christiana.</i>

ASSOCIATE MEMBERS.

1865	May 3.	Dall, Rev. C. H. <i>Calcutta.</i>
1874	Feb. 4.	Schaumburgh, J., Esq. <i>Calcutta.</i>
1874	April 1.	Lafont, Rev. Fr. E., s. J., c. i. e. <i>Calcutta.</i>
1884	Aug. 6.	F. Moore, F. R. S., F. L. S. <i>London.</i>
1875	Dec. 1.	Bate, Rev. J. D. <i>Allahabad.</i>
1875	„ 1.	Maulavi Abdul Hai, <i>Madrasah. Calcutta.</i>
1882	June 7.	Giles, Herbert, Esq. <i>Europe.</i>
1883	Feb. 7.	Rodgers, C. J. <i>Amritsar.</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 :

G. W. Allen, Esq., c. i. e.
J. Low, Esq.
T. E. Ravenshaw, c. s.

LOSS OF MEMBERS DURING 1884.

BY RETIREMENT.

H. O. Levinge, Esq., c. s.
 C. Robertson, Esq., c. s.
 Dr. W. K. Waller.
 Col. J. Sconce.
 T. Blissett, Esq.
 R. Maconachie, Esq.
 Major J. Van Someren.
 Lieut.-General J. T. Walker.
 Hon'ble J. O'Kinealy.
 A. J. L. Cappel, Esq.
 W. G. Olpherts, Esq.
 J. C. Parker, Esq.
 Hon'ble H. T. Prinsep.
 Syud Amir Hussein, Khan Bahadur.
 Babu Ramkrishna.
 R. R. Pope, Esq.
 Monsieur E. Van Eetvelde.

BY DEATH.

Ordinary Members.

Sir E. C. Bayley.
 Dr. H. W. McCann, (*late General Secretary*).
 J. B. Chalmers, Esq.
 R. Pawsey, Esq.

BY REMOVAL.

Under Rule 40.

R. M. Adam, Esq.
 Major J. Herschell.
 Sir L. S. Jackson.
 F. Jones, Esq.
 Sir J. Strachey.

[APPENDIX.]

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR
THE YEAR 1884.

STATEMENT

Asiatic Society

Dr.

To ESTABLISHMENT.							
Salaries	...	...	...	Rs.	4,171	13	9
Commission	...	...	...	...	333	3	10
Pension	...	...	...	...	18	0	0
					4,523	1	7
To FURNITURE.							
An office timepiece	...	...	...	...	67	8	0
					67	8	0
To CONTINGENCIES.							
Centenary Dinner	...	...	...	...	909	6	0
Stationery	...	...	...	...	206	9	9
Lighting	...	...	...	...	93	8	0
Building	...	...	...	...	902	8	0
Taxes	...	...	...	...	720	0	0
Postage	...	...	...	...	599	11	0
Freight	...	...	...	...	18	0	0
Meetings	...	...	...	...	93	8	0
Miscellaneous	...	...	...	...	225	11	9
					3,768	14	6
To LIBRARY AND COLLECTIONS.							
Books	...	...	...	...	1,497	7	4
Local Periodicals	...	...	...	...	96	1	0
Binding	...	...	...	...	409	12	0
Coins	...	...	...	...	139	12	0
Catalogue	...	...	...	...	1,383	0	0
					3,526	0	4
To PUBLICATIONS.							
Centenary Review	...	...	...	...	941	8	9
Journal, Part I	...	...	...	...	2,312	14	0
Journal, Part II	...	...	...	...	1,514	9	9
Proceedings	...	...	...	...	1,306	0	3
					6,075	0	9
To Printing charges of circulars, receipts, forms, &c.					145	12	0
To PERSONAL ACCOUNTS (Writes off and Miscellaneous)					.....	527	6
To Balance	...	...	...	.....	1,42,957	9	5
Total Rs.	...				1,61,591	4	7

No. 1.
of Bengal.

				Cr.		
By Balance from last Report	...	...	.....	Rs. 1,43,083	15	0
 BY CASH RECEIPTS.						
Publications sold for Cash	...	...	...	1,232	10	5
Interest on Investments ...	...	...	...	6,211	2	3
Advances recovered	...	...	...	4	7	0
Miscellaneous ...	...	...	...	443	6	1
				7,891	9	9
 BY PERSONAL ACCOUNT.						
Admission fees ...	...	...	...	816	0	0
Subscriptions ...	...	...	...	9,126	0	0
Sales on credit,...	...	...	...	448	0	0
Miscellaneous, ...	...	...	...	225	11	10
				10,615	11	10
Total Income ...				.....	18,507	5 7

Total Rs. ... 1,61,591 4 7

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

E. F. T. ATKINSON, }
J. C. DOUGLAS, } Auditors.

STATEMENT
Oriental Publication Fund in Account

Dr.

To CASH EXPENDITURE.					
Printing charges	...	...	...	...	Rs. 5,867 15 0
Editing charges	...	...	...	...	3,318 14 0
Salaries	...	...	...	...	1,221 8 0
Advertizing	...	...	...	...	120 0 0
Binding	...	...	...	...	21 4 0
Freight	...	...	...	...	17 0 0
Stationery	...	...	...	...	7 4 0
Postage	...	...	...	...	275 5 8
Contingencies	...	...	...	...	29 3 0
Commission on collecting Bills	...	...	...	...	13 9 6
					10,891 14 9
To PERSONAL ACCOUNT (Writes off and Miscellaneous)	...				11 4 0
				Total Expenditure	10,903 2 9
				To Balance	..... 21,408 13 8
					Total Rs. ... 32,312 0 5

No. 2.

*with the Asiatic Society of Bengal.***Cr.**

By Balance from last Report Rs. 18,968 1 5

BY CASH RECEIPTS.

Government Allowances	...	...	...	Rs. 9,000 0 0
Publications sold for Cash	...	...	...	1,698 7 3
Advances recovered	...	...	...	52 4 6
Interest on Investments	...	...	...	789 11 6

11,540 7 3

BY PERSONAL ACCOUNT.

Sales on credit	...	...	...	...	1,758 13 9
Miscellaneous	...	...	...	...	44 10 0

1,803 7 9

Total Income 13,343 15 0

Total Rs. ... 32,312 0 5

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

E. F. T. ATKINSON, } *Auditors.*
J. C. DOUGLAS, }

STATEMENT
Sanskrit Manuscript Fund in Account

Dr.

To CASH EXPENDITURE.

Salaries	Rs.	1,507	0	0
Travelling expenses		158	5	6
Printing		1,062	2	0
Copying		105	5	9
Stationery		20	0	0
Postage		71	2	0
Freight		5	0	0
Commission		7	3	0
Contingencies		243	5	3
Purchase of MSS.		484	10	0
Binding		80	12	0
Total Expenditure		3,744	13	6

Total Rs. ... 3,744 13 6

No. 3.

with the Asiatic Society of Bengal.

Cr.

By Balance from last Report	Rs.	285	13	3
---------------------------------	-------	-----	-----	----	---

BY CASH RECEIPTS.

Government Allowance ...	...	Rs.	3,200	0	0
Publications sold for Cash ...	...	...	30	12	0
Advances recovered ...	...	...	0	15	6
Interest on Investments ...	...	...	0	10	3
			<hr/>		
			3,232	5	9
			<hr/>		

BY PERSONAL ACCOUNT.

Publications sold on credit ...	...	...	46	0	0
		Total Income	<hr/>			
			3,278	5	9	
		By Balance	180	10	6
			<hr/>			
		Total Rs. ...	3,744	13	6	
			<hr/>			

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

E. F. T. ATKINSON, }
 J. C. DOUGLAS, } *Auditors.*

STATEMENT

Personal

Dr.

To Balance from last Report	Rs.	60 7 4
------------------------------------	-----	--------

To CASH EXPENDITURE.

Advances for purchase of Sanskrit MSS., postage of Books

to Members, &c.	Rs.	4,604 12 6
To Asiatic Society ... ..	...	10,615 11 10
To Oriental Publication Fund ... ..	...	1,803 7 9
To Sanskrit MSS. Fund ... ..	...	46 0 0
		<u>17,070 0 1</u>

Total Rs. ...	<u>17,130 7 5</u>
---------------	-------------------

No. 4.

*Account.***Cr.**

By Cash Receipts	Rs. 12,755 12 9
By Asiatic Society	527 6 0
By Oriental Publication Fund	11 4 0
	13,294 6 9

By Balances.	Due to the Society.			Due by the Society.			
Members	4,010	5	5	184	15	10	
Subscribers to publications	29	2	6	41	14	0	
Employees	30	0	0	250	0	0	
Agents	395	4	10	...	...	...
Miscellaneous	57	11	0	209	9	3	
	4,522	7	9	686	7	1	
							3,836 0 8

Total Rs. ... 17,130 7 5

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

E. F. T. ATKINSON, }
J. C. DOUGLAS, } Auditors.

STATEMENT
Invest

Dr.

	Nominal.	Actual.
To Balance from last Report	Rs. 1,58,800 0 0	1,58,279 12 9
	Rs. 1,58,800 0 0	1,58,279 12 9
Total Rs. ...	1,58,800 0 0	1,58,279 12 9

STATEMENT
Trust

Dr.

To Servants' pension		Rs. 48 0 0
To Balance (Servants' Pension Fund)		1,006 1 4
		1,054 1 4
Total Rs. ...		1,054 1 4

No. 5.

ments.

Cr.

	Nominal.	Actual.
By Balance	Rs. 1,58,800 0 0	1,58,279 12 9
Total Rs. ...	<u>1,58,800 0 0</u>	<u>1,58,279 12 9</u>

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

E. F. T. ATKINSON, } *Auditors.*
 J. C. DOUGLAS, }

No. 6.

Funds.

Cr.

By Balance from last Report	Rs. 1,014 1 4
By Interest on Investments	40 0 0
Total Rs. ...	<u>1,054 1 4</u>

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

E. F. T. ATKINSON, } *Auditors.*
 J. C. DOUGLAS, }

STATEMENT

Cash.

Dr.

To Balance from last Report	Rs.	5,011 10 11
RECEIPTS.		
To Asiatic Society	8,721 15 6	
To Oriental Publication Fund	11,540 7 3	
To Sanskrit Manuscripts Fund	3,232 5 9	
To Personal Account	12,755 12 9	
To Trust Funds	40 0 0	
	Total Rs. ...	41,302 4 2

STATEMENT

Balance

Dr.

To Cash	Rs.	3,076 0 6
To Sanskrit Manuscripts Fund	180 10 6	
To Personal Account	3,836 0 8	
To Investments	1,58,279 12 9	
	Total Rs. ...	1,65,372 8 5

No. 7.

Cr.

EXPENDITURE.

By Asiatic Society	Rs. 18,986 10 11
By Oriental Publication Fund	10,891 14 9
By Sanskrit Manuscripts Fund	3,744 13 6
By Personal Account... ..	4,604 12 6
By Trust Funds	48 0 0
By Balance	3,076 0 6

Total Rs. ... 41,302 4 2

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

E. F. T. ATKINSON, } Auditors.
J. C. DOUGLAS, }

No. 8.

Sheet.

Cr.

By Asiatic Society	Rs. 1,42,957 9 5
By Oriental Publication Fund	21,408 13 8
By Trust Fund	1,006 1 4

Total Rs. ... 1,65,372 8 5

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

E. F. T. ATKINSON, } Auditors.
J. C. DOUGLAS, }

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.

EDITED BY

THE HONORARY SECRETARIES.

JANUARY TO DECEMBER,
1886.

CALCUTTA :

PRINTED BY J. W. THOMAS, BAPTIST MISSION PRESS,
AND PUBLISHED BY THE
ASIATIC SOCIETY, 57 PARK STREET.

1887.

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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JANUARY, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 6th January, 1886, at 9 P. M.

D. WALDIE, Esq., F. C. S., vice-President, in the Chair.

The minutes of the last meeting were read and confirmed.

Nine presentations were announced, as detailed in the appended Library List.

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

1. A. R. Elson, Esq.
2. Col. W. B. Thomson, B. S. C.
3. Francis Carnac Barnes, Esq.
4. Saiyad Mohamad Latif Khán, Khan Bahadur.

Messrs. J. M. Douie and C. W. Marshall have intimated their wish to withdraw from the Society.

The CHAIRMAN announced that in accordance with Rule 38 of the Society's Bye-Laws, the names of the following gentlemen had been posted up as defaulting members since the last monthly general meeting, and will now be removed from the Member List, and that the fact will be published in the Proceedings.

1. T. Blissett, Esq.
2. Babu Bhairub Chunder Chatterji.
3. Capt. L. A. C. Cook.
4. Babu Sib Chunder Nag.
5. Babu Protap Narain Sing.
6. J. C. Rees, Esq.
7. G. R. C. Williams, Esq.

The PHILOLOGICAL SECRETARY read Reports on 4 finds of ancient coins, viz. :—

I. Report on 15 old silver coins forwarded by the Deputy Commissioner of Jhelam district with his No. 379, Rev. Dept., dated 6th June 1885.

1. The find-place is not stated. It is desirable, as a rule, to supply this information. The coins number 15 and are all silver Rupees.

2. The coins are all of Moghul Sultáns of Delhi, though their names are not quite correctly given in the forwarding letter. They should be as follows :

	No. of Specimens.
1, V, <i>Sháh Jehán</i> , A. H. 1037—1068 = A. D. 1627—1658 ; with illegible date (a bad specimen)	1
2, VI, <i>Aurangzáb</i> , A. H. 1068—1118 = A. D. 1658—1707 ;	
a, mint Dár us Saltánat Láhor, dates 1093, reign 31, 1117, reign [4]9 ; 1071, reign (?)	3
b, „ Dár ul Khiláfat Sháh Jehánábád, (i. e., Delhi), date 1091 (?) (bad specimens).....	2
c, „ Súrat, date 1094, reign (?), date (?), reign 37 (bad)	2
3, VIII, <i>Bahádur Sháh</i> (Sháh Alam), A. H. 1118—1124 = A. D. 1707—1712 ;	
mint Akbarábád, date illegible, reign 1.....	1
4, X, <i>Farrokh Sír</i> , A. H. 1124—1131 = A. D. 1712—1719 ; mint Dár ul Khiláfat Sháh Jehánábád, (i. e., Delhi), date illegible, reign 2	1
5, XIII, <i>Muhammad Sháh</i> , A. H. 1131—1161 = A. D. 1719—1748 ;	
a, mint Mustaqir ul Khiláfat Akbarábád, (i. e., Agra), dates 1143, reign 12, and 11[48], reign 17	2
b, „ Dár us Saltánat Láhor, dates 115[7], reign 26, 11[37], reign 6.....	2
c, „ Murshidábád, date [1133], reign 2	1
	—
	Total... 15
	—

3. The intrinsic value is about 15 annas each ; the numismatic value is not more, as the coins, are in a rather indifferent condition.

II. Report on 13 silver coins forwarded by the Collector of Bhagulpur with his No. 531, G, dated 1st June 1885.

1. The find-place is not stated. The coins number 13,—not 9, as stated in the forwarding letter.
2. They are Rupees of the following Moghul Emperors of Delhi:—

	No. of Specimens.
1, XIV, <i>Ahmed Sháh Bahádur</i> , A. H. 1161—1167 = A. D. 1748—1754; mint Azímábád; date 1166, reign 6 (triplicates).....	3
2, XV, <i>Alamgír Zání</i> , A. H. 1167—1175 = A. D. 1754 —1761; mint Azímábád; dates 1167, 1—1172, 6 (duplicate)—1173, 6.	4
3, XVI, <i>Alam Sháh</i> , A. H. 1172 = A. D. 1758; a, mint: Azímábád (Patna), dates 1183, 11— 1177, 5—[1181], 9	3
b, mint Murshidábád, dates 1184, 11 (triplicate)....	3
Total... 13	

III. Report on 15 silver coins forwarded by the Secretary to Government North West Province and Oudh with his No. $\frac{2372}{+492}$ dated Nainital, 1st June 1885.

1. The find-place is not stated. They number 15, and are all silver Rupees.
2. The coins are stated to be “struck at Benárás in the name of Sháh Alam.” This, however, is not correct, as will be seen from the following list of Sultáns and mints they are all Moghul coins :

	No. of Specimens.
1, VI, <i>Aurangzib Alamgír</i> , A. H. 1068—1118 = A. D. 1658—1707; a, mint Súrat, date 1107, reign 39 (Marsden DCCCXCVII)	1
b, ,, Etáwah, date 1117, reign 49 (Marsden DCCCXCV)	1
c, ,, Dár ul Khiláfat Sháh Jehánábád, (i. e., Delhi), date 1107, reign 40	1
d, ,, Mustaqir ul Khiláfat Akbarábád (i. e., Agra), date 1113, reign 46	1

2, VIII, <i>Bahádur Sháh</i> , A. H. 1118—1124 = A. D. 1707 — 1712 ;	
<i>a</i> , ,, Khujastah Bunyád, (<i>i. e.</i> , Aurangábád), date 1121, reign 3	1
<i>b</i> , ,, Etáwah, date 1121, reign 3	1
3, X, <i>Farrokh Sír</i> , A. H. 1124—1131 = A. D. 1712—1719 ;	
<i>a</i> , mint Dár ul Khiláfat Sháh Jehánábád, (<i>i. e.</i> , Delhi), date 1129, 6 and 1130, 7 (duplicate)	3
<i>b</i> , ,, Súrat, date 1127, reign 4	1
<i>c</i> , ,, Golkardah (?), date (?), reign 2	1
4, XIII, <i>Muhammad Sháh</i> , A. H. 1131—1161 = A. D. 1719—1748 ;	
<i>a</i> , mint Gwáliar, date 1135, reign 5, and 1137, reign 7	2
<i>b</i> , ,, Fatehpur, date 113[1], reign 1	1
<i>c</i> , ,, Korah, ,, 1137, ,, 7	1
	Total... 15

3. The intrinsic value is about one Rupee, the numismatic, from Re. 1 to Rs. 1-8 according to the age.

IV. Report on 20 old coins and 2 rings, forwarded by the Subdivisional Officer of Sásserám, with his No. 1078, dated 29th October, 1885, and his No. 896, dated 17th September, 1885.

1. The find-place is stated to be the "Subdivision of Sásserám."

2. The coins are all of impure gold; 19 are in fairly good condition for such coins, but one appears to have been melted and now forms a mere unrecognizable lump. They belong to Rájá Govinda Chandra Deva of the (so-called) Raṭor house of Kanauj, who reigned from about 1120—1144 A. D.

3. The two rings are of silver; one of them is split, the other is broken into two pieces. They are both quite plain, with the exception of a rude ornamentation, somewhat resembling a centipede extending over about one-third of the circle. They have no artistic value whatsoever.

4. On the obverse, the coins show a very rude figure, in outline, half-length, of some divinity (probably Lakshmi). The reverse bears an inscription in a slightly older form of Nágari which runs as follows: *Srí Mad-Govinda Chandra Deva*.

5. As the inscription is not equally perfect on the several coins, it will be best to allow each institution named in the Resolution of the

Government of India, to receive two coins, so selected as to make up, between them, the inscription as perfect as possible.

6. There will remain for sale by the mint 4 specimens, including the melted lump. Their intrinsic value is about Rs. 5; their numismatic, about Rs. 8.

7. The two rings may be given to the Indian Museum in Calcutta.

Read the following Circular from the Société de Physique et d'Histoire Naturelle de Genève, offering for competition a prize of 500 francs, for the best monograph of a genus or a family of plants, to be written either in Latin, French, German, English or Italian:—

PRIX

Fondé par Augustin-Pyramus de CANDOLLE pour la meilleure monographie d'un genre ou d'une famille de plantes.

Un concours est ouvert par la Société de physique et d'histoire naturelle de Genève pour la meilleure monographie inédite d'un genre ou d'une famille de plantes.

Les manuscrits peuvent être rédigés en latin, français, allemand (écrit en lettres latines), anglais ou italien. Ils doivent être adressés, franco, avant le 1^{er} octobre 1889, à M. le président de la Société de physique et d'histoire naturelle de Genève, à l'Athénée, Genève (Suisse).

Les membres de la Société ne sont pas admis à concourir.

Le prix est de 500 francs.

Il peut être réduit ou n'être pas adjugé dans le cas de travaux insuffisants ou qui ne répondraient pas aux conditions du présent avis.

La Société espère pouvoir accorder une place au travail couronné, dans la collection de ses *Mémoires in-4^o*, si ce mode de publication est agréable à l'auteur.

Genève, juillet, 1885.

The following papers were read:

1. *The Hive-Bees indigenous to India and the introduction of the Italian Bee.*—By J. C. DOUGLAS, Esq.

(Abstract.)

In this paper, Mr. Douglas gives an interesting account of a series of laborious experiments made by him for a number of years to hive the indigenous bee (*Apis indica*). The paper contains a description of the several species which he used for his experiments, and the results which he arrived at, which latter were not uniformly successful. He also gives an account of the attempts which he made for the introduction and acclimatisation of the Italian bee.

The paper will be published in full in Journal, Part II of 1886.

2. *On a Uredine affecting the Himalayan Spruce-fir, Abies smithiana.*—By DR. A. BARCLAY.

(Abstract.)

In this paper Dr. Barclay gives an account of a conspicuous parasite by which many fir trees in the Western Himalayas are attacked. It occurs in great abundance throughout the forests of the Sutlej valley at elevations of from 7000 to 10,000 feet. The author has no data by which to limit the season during which the parasite is outwardly recognisable. He met with it throughout May, and he believes that it disappears entirely during the rains in July. He met with the parasite in two forms, which for convenience, he describes as the æcidial and uredinal, but whether they do really stand in this relationship to each other, he has no experimental evidence to determine, though from other circumstances such a relationship appears probable. Detailed particulars of those two forms of affection are given in this paper which will be published in full in Journal Part II for 1886.

LIBRARY.

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

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VII, No. 3, October, 1885.

———. ————. Circulars, Vols. IV, No. 42; V, Nos. 43 and 44.

———. ————. Studies from the Biological Laboratory, Vol. III, No. 4.

Batavia. Observations made at the Magnetical and Meteorological Observatory, Vol. VI, Part 2.

Berlin. K. Akademie der Wissenschaften,—Abhandlungen, 1884.

Birmingham. Philosophical Society,—Proceedings, Vol. IV, Part 2.

Brussels. Société Malacologique,—Annales, Vol. XV, No. 1.

———. Société Royale Malacologique,—Annales, Vol. XIX.

———. Procès-Verbaux des Séances, Vol. XIV.

Buenos Aires. Academia Nacional de Ciencias,—Actas, Vol. V, Nos. 1 and 2.

- Calcutta. Geological Survey of India,—Memoirs, *Palæontologia Indica*, Ser. XIV, Vol. I, No. 5.
- . *Indian Medical Gazette*,—Vol. XX, No. 12, December, 1885.
- . *Original Meteorological Observations*, June to August, 1885.
- Florence. *Archivio per L'Antropologia e la Etnologia*,—Vol. XV, No. 2.
- . *Società Africana D'Italia*,—*Bullettino*, Vol. I, No. 5.
- Havre. *Société de Géographie Commerciale*,—*Bulletin*, No. 4, 1885.
- Helsingfors. *Societatis Scientiarum Fennicæ Acta*, Vol. XIV.
- . ————. *Bidrag*, Nos. 39—42.
- . ————. *Öfversigt, Förhandlingar*, Vol. XXVI.
- Lahore. *Anjuman-i-Punjab*,—*Journal*, Vol. V, Nos. 47—51.
- Leipzig. *Deutsche Morgenländische Gesellschaft*,—*Zeitschrift*, Vol. XXXIX, No. 3.
- London. *Academy*,—Nos. 706—710.
- . *Athenæum*,—Nos. 3029—3033.
- . *Nature*,—Vol. XXXIII, Nos. 837—841 and Index to Vol. XXXII.
- Moscow. *Société Impériale des Naturalistes*,—*Bulletin*, No. 4, 1883; Nos. 1—3, 1884.
- . ————. *Nouveaux Mémoires*, Vol. XV, No. 1.
- Paris. *Annales de Chimie et de Physique*,—Index to Vols. I—XXX.
- . *Société de Géographie*,—*Compte Rendu des Séances*, Nos. 16—18, 1885.
- Philadelphia. *Academy of Natural Sciences*,—*Proceedings*, Part 2, 1885.
- . *American Philosophical Society*,—*Proceedings*, Vols. XXI, No. 116; XXII, Nos. 117—119.
- . ————. *Register of papers published in the Transactions and Proceedings*.
- Pisa. *Società Toscana di Scienze Naturali*,—*Atti*, Vol. VI, No. 2.
- Rome. *Società Degli spettroscopisti Italiani*,—*Memorie*, Vol. XIV, No. 9, September, 1885.
- Roorkee. *Professional papers on Indian Engineering*,—Vol. III (3rd Series), No. 11, November, 1885.
- Schaffhausen. *Société Entomologique Suisse*,—*Bulletin*, Vol. VII, Nos. 2—4.
- St. Petersburg. *Académie Impériale des Sciences*,—*Bulletin*, Vols. XXIX, No. 4; XXX, No. 1.
- . ————. *Mémoires*, Vol. XXXIII, No. 13.
- . *Comité Géologique*,—*Mémoires*, Vols. I, No. 4; II, No. 2; III, No. 1.
- . ————. *Proceedings*, Vol. VI, Nos. 6 and 7.

- St. Petersburg. Russian Geographical Society,—Proceedings, Vol. XXI, Nos. 4 and 5.
- Vienna. Anthropologische Gesellschaft,—Mittheilungen, Vol. XIV, Nos. 2—4.
- . K. K. Zoologisch-botanische Gesellschaft,—Personen, Ort und Sach-Register, 1871-1880.
- . ———. Verhandlungen, Vol. XXXIV.
- Washington. United States Geological Survey,—Bulletin, Nos. 2—6.
- Yokohama. Asiatic Society of Japan,—Transactions, Vol. XIII, Part 2.
- Zagreb. Arkeologickoga Druzstva,—Viestnik, Vol. VII, No. 4.

MISCELLANEOUS PRESENTATIONS.

Report on the Australian Museum, New South Wales for 1885. Fcp. Sydney, 1885.

AUSTRALIAN MUSEUM.

Report on the Administration of the Central Provinces for the year 1884-85. Fcp. Nagpur, 1885.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Existing Land Laws of the United States. 8vo. Washington, 1884.

Land Laws of the United States, Local and Temporary. 8vo. Washington, 1884.

The Public Domain. Its History, with Statistics. 8vo. Washington, 1884.

DEPARTMENT OF THE INTERIOR, UNITED STATES.

Bihar Peasant Life, being a Discursive Catalogue of the surroundings of the people of that Province. 8vo. Calcutta, 1885.

Report of the Administration of the Customs Department in the Bengal Presidency for the official year 1884-85. Fcp. Calcutta, 1885.

Returns of the Rail Borne Traffic of Bengal for the quarter ending 30th June, 1885. Fcp. Calcutta, 1885.

The Flora of British India, Vol. IV, by Sir J. D. Hooker. 8vo. London, 1885.

GOVERNMENT OF BENGAL.

A Compendium of the Castes and Tribes found in India, by E. J. Kitts, B. C. S. Fcp. Bombay, 1885.

Ancient India, as described by Ptolemy, by J. W. McCrindle. 8vo. Bombay, 1885.

GOVERNMENT OF BOMBAY.

Report on the Government Botanical Gardens of Saharanpur and Mussoorie. Fcp. Allahabad, 1885.

GOVERNMENT OF NORTH WEST PROVINCES.

- Correspondence between the Government of India and the Secretary of State for India, relating to the age at which Candidates for the Civil Service of India are admitted for competition in England. Fcp. London, 1885.
- Statement exhibiting the Moral and Material Progress and condition of India during the year 1882-83. Fcp. London, 1885.
- Statistical Abstract relating to British India from 1874-75 to 1883-84. No. 19. 8vo. London, 1885.

INDIA OFFICE, LONDON.

- International Meteorological Observations, September, 1884. 4to. Washington, 1885.
- Monthly Weather Review, September, 1885. 4to. Washington, 1885.
- METEOR. REPORTER TO THE GOVT. OF INDIA.
- Historical Sketch of Geological Explorations in Pennsylvania and other States, by J. P. Lesley. 8vo. Harrisburg, 1876.
- SECOND GEOLOGICAL SURVEY OF PENNSYLVANIA.
- Tide Tables for the River Hooghly for 1886. Sheet, Calcutta, 1885.
- Tide Tables for the River Hooghly for 1886. Signals, Lights, Port Rules, &c., &c. 8vo. Calcutta, 1885.

TIDAL OPERATIONS—SURVEY OF INDIA.

PERIODICALS PURCHASED.

- Allahabad. Punjab Notes and Queries,—Vol. III, No. 26, November, 1885.
- Berlin. Deutsche Litteraturzeitung,—Vol. VI, Nos. 37 and 38.
- Cassel. Botanisches Centralblatt,—Vol. XXIII, Nos. 10—12.
- Geneva. Archives des Sciences Physiques et Naturelles,—Vol. XIV, No. 11.
- Göttingen. Gelehrte Anzeigen,—No. 18, 1885.
- . Nachrichten,—No. 7, 1885.
- Leipzig. Annalen der Physik und Chemie,—Vol. XXVI, No. 3.
- . ———. Beiblätter,—Vol. IX, Nos. 10 and 11.
- . Hesperos,—Vol. IV, Nos. 99—105.
- . Literarisches Centralblatt,—Nos. 38 and 39, 1885.
- London. Chemical News,—Vol. LII, Nos. 1355—1359.
- . Journal of Botany, Vol. XXIII, No. 275, November, 1885.
- . Journal of Conchology,—Vol. IV, No. 12, October, 1885.
- . Journal of Science,—Vol. VII (3rd Series), Nos. 143 and 144, November and December, 1885.
- . Messenger of Mathematics,—Vol. XV, No. 4, August, 1885.
- . Nineteenth Century,—Vol. XVIII, No. 106, December, 1885.
- . Numismatic Society,—Anniversary address, June 18, 1885.

- London. Publishers' Circular,—Vol. XLVIII, Nos. 1156 and 1157.
——. Society of Arts,—Journal, Vols. XXXIII, No. 1721; XXXIV,
Nos. 1722—1725.
- Paris. Académie des Sciences,—Comptes Rendus des Séances, Vol. CI,
Nos. 10 and 11.
——. Revue Critique,—Vol. XX, Nos. 37 and 38.
——. Revue des Deux Mondes,—Vol. LXXII, Nos. 2 and 3.
——. Revue Scientifique,—Vol. XXXVI, Nos. 11 and 12.
- Vienna. Orientalische Museum,—Oesterreichische Monatsschrift für
den Orient,—Vol. XI, No. 11.
-

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR FEBRUARY, 1886.

The Annual Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd February, 1886, at 9 P. M.

DR. RÁJENDRALÁLA MITRA, C. I. E., President in the Chair.

According to the Bye-Laws of the Society, the President ordered the voting papers to be distributed for the election of Officers and Members of Council for 1886; and appointed Messrs. Gay and Wood-Mason, Scrutineers.

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

ANNUAL REPORT FOR 1885.

The Council of the Asiatic Society of Bengal 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 27 gentlemen were elected Ordinary Members of the Society, 16 Members withdrew, 3 died, 2 were removed from the List in accordance with Rule 37, and 2 in accordance with Rule 40; the result showing a net gain of 4 Members to the Society. The total number of Members, therefore, at the close of 1885 was 330 against 326 at the end of the preceding year. Of these, 105 are Resident, 161 Non-Resident, 13 Foreign, 16 Life, and 35 Non-Subscribing members, as will be seen from the following Table, which also shows the fluctuations in the number of Ordinary Members for the past 6 years.

Year.	PAYING.			NON-PAYING.			Grand Total.	
	Resident.	Non-Resident.	Foreign.	Total.	Life.	Absent.		Total.
1880	112	185	15	312	14	30	44	356
1881	110	168	17	295	14	41	55	356
1882	101	155	18	274	15	48	63	337
1883	100	142	18	266	15	48	63	323
1884	102	157	12	271	15	40	55	326
1885	105	161	13	279	16	35	51	330

The 3 Ordinary Members who died during the year, were Babu Adharlal Sen, Mr. J. F. Browne and Rajah Satyanand Ghosal.

An Associate Member was elected during the year, Dr. A. Führer, in recognition of his contributions to Indian Antiquities and Archæology.

During the year, one member, Mr. Henry Baden-Powell, compounded for his future subscriptions.

Indian Museum.

No transfers of presentations to the Society were made to the Indian Museum in 1885.

A vacancy in the office of Trustee having occurred by the election of Major J. Waterhouse as a Trustee on behalf of the Museum, Mr. H. F. Blanford was appointed to replace him as a Trustee on behalf of the Society.

Finance.

The accounts of the Asiatic Society are shown in the Appendix, under the usual heads.

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

The Budget for the past year was estimated at the following figures : Receipts Rs. 15,100 ; Expenditure Rs. 14,378.

The Actuals were found to be: Receipts Rs. 14,213-8-6 ; Expenditure Rs. 15,501-7-11.

The Receipts thus show a decrease on the Budget Estimate of Rs. 886, and the Expenditure an increase of Rs. 1,123.

The falling off in the receipts is due to the small sum collected under the heading "Sale of Periodicals." Messrs. Trübner and Co., agents for the sale of our periodicals in London, sent in their accounts for 1884, but as there were some discrepancies discovered, they were returned for adjustment. These accounts have not as yet come back to us. It will be seen also that, on the Expenditure side, under the heading Books, an amount equal to the short receipts in the sale of periodicals, has been saved by the delay in settling Messrs. Trübner's accounts.

For the partial cost of printing and publishing the Centenary Review, Rs. 2,483-6-0 were paid last year. The payment of this large item has been the cause of the excess on the expenditure side.

During the years 1884-85 large sums have been paid for extraordinary charges. Thus, in 1884 the cost of repairing and white-washing the Asiatic Society's building amounted to Rs. 902-8-0. In the same year, the Catalogue of Books in the Society's Library required the payment of Rs. 1,383 plus a bonus of Rs. 600 to the compiler. The Centenary Review was printed and published at a charge to the Society of Rs. 3,424-14-3, and this sum was paid in the years 1884-85. The present year begins, therefore, free from the heavy burdens of the past. The income estimated is based on the returns of the past year, with this difference, however, that Messrs. Trübner and Co.'s accounts for 1884-85 are included under the heading "Sale of Periodicals."

On the expenditure side, the items "Salaries", "Commission" and "Books" show an increase compared with the past year. The higher sums budgetted for under the first head are due to the annual increments of pay, which the Assistant Secretary and his Assistant, as well as the Cashier, will receive; whilst under the second (Commission), by order of the Council, the rate of commission hitherto drawn by the Cashier on sales and collections has been doubled. The increase under the heading "Books" is required to adjust Messrs. Trübner and Co.'s accounts for two years.

The Budget Estimate for 1886 is as follows :—

RECEIPTS.		Rs.	A.	P.
Subscriptions,	7,500	0 0
Sale of Periodicals,	2,000	0 0
Interest on Investments,	6,200	0 0
Miscellaneous,	200	0 0
			<hr/>	
			15,900	0 0
			<hr/>	

EXPENDITURE.

			Rs.	A.	P.
Salaries, ...	...	...	4,000	0	0
Commission,...	...	...	420	0	0
Stationery, ...	...	...	200	0	0
Lighting, ...	...	...	100	0	0
Building, ...	...	...	50	0	0
Taxes, ...	...	...	720	0	0
Postage, ...	...	...	700	0	0
Freight, ...	...	...	20	0	0
Meetings, ...	...	...	90	0	0
Contingencies,	...	...	150	0	0
Books, ...	...	...	3,000	0	0
Local Periodicals,	...	...	50	0	0
Binding, ...	...	...	500	0	0
Coins, ...	...	...	50	0	0
Journal, Part I,	2,100	0	0
" " II,	2,100	0	0
Proceedings,	1,200	0	0
Printing of Circulars,	125	0	0
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			15,575	0	0
			<hr/>		

London Agency.

The statement furnished by Messrs. Trübner and Co. of their account with the Society showed a Balance of £25-19-3½ in our favour.

The number of copies of parts of the Journal, Proceedings and Bibliotheca Indica sent to Messrs. Trübner and Co. for sale was 453, 360 and 1008, respectively.

The Sales of the Society's publications effected by them during the same period amounted to £92-5-4½ and of the Bibliotheca Indica to £36-7-6.

Fifteen Invoices of Books purchased and of publications of various Societies sent in exchange were received during the year 1885. The value of books purchased amounted to £124-7-6.

Library.

The total number of volumes or parts of volumes added to the Library in 1885 was 2,013, of which 843 were purchased and 1,170 presented.

Publications.

Four Nos. of the Journal, Part I, were published during the year, containing 182 pages of letter press and 8 plates; and three Nos. of Journal, Part II, containing 182 pages of letter press and 5 plates.

Ten Nos. of the Proceedings, containing 163 pages of letter press and 3 plates, were also published.

Building.

The expenditure on the building during the year was only Rs. 19. This was spent in the stoppage of leaks.

Coin Cabinet.

The additions during 1886 were not very large, numbering altogether 69 coins. They were all acquired under the Treasure Trove Act, *viz.*, 60 in the Bengal Presidency, 6 from the Bombay Presidency, and 3 from the Madras Presidency. Not a single coin was purchased. Of the 60 coins acquired under the Treasure Trove Act in the Bengal Presidency, 14 were of copper, 13 of mixed metal, 19 of silver and 14 of gold. Detailed descriptions of these 60 coins are given in the Society's Proceedings for August, November and December 1885.

The six coins presented by the Government of Bombay consist of: 1 silver coin of Alamgir, 1 do. of Sháh Jehán, 2 do. of Aurangzib Alamgir and 2 copper coins of Gujerat. Those from the Madras Government are: 1 Viraraya gold Fanam, 1 Nagari gold Fanam and 1 old Madras gold Pagoda.

Secretary's Office.

There is no change to report in the Secretary's Office.

Mr. J. Wood-Mason and Dr. A. F. R. Hoernle have continued to act as Natural History Secretary and Philological Secretary; Messrs. F. E. Pargiter and F. W. Peterson, as General Secretary and Honorary Treasurer. During short leaves taken by Dr. Hoernle and Mr. Pargiter, Mr. J. Beames and Lt.-Col. Waterhouse officiated for them respectively.

In the beginning of the year, Mr. J. F. Duplessis was appointed Assistant Secretary, vice Mr. W. A. Bion, resigned.

Mr. J. H. Elliott has continued to hold the post of Assistant Librarian, Babu Nriya Gopal Basu that of Cashier and Babu Amritlal Dass that of Copyist.

Bibliotheca Indica.

Thirty-nine fasciculi were published during the year: ten in the Arabic-Persian Series and twenty-nine in the Sanskrit Series. They belong to nineteen different works, of which four are in the Arabic-

Persian Series and fifteen in the Sanskrit Series. Among the former there is one new publication, *viz.*, the *Zafarnámah* and in the latter seven, *viz.*, the *Sankháya Srauta Sútra*, the *Kála Mádhava*, the *Viváda Ratnákara*, the *Manu Tíká Sangraha*, the *Nárada Smṛiti*, the *Kúrma Puráṇa*, and the *Uvásagadasáo*.

In the annual report of the preceding year (p. 25) it had been estimated that 40 fasciculi would be published in the course of the ensuing year. The actual outturn has only fallen short of that estimate by one. For the year 1886 the outturn may be reckoned at 48 fasciculi. These at the average rate of Rs. 432 for each, will cost Rs. 20,736. The average income being Rs. 12,799, there will be an excess of expenditure of Rs. 7,937, which will be amply covered by the unspent balance of Rs. 20,071.

A. Arabic-Persian Series.

1. Of the *Iṣábah* or the Biographical Dictionary of persons who knew Muḥammad, three fasciculi have been published by Maulví Abdul Hai, being the eighth of the second volume, and the seventh and eighth of the third volume. It carries the list of 'male witnesses' down to No. 9124 in the middle of *Ayin* (*عبد*) and No. 1899 in the middle of *Mim* (*مسمو*), respectively.

2. Of the *Akbarnámah*, edited by Maulvi Abdur Rahím of the Calcutta Madrassa, four fasciculi have been published, continuing the history of Akbar down to the year 1004 A. H.

3. Of the annotated English Translation of the second volume of the *Muntaḥhab-ut-Tawárfih*, by the Rev. W. H. Lowe of Cambridge, the third fasciculus was published during the past year.

4. Of the *Zafarna'mah* of Maulá Sharfuddín 'Alí Yazdí the forthcoming edition of which, by Maulvi Muḥammad Ilahdád, was announced in last year's annual report, two fasciculi have been issued.

B. Sanskrit Series.

5. The joint editors, Pandits Yogeswara Smṛitiratna and Káma-khyánátha Tarkaratna, have advanced their edition of Hemádrí's *Chaturvarga Chintámani* by three fasciculi which belong to the first part of the Society's third volume, being the fifth part (or *Paríśesha Khaṇḍa*) of the work itself.

6. Pandit Satyavrata Sámaśramí has finished the second and commenced the third volume of his annotated edition of the well-known *Nirukta* glossary by the issue of five fasciculi.

7. Professor Dr. R. Garbe of Königsberg, likewise, has finished the second volume of his edition of the important *Āpastamba Srauta Sutra*,

by the issue of three fasciculi. The continuation of this work will probably be interrupted for a time, during which fresh search will be made for further manuscripts of the commentary.

8. Of the *PARÍŚIṢṬA PARVAN* or *STHAVIRÁVALI CHARITRA* by Hemachandra, a Jain work in Sanskrit verse of the first twelve *Sthaviras* or Patriarchs, Professor Dr. H. Jacobi of Kiel, has published the third fasciculus.

9. Of the *PARÁSÁRA SMṚITI* two fasciculi have been issued by Pandit Chandrakánta Tarkálankára.

10. The *MÍMÁMSÁ DARŚANA* with Savara Svámin's commentary, has been continued by Pandit Maheśachandra Nyáyaratna, Principal of the Sanskrit College, who has published another fasciculus.

11. Of the *TATTVA CHINTÁMAṆI*, Pandit Kámakhyanátha Tarkaratna has published two fasciculi.

12. Dr. Rájendralála Mitra has advanced his edition of the *VÁYU PURÁṆA* by two fasciculi.

The following are works, the publication of which was sanctioned by the Council in the course of the past year.

13. The *KÚRMA PURÁṆA*, by Pandit Nílmaṇi Mukerjea, Professor of Sanskrit in the Presidency College. The first fasciculus has been published.

14. The *VIVÁDA RATNÁKARA*, edited by Pandit Dína Nátha Vidyálankára, one of the Professors of the Sanskrit College. Two fasciculi have been published.

15. The *KÁLA MÁDHAVA*, edited by Pandit Chandrakánta Tarkálankára, a Professor of the Sanskrit College. Two fasciculi have been published.

16. The *NÁRADA SMṚITI*, edited by Professor Dr. J. Jolly of Würzburg. One fasciculus has been published.

17. The same editor has commenced the *MANU ṬÍKÁ SANGRAHA*, being extracts from various old commentaries on Manu's law-book. The first fasciculus has been issued.

18. The *ŚANKHÁYANA ŚRAUTA SÚTRA*, edited by Professor Dr. A. Hillebrandt of Breslau. Two fasciculi have been published.

19. The *UVÁSAGADASÁO*, the seventh of the Jain *Angas*, in *Prákrit*, describing the rules of conduct of a Jain layman, by Dr. A. F. Rudolf Hoernle. The edition, of which the first fasciculus has been published, contains the *Prákrit* text, the Sanskrit commentary of Abhaya Deva, and an English Translation with notes.

The following works are in a more or less forward state of publication :

1. *ṬABAQÁT-I-NÁṢIRÍ* (Index of persons and placès). 2. *LALITA*

VISTARA (English Translation). 3. PRÁKRITA LAKSHANA (English Translation and Notes). 4. PRITHIRÁJ RASAU (Text and Translation). 5. KÁTANTRA (Introduction). 6. BŪHAD DEVATÁ (Text). 7. PRÁKRITÁ-DHYÁYA (Text and Translation). 8. CHARAKA (English Translation with notes). 9. NAQÁID (Text). 10. KATHÁ SARIT SÁGARA (Index of subjects and names). 11. SUŚRUTA SAMHITÁ (English Translation with Notes). 12. NYÁYA VÁRTIKA (Text). 13. COMMENTARIES of the Vedánta SÚTRA. 14. YOGINÍ TANTRA (Text). 15. KARANA GRANTHA (Text). 16. TÁRIKH-I-YÁMINÍ (English Translation with notes). 17. ASHTA SAHASRIKA PRAJÑÁ PÁRAMITÁ (Text).

The editorship of the Text of the Prithi Ráj Rásau, having been resigned by Dr. Hoernle, on account of stress of work, has been transferred to Pandit Gopála Sarman, a Professor of the Jaynarain's College in Benares.

The editor of the Suśruta, Dr. A. C. Dutt, having died, the Council of the Society is endeavouring to find another equally competent editor to continue the work which had been so ably commenced by the late Dr. Dutt.

The publication of the Lamiyyet el Arab, announced in the last annual report, has been cancelled at the suggestion of Mr. C. J. Lyall, who was to have edited it.

The undermentioned new works have been sanctioned for publication.

1. Sanskrit.

1. The JÑÁTÁ DHARMAKATHÁ and the VIPÁKA SÚTRA, two of the Jain Angas, to be edited by Dr. A. F. Rudolf Hoernle. (See Proceedings, May 1885.)

2. The SADDHARMA PUNĀRÍKA, a Buddhist history of Buddha, by the same editor.

3. The VARÁHA PURÁNA, to be edited by Pandit Hrishikesh Sásatri of the Sanskrit College.

4. The SAT SAI of Tulsí Dás, by Pandit Bihári Lál Chaube.

5. JAYADATTA on ancient Hindú Veterinary art. By Bábú Umeśachandra Gupta.

6. GADYA KUSUMÁNJALI, to be edited by Pandit Chandrakánta Tarkaratna, of the Sanskrit College.

2. Arabic and Persian.

7. AL TABRÍZÍ's commentary, to be edited by Mr. C. J. Lyall.

8. Tuzak i Jahángírf, to be edited by Rev. W. H. Lowe of Cambridge.

The following is a detailed List of Publications issued in 1886 :—

Arabic-Persian Series.

1. **IQÁBAH**, edited by Moulvi Abdul Hai of the Calcutta Madrasah, Nos. 250, 251, 252 (Old Series) fasc. XXVI, Vol. II, No. 8, and fasc. XXXVII, XXXVIII, Vol. III, Nos. 7, 8.
2. The **AKRARNÁMAH**, by Abul Fazl-i-Mubárak-i-Allamí; edited by Maulvi Abdur Rahim, Professor, Calcutta Madrasah; Nos. 534, 535, 552, 552A, Vol. III, Fasc. VI, VII.
3. **MUNTAQHAB-UT-TAWÁRÍKH**, by Abdul Qadir Bin Maluk Sháh, known as Al-Badaoní, translated from the original Persian, by W. H. Lowe, M. A., Hebrew Lecturer, Christ's College, Cambridge, No. 543, Fasc. III.
4. The **ZAFARNÁMAH**, by Mauláná Sharfuddin 'Ali Yazdi, edited by Maulvi Muhammad Iahdád, late second Professor, Calcutta Madrasah, Nos. 533, 545, Fasc. I and II.

Sanskrit Series.

5. **CHATURVARGA CHINTÁMAÑI**, by Hemádri, edited by Pandits Yogesáchandra Smṛitiratna and Kámákhyánátha Tarkaratna, Nos. 527, 536, 548, Vol. III, Part I, Fasc. X, XI, XII.
6. **NIRUKTA**, with commentaries, edited by Pandit Satyavrata Sámaśramí; Nos. 526, 538, Vol. II, Fasc. V, VI; Nos. 539, 546, 554, Vol. III, Fasc. I, II, III.
7. **ĀPASTAMBA ŚRAUTA SŪTRA**, belonging to the Black Yajur Veda, with the commentary of Rudradatta, edited by Dr. Richard Garbe, Professor of Sanskrit in the University of Königsberg, Nos. 531, 551, 560, Vol. II, Fasc. X, XI, XII.
8. **STHAVIRÁVALI-CHARITRA** or **PARÍŚIṢṬA PARVAN**, being an appendix of the Trishasthi Sataka Purusha Charitra, by Hemachandra, edited by Dr. Hermann Jacobi, Professor of Sanskrit and Comparative Philology in the University of Riel; No. 537, Fasc. III.
9. **PARÁSARA SMṚITI**, by Chandrakánta Tarkálankára, Nos. 529, 547, Fasc. III, IV.
10. **MÍMÁÑSÁ DARŚANA**, with the commentary of Savara Svámin; edited by Maheśachandra Nyáyaratna, No. 541, Fasc. XVIII.
11. **TATTVA CHINTÁMAÑI**, edited by Pandit Kámákhyánátha Tarkaratna, Nos. 530, 544, Fasc. II, III.
12. **VÁYU-PURÁÑA**, a system of Hindú Mythology and Tradition; edited by Dr. Rájendralála Mitra, C. I. E., Nos. 528, 553, Vol. II, Fasc. V, VI.
13. **KŪRMA PURÁÑA**, a System of Hindu Mythology and Tradition, edited by Pandit Nilmani Mukerjea, Professor in the Presidency College, No. 559, Fasc. I.

14. **VIVÁDA RATNÁKARA**, a digest of laws relating to jurisprudence ; edited by Pandit Dínanátha Vidyálankára, Nos. 549, 550, Fasc. I, II.
15. **The KÁLA MÁDHAVIYA** of Mádhava Achárya, edited by Pandit Chandrakánta Tarkálankára, Nos. 540, 558, Fasc. I, II.
16. **NÁRADA SMṚITI**, one of the standard authorities in Hindú Law ; edited by Dr. Julius Jolly, Professor of Sanskrit and Comparative Philology in the University of Würzburg, No. 542, Fasc. I.
17. **MANU TÍKÁ SANGRAHA**, or extracts from various Commentaries on Manu's Law Book ; also edited by Professor Jolly, No. 556, Fasc. I.
18. **SANKHÁYANA ŚRAUTA SŪTRA**, edited by Dr. Alfred Hillebrandt, Professor of Sanskrit and Comparative Philology in the University of Breslau, Nos. 532, 555, Vol. I, Fasc. I, II.
19. **UVÁSAGADASÁO**, the seventh Anga of the Jains, on the rules of conduct of Jain laymen ; edited by Dr. A. F. Rudolf Hoernle, No. 557, Fasc. I.

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.
- § American Philological Association.
- * Amsterdam.—Royal Zoological Society.
- * Angers :—Société d' Etudes Scientifiques d' Angers.
- * Baltimore :—Johns Hopkins University.
- * Batavia :—Society of Arts and Sciences.
- § ——— :—Magnetic and Meteorological Observatory.
- * ——— :—Kon Natuurkundige Vereeniging in Nederlandsch-Indië.
- * Berlin :—Royal Academy of Sciences.
- § ——— :—Entomologischer Verein.
- † Berne :—Société Suisse d' Entomologie.
- § Birmingham :—Birmingham Philosophical Society.
- * Bombay :—Bombay Branch, Royal Asiatic Society.
- ——— :—Editor, Indian Antiquary.
- * ——— :—Editor, Times of India.
- * Boston :—Natural History Society.

- * Bordeaux :—L' Académie Nationale des Sciences, Belles-Lettres et Arts.
- § ————— :—Société de Géographie Commerciale.
- * ————— :—Société Linnéenne.
- * Brisbane :—Royal Society of Queensland.
- * Brookville :—Society of Natural History.
- * Brunswick :—Verein für Naturwissenschaft.
- * Brussels :—L' Académie Royale des Sciences.
- * ————— :—Musée Royal d' Histoire Naturelle de Belgique.
- * ————— :—Société Entomologique de Belgique.
- * ————— :—Société Royale Malacologique de Belgique.
- § Buda Pest :—Royal Hungarian Academy of Sciences.
- * Buenos Ayres :—Public 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.
- * ————— :—Indian Mirror.
- * ————— :—Indian Museum.
- † ————— :—Mahomedan Literary Society.
- † ————— :—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.
- * Clinton :—Editor, American Antiquarian and Oriental Journal.
- * Colombo :—Ceylon Branch, Royal Asiatic Society.
- * Copenhagen :—La Société Royale des Antiquaires du Nord.
- † Cuttack :—Cuttack Library.
- * Dehra Dun :—Great Trigonometrical Survey.
- * Dublin :—Royal Dublin Society.
- * ————— :—Royal Irish Society.
- § ————— :—Geological Society of Dublin.
- * Edinburgh :—Royal Society.
- * ————— :—Scottish Geographical Society.
- § ————— :—Botanical Society.
- * Florence :—Società Italiana di Anthropologia e di Etnologia.

- * Florence :—Società Africana d' Italia.
- * Frankfurt :—Senokenbergische Naturforschende Gesellschaft.
- * 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.
- * Halle :—Deutsche Morgenländische Gesellschaft.
- † — :—Die Kais. Leopoldinisch-Carolinische Akademie.
- * Hamilton :—Hamilton Association (Canada).
- * Harrisburgh :—Second Geological Survey of Pennsylvania.
- * 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.
- * Königsberg :—Die physikalisch-Oekonomische Gesellschaft.
- * Lahore :—Editor, Civil and Military Gazette.
- § — :—Anjuman-i-Panjab.
- § — :—Agricultural Society.
- * Leyden :—Royal Herbarium.
- * Liège :—La Société Géologique de Belgique.
- * — :—La Société des Sciences.
- § Lille :—Société de Géographie.
- * Liverpool :—Literary and Philosophical Society.
- * London :—Anthropological Institute.
- * — :—Editor, Academy.
- * — :—Editor, Athenæum.
- * — :—British Museum.
- * — :—Geological Society.
- * — :—Institution of Civil Engineers.
- * — :—Institution of Mechanical Engineers.
- * — :—Editor, Nature.
- * — :—Linnean Society.
- * — :—Royal Asiatic Society of Great Britain and Ireland.
- * — :—Royal Astronomical Society.
- * — :—Royal Geographical Society.
- * — :—Royal Institution.
- * — :—Royal Microscopical Society.
- * — :—Royal Society.
- * — :—Society of Telegraph Engineers.

- * London :—Statistical Society.
- * ——— :—Zoological Society.
- * Lyons :—La Société d' Agriculture, d' Histoire Naturelle et des Arts Utiles.
- * ——— :—Muséum d' Histoire Naturelle.
- * ——— :—Musée Guimet.
- * ——— :—La Société d' Anthropologie.
- § ——— :—La Société de Géographie.
- † Madras :—Literary Society.
- * ——— :—Government Central Museum.
- * Manchester :—Literary and Philosophical Society.
- § Melbourne :—Royal Society of Victoria.
- * Moscow :—Société Imperiale des Naturalistes.
- * ——— :—Imperial Society of Amateurs of Natural Sciences, Anthropology and Ethnology.
- * Munich :—K. Bayerische Akademie der Wissenschaften.
- * ——— :—Editor, Repertorium der Physik.
- † Netherlands :—Royal Society.
- * New Haven :—Connecticut Academy of Arts and Sciences.
- § ——— :—American Oriental Society.
- * Newport (R. I.) :—Natural History Society.
- * Ottawa :—Geological and Natural History Survey of the Dominion of Canada.
- † Oxford :—Bodleian Library.
- † ——— :—Indian Institute.
- * Paris :—La Société de Géographie.
- * ——— :—Société d' Anthropologie.
- * ——— :—Société Asiatique.
- * ——— :—National Library.
- * ——— :—Société Zoologique.
- * ——— :—Société Académique Indo-Chinoise.
- § ——— :—Institution Ethnographique.
- * Philadelphia :—Academy of Natural Sciences.
- § ——— :—American Philosophical Society.
- * Pisa :—Società Toscana di Scienze Naturali.
- § Prague :—K. K. Sternwarte.
- § Rio de Janeiro :—Museo Nacional.
- § Rome :—Società degli Spettroscopisti Italiani.
- § ——— :—R. Accademia dei Lincei.
- § Roorkee :—Editor, Professional Papers on Indian Engineering.
- * St. Petersburg :—Comité Géologique.
- * ——— :—Imperial Library.

- * St. Petersburg :—Russian Geographical Society.
- * _____ :—Académie Impériale des Sciences.
- * _____ :—Hortus Petropolitanus.
- * San Francisco :—Californian Academy of Arts and Sciences.
- * Schaffhausen :—Swiss Entomological Society.
- * Shanghai :—North China Branch, Royal Asiatic Society.
- * Simla :—United Service Institution of India.
- * Stettin :—Entomological Society.
- * Stockholm :—Royal Swedish Academy of Sciences.
- * Sydney :—Royal Society of New South Wales.
- * Toronto :—Canadian Institute.
- * Trieste :—Società Adriatica di Scienze Naturali.
- * Turin :—Reale Accademia delle Scienze.
- † Ulwar :—Ulwar Library.
- * Vienna :—Anthropologische Gesellschaft.
- § _____ :—K. K. Central-anstalt für Meteorologie und Erdmagnetismus.
- * _____ :—K. K. Akademie der Wissenschaften.
- * _____ :—K. K. Geologische Reichsanstalt.
- * _____ :—K. K. Zoologisch-Botanische Gesellschaft.
- * _____ :—Ornithologische Verein.
- * Washington :—Commissioners of the Department of Agriculture.
- * _____ :—Smithsonian Institution.
- § _____ :—U. S. Army Signal Service.
- * _____ :—United States Geological Survey.
- § _____ :—U. S. Coast and Geodetic Survey.
- * Wellington :—New Zealand Institute.
- * Württemberg :—Natural History Society.
- * Yokohama :—Asiatic Society of Japan.
- * _____ :—German Oriental Society.
- * Zagreb :—Archæological Society.

ABSTRACT OF COUNCIL PROCEEDINGS.

January 29th. Ordinary Meeting.

Read a letter from the Private Secretary to the Viceroy, notifying the acceptance by Lord Dufferin of the office of Patron of the Society.

With reference to a letter from the Commissioner of Orissa, advising the find of a collection of Sanskrit Manuscripts in one of the Maths of Pooree, it was resolved that the Commissioner be informed that the Society could take no measures until they knew what works were in the collection.

On the recommendation of the Philological Committee, the Council sanctioned the publication in the Bibliotheca Indica of a translation of

the Práyaschitta of the Institutes of Parásara, to be edited by Babu Krishna Kamal Bhattachárjya.

A Resolution from the Government of India in the Home Department effecting further alterations in the Indian Treasure Trove Act was ordered to be recorded.

An exchange of publications was sanctioned with the Hamilton Association, Canada, as regards the Society's Proceedings only.

It was resolved that the name of Dr. E. Hultzsch of Dresden, be recommended to Government for entry on the List of those to whom Dr. Mitra's Notices of Sanskrit Manuscripts are distributed.

The appointment by the Secretary of Mr. J. F. Duplessis, as Assistant Secretary, was approved.

The Annual Report was read and approved; and the Annual Accounts for 1885, with the estimate of Receipts and Expenditure for 1886 were laid on the table.

On an intimation from Mr. Croft that he was about to leave India and would therefore be unable to serve on the Council, it was resolved that the names of Messrs. E. T. Atkinson, A. Simson and T. G. H. Moncreiffe be submitted for selection in place of Mr. Croft.

On the motion of the Honorary Treasurer to reduce the usual number of copies printed of the Society's Journal and Proceedings, it was ordered that the same number be continued to be printed, but that the Secretaries take steps to increase the exchange.

February 26th. Ordinary Meeting.

Read a letter from Mr. Henry Baden-Powell remitting a compounding fee of Rs. 160 for his admission as a Life-Member.

On the proposal of Dr. Mitra and the recommendation of the Philological Secretary, it was ordered that the whole of the Institutes of Parásara be translated for the Bibliotheca Indica, instead of the Práyaschitta section only.

Read a letter from the Magistrate of Patna presenting the Society with two ancient Buddhist coins.

Read a circular from the Royal Academy of Sciences of Turin offering for competition the Bressa Prize, of the value of 12,000 Italian lire, to be awarded to the scientific author or inventor who shall have made the most important and useful discovery or published the most valuable work on Physical Science, Natural History, Mathematics, Chemistry, Physiology, Pathology, Geology, History, Geography and Statistics.

The various Committees for the current year were elected.

On an application from Mr. Smith, the proprietor of the City Press, for permission to publish selections from the records of the Society, it

was resolved that Mr. Smith be allowed to reprint articles from the Society's Journal previous to 1865, all responsibility with regard to the question of copyright to rest with the publisher.

On the recommendation of the Philological Committee, the Council accepted the proposal of Mr. L. White King to publish in the *Bibliotheca Indica*, certain histories of the three great conquerors of India, *viz.*, Mahmood, Timur, and Nadir Shah.

The names of Mr. J. Low, and Col. J. G. Forbes, who were largely in arrears of subscription, were ordered to be removed from the Member List and the sums due by them to be written off.

March 26th. Ordinary Meeting.

It was resolved to subscribe for one copy of "The Observatory" a monthly review of astronomy.

Major J. Waterhouse having resigned his trusteeship of the Indian Museum which he held on behalf of the Society, Mr. H. F. Blanford was nominated to the vacant place.

The Hon'ble J. Gibbs having tendered his resignation of the office of Vice-President, the Hon'ble H. J. Reynolds was appointed in his place, and Mr. A. Simson was nominated a Member of Council, in place of Mr. Reynolds.

It was resolved to subscribe for two copies of Babu Dinonath De's Urdu Grammar.

On the recommendation of the Philological Committee the publication of several Sanskrit works was sanctioned, details of which are given under the section "*Bibliotheca Indica*."

Mr. L. W. King having intimated that the *Tárikh-i-Tamini* had been already translated, it was ordered that its publication in the *Bibliotheca Indica* be discontinued.

On an application from the editor of the *Isábah*, Moulvi Abdul Hai, it was resolved that a copy of the work be obtained from Hyderabad and a copy of the *Nizamul Jetidal* be purchased, to help the Moulvi in his edition of the *Isábah*.

Read a letter from the Deputy Commissioner of Rohtak forwarding 5 silver coins which the Philological Secretary reported to be very bad specimens, of little value and not particularly rare. Resolved that the Panjab Government be advised to present one specimen each to the Indian Museum, and the Museums in Bombay, Madras, Lahore, Lucknow and Nagpur.

April 30th. Ordinary Meeting.

On the recommendation of the Philological Secretary, it was resolved to purchase an English translation of Dr. Emil Riebeck's work on "The Chittagong Hill Tribes."

A Report from the Philological Secretary on a parcel of 204 copper coins received from the Secretary to the Government N. W. P. and Oudh having been read, it was ordered that that Government be advised to send specimens to the Indian Museum and other local Museums, and that intimation be given to such members of the Society as were especially interested in coins.

Mr. J. Beames was elected a Member of Council and expressed his willingness to act for Dr. Hoernle during the latter's absence on leave for three months.

On the recommendation of the Philological Committee, it was resolved to purchase "Jahani" a very old and valuable work on Muhammadan law, the price of which was Rs. 10-12.

Mr. E. T. Atkinson was appointed an Auditor for the Annual Accounts of 1884 in the place of Mr. J. Westland.]

On an application from the Secretary, it was resolved that the Library Catalogue be distributed free to all members applying for it, but that the Centenary Review should be paid for by all Members joining after the date of its publication.

May 28th. Ordinary Meeting.

On an application from Major-General G. G. Pearse, it was ordered that his name be inserted on the Society's Register of Numismatists; and that the suggestions made by him with reference to the disposal of gold coins be circulated to Members of Council for an expression of opinion.

A letter was read from the Magistrate of Murshidabad on the subject of a stone pillar lying in fragments in his district and of an inscription thereon; it was resolved that a copy of the inscription with a note and a translation be published in the Journal.

An exchange of publications was sanctioned with the Societas pro Fauna et Flora Fennica of Helsingfors.

The Secretary reported that the accounts for 1884 had been audited by the Honorary Auditors.

On the recommendation of the Finance Committee, the Commission allowed to the Cashier was increased from one to two per cent.

A Memorandum on the life and labours of the late Rev. K. M. Banerjee, drawn up by the General and Philological Secretaries, was read and ordered to be published in the Proceedings.

June 25th. Ordinary Meeting.

An exchange of publications was sanctioned with the Société Africaine d' Italie.

On the recommendation of the Philological Secretary, the publication in the Bibliotheca Indica of the Sat Sai of Tulsi Das was sanctioned,

to be edited by Pandit Behárilál Chaubé, with the proviso that the commentary be strictly confined to elucidating the text.

On an application from Dr. A. Sprenger, it was ordered that he be supplied with such Nos. of the Bibliotheca Indica and of the Proceedings as he may require to complete his collection.

July 30th. Ordinary Meeting.

Read a letter from the Government of India covering a revised List of Persons, Institutions and Libraries, to whom Notices of Sanskrit Manuscripts should be distributed. It was resolved that it be adopted in place of the old one.

Exchanges of publications were sanctioned with the Scottish Geographical Society, Edinburgh, and with the Brookville Natural History Society, Brookville (Indiana) U. S.

On the recommendation of the Philological Committee, Professor W. H. Lowe was authorised to edit a translation of the Tuzak-i-Jahángiri for the Bibliotheca Indica.

The Secretary having reported that Messrs. Trübner and Co. had returned part of the stock in their hands of the Journal and the Bibliotheca Indica which had a very small sale in Europe, the Council appointed a Sub-Committee to take into consideration what measures had best be taken to reduce the prices of these publications, so as to secure an increased circulation.

A Report from the Philological Secretary on a parcel of coins received from the Deputy Commissioner of Chindwarra was ordered to be forwarded to Government in accordance with the recent resolution under the Treasure Trove.

A specimen of a gold Viraraya Fanam, presented by the Madras Central Museum, was ordered to be announced at the next meeting of the Society.

August 27th. Ordinary Meeting.

A specimen of a Nagari gold Fanam was received from the Madras Central Museum.

The Secretary reported that Messrs. Trübner and Co.'s accounts for 1884 had been received and found correct, with the exception of a few trifling discrepancies, which they had been asked to rectify.

An exchange of publications was sanctioned with the Newport Natural History Society.

On the recommendation of the Philological Secretary, it was resolved to subscribe for two copies of a new edition of the "Amara" by Babu Anandarám Bároósh, Offg. Mag. and Collector of Noakhally.

On the proposal of Dr. R. Mitra and the recommendation of the Philological Committee, the Council sanctioned the publication in the *Bibliotheca Indica* of (1) Jayadatta's Treatise on Ancient Hindu Veterinary Art, to be edited by Babu Umesa Chandra Gupta; (2) the *Gadya Kusumánjali* of Udayana Achárjya, to be edited by Professor Chandrakánta Tarkálankára.

Read a Memorandum from the Philological Secretary on sundry suggestions from Major-General Pearse with reference to the disposal of gold coins: it was resolved that a suggestion be made to Government that such coins, instead of being melted down after having been kept for one year, should be sent to England for distribution or for sale.

On the application of the Secretary, an additional grant of Rs. 1,000 was sanctioned to pay off outstanding debts and cover cost of printing to the end of the year.

Seven Reports from the Philological Secretary on finds of ancient coins were ordered to be read at the next monthly meeting.

September 24th. Ordinary Meeting.

An offer from Mr. P. B. Saville offering for sale a copy of Eastwick's "Kaiser-námah-i-Hind" was declined with thanks.

October 29th. Ordinary Meeting.

A letter was read from the Government of India with reference to the Society's proposal for the sale of coins in England, intimating that the question had been referred for orders to H. M. Secretary of State.

On an application from Dr. Emil Schlagintweit and the recommendation of the Philological Secretary, it was resolved that the Society's publications, which were sent to the late Professor Robert Schlagintweit, be continued to his brother, Dr. Emil Schlagintweit.

Several Reports on finds of old coins by the Philological Secretary were ordered to be communicated to the next meeting of the Society.

On the recommendation of the Philological Committee Mr. C. J. Lyall was authorized to prepare for the *Bibliotheca Indica* an edition of Tabrizi's commentary on certain Arabic Poems.

Read the Minutes in circulation of the Council on the draft Indian Copyright Bill: it was resolved that a letter be written to Government, embodying the objections of the Council.

On a reference from Dr. R. Mitra regarding the find of ancient MSS. in Pooree advised by the Commissioner of Orissa, it was resolved that that officer be asked for a copy of the Catalogue which had been

prepared, with the view of ascertaining whether the collection was worth purchasing.

An old Madras gold Pagoda presented by the Madras Central Museum was ordered to be exhibited at the next meeting of the Society.

November 26th. Ordinary Meeting.

On an application from Mr. Robert Philip Heilgers, Austro-Hungarian Consul, for copies of such of the Society's publications as may possess scientific interest, for the use of the "Fründberg" now in port on a Scientific Mission, it was resolved that a copy of the Centenary Review be sent to the Consul.

An application from the Perthes Geographical Anstalt for a gratis copy of the Centenary Review was granted.

Messrs. Trübner and Co. were authorized to sell the Centenary Review at 6 shillings per copy.

A letter from the Government of Bengal communicating the sanction of the Government of India to an application from the Philological Secretary to retain one specimen of all coins sent for examination, was ordered to be recorded.

Several reports by the Philological Secretary on finds of old coins were ordered to be read at the Society's next meeting.

December 31st. Ordinary Meeting.

An offer from Mr. Edward Thomas to lend the Society an original MS. copy of Zia-ud-din's "Tárikh Feroz Shah" to assist in the translation of the work sanctioned for the Bibliotheca Indica was accepted with thanks.

An exchange of publications with the Canadian Institute, Toronto was sanctioned, as regards the Bibliotheca Indica.

With reference to a letter from Dr. Beharilal Gupta asking to be relieved from his duties as editor of a translation of the "Susruta" it was resolved that the resignation be accepted, and that Dr. R. Sen, whom Dr. Gupta recommends as his successor, be written to for a specimen of the translation which he has prepared.

The minutes of the Council in circulation accepting a proposal from Dr. Hoernle to represent the Society at the next Congress of Orientalists to be held at Vienna were confirmed.

The Secretary reported that he had addressed Government on the subject of Dr. Hoernle's application to be recommended to Government as a Government representative to the Congress.

A Circular from the Société de Physique et d'Histoire Naturelle of Geneva offering for competition a prize of 500 francs for a monograph

on a genus or family of plants was ordered to be published in the Proceedings.

A proposal from the Philological Secretary to supply Professor Pischel of Jena and Dr. Garbe of Königsberg with gratis copies of the Society's publications and of the *Bibliotheca Indica* was sanctioned.

The list of Office-Bearers and members of Council for the ensuing year was prepared for circulation in accordance with Rule 44.

The Secretary submitted the Report of the Sub-Committee appointed to consider measures for reducing the prices of the Society's publications and securing an increased circulation. The Report was approved with certain changes and additions.

The Report having been read, the President invited the Meeting to put any questions or offer any remarks which any Member might think necessary in connexion therewith.

No remarks having been offered, the President moved the adoption of the Report. The motion was unanimously carried.

The PRESIDENT then addressed the Meeting as follows :

Address.

GENTLEMEN,—Owing to my absence from your last annual meeting I could not then thank you for the honour you did me by electing me your President for the year. I tender you my grateful acknowledgments for it now. The honour you conferred on me was the highest reward I could have aspired to for the humble services I had been able to render to the Society during my connexion with it. When I called to mind the renowned scholar who founded this Society, and the many illustrious personages who had, after him, from time to time, occupied your chair, I could not but think that your choice on the last occasion was not happy, for I was fully conscious of my many shortcomings and the infirmities of my age. My ideal of a perfect President is a person who is a complete master of the different branches of knowledge which come before the Society, one who can be a guide to our workers, and a competent judge of their work. And this too made me hesitate. My ideal, however, is unattainable. Your field is vast; it includes "all that is performed by man or produced by nature within the geographical limits of Asia," and no man in the present day can claim mastery over the whole of it. You felt this, and of late your practice has been to change your President every year, so as to have a representative of both science and literature, on alternate years. This is as it should be. You have also in a manner outgrown the necessity

of having the most learned man for your President. At the first start an association greatly needs the guiding hand and wise head of the ablest and the most energetic; but such is not the case with you now. A hundred years of the most successful career has made you perfectly independent of the aid of any one individual, however gifted he may be. Your business is carried on by Committees which include among its ranks the foremost men in their respective departments, and your President takes his place only as one among the workers. In fact, the special duty of your President now is, that of a Moderator, and in that respect what you require of him is diligence, regular attendance, and a lively interest in the welfare of the Society. In this view of the case, pardon me if I venture to say so, I thought that I yielded to none in my entire and earnest devotion to the good of the Society. For nine-and-thirty long years I had served the Society in different capacities, and it had been a source of high satisfaction to me that in every capacity I had been able to secure your approbation, and when you crowned your favours by placing me in the highest position in the Society, I believed I would not prove unworthy of your last mark of confidence and approbation. If I had no high pretension to knowledge, I knew that I had learnt, not a little by association with the members of this Society, to appreciate the value of knowledge, and had always tried my humble best to promote its cause, and for the short time that it may take for the remaining few grains of sand in my glass to run out, I shall never abate an iota in my exertions in its behalf. I depended, likewise, on the co-operation of the distinguished gentlemen who would be my colleagues in your Council. Whether my thoughts and calculations were right or wrong, it is not for me to judge; but I have the satisfaction of knowing that, now that the term of my service is out, I leave your affairs in no way injured. I must add, however, that for whatever success may have been achieved during the past year, the credit is due to my colleagues, and if there has been any failure I must take the blame thereof on myself.

Turning now from personal matters to the affairs of the Society, I notice that the annual report just read gives a very satisfactory account. Your member list is increasing; your finances are in a healthy condition; and your publications show no signs of decadence. The Society has begun the second century of its career with far greater vitality, energy, and capacity for useful work than what it possessed at the time of its birth. Comparisons are often odious, but without meaning any offence to any institution, I may boldly affirm that your publications, in extent, variety, and value, yield to no publication of any of the numerous sister Asiatic Societies extant. Your transactions came first into existence,

and have always retained, and now unquestionably maintain, their high position as the foremost of their kind.

By far the most important of your publications is the *Journal*. It is the repository of the finished results of the researches of your workers, and the credit of the Society depends entirely upon its merits; and as such, it is gratifying to notice that it fully sustains its well-established reputation. The first part of it, devoted to historical and literary subjects, brought out during the past year a number of highly interesting papers. Mr. Atkinson's notes on the History of Religion in the Himalaya are valuable accessions to our stock of knowledge on the subject, and are characterised by an amount of patient research and accurate observation which cannot fail to attract the attention of scholars. The archæological notes on the Fatehghar district are equally interesting; Mr. Growse has made Indian archæology a subject of special study, and his opinions deserve every consideration. The numismatical papers by Messrs. Rodgers, Theobald, and others are all valuable contributions in their respective spheres.

The second part of the *Journal* is of more diversified interest. Devoted to Natural Science, it has a wider field and much virgin soil to work upon. Our workers, too, in this department are more numerous and highly enthusiastic. In the scientific staff of the Indian Marine Survey we have some excellent coadjutors, and their contributions occupy a prominent place in our *Journal*. I may instance Capt. Carpenter's paper on the 'Swatch of no-Ground' in which a very reasonable explanation is given of the nature of an enigma which had puzzled many observers. There is, as you are aware, at the head of the Bay of Bengal, amidst a wide expanse of shallow water where the Ganges and the Brahmaputra are engaged in land-making, a hollow of great depth which is apparently not affected by the land-making process going on around it. This is accounted for now by the existence of a submarine ravine there, which is constantly scoured by a current of the sea coming from the southwest. Our zealous associate Mr. de Nicéville continues his labours on Indian Lepidoptera, and we have received several papers from him; and our esteemed friend Mr. Atkinson has contributed a most valuable monograph of an important section of Homopterous insects, that of *Rhynchota*. The representatives of this section are all small—some very minute,—but they are not, on that account, the less interesting. One of the diminutive representatives of this group is the lac insect, which yields us an article worth forty lacs of rupees a year. The patient care with which the author has prosecuted his researches among these not very attractive group of insects bears high testimony to his scientific devotion. Mr. Hill has contributed the results of some interesting observations made with

a solar thermometer at Lucknow, and we owe to Mr. Pedler a paper on the corrosion of lead in tea boxes which cannot but attract the attention of the planters of Assam, and lead to the adoption of measures which will prevent serious loss.

The third part of our Journal is called the 'Proceedings.' It is in fact our commonplace book, in which we keep a record of all the facts and information which we derive from our collaborateurs—facts of great use to our workers, but which our informants have not time to develop into finished essays. It serves also to keep our mufassil members duly and early informed of the monthly work of the Society. The value of such a publication depends upon its prompt and regular issue, and in this respect, thanks to the diligence of our General Secretary, there have been no reasons for complaint. The notes and memoranda published in it during the past year were generally well-received and accepted as useful.

The fourth serial of the Society is the 'Bibliotheca Indica.' Of this we have published no less than 39 fasciculi, including portions of 29 separate works in Sanskrit, Arabic, Persian, Mágadhi, and English. We have also sanctioned for publication, and are getting ready for press, 24 hitherto unpublished works. The object of this large selection is to work out the balance of funds which has accumulated in our hands. The Society is dependent upon the goodwill of a large number of editors, and it is impossible to get them all to turn out an exactly estimated amount of work every year. Ill-health, death, departure from India, and a variety of other causes lead to disturbances, and as it is extremely difficult to replace editors at a sudden emergency, our outturn is sometimes larger and sometimes smaller than our estimates. The large selection now made, it is expected, will soon enable us to keep abreast of the Government grant. As these works have been made over to different scholars, and each has a literary reputation to maintain, there is no reason to apprehend that the quality of our work will in any way suffer. Our selections have generally met with the approbation of European Orientalists, and our Society may well take pride in having done in this respect invaluable service to the cause of Oriental literature.

A complaint has often been made that the Society's editions were not accompanied with English translations, and that this omission detracts from their merit. There is some truth in this. There is no question that translations into English would make our publications more attractive than what they are at present. The propriety of having translations had engaged the attention of your Council when the 'Bibliotheca Indica' was first projected. In fact, it was made a primary condition. Experience,

however, soon demonstrated that it could not be strictly enforced. Those who undertook to edit our works and were competent to supply satisfactory translations were all engaged in official duties which left them little leisure, and your Council were soon driven to the choice between no publication, or texts without translations; and they wisely accepted the second branch of the alternative. The Oriental grant was originally made for the preservation of ancient texts, and the second grant of 1868 expressly names texts and texts only. And the reason for this is obvious. Texts were fast disappearing through neglect and other causes, and the primary object was their preservation. That object once attained, leisured men and scholars could take up the task of translation at any time at their convenience. The Council, accordingly, while offering every encouragement for translations, have thought fit not to retard the printing of texts. I am sure this plan will meet with your entire approbation.

The only other subject connected with the Society to which it is usual to advert is the obituary list. This, on the present occasion, is, I am happy to say, not heavy. In the Proceedings for May last, you have already placed on record your sense of the loss sustained by the Society by the death of the Rev. Dr. K. M. Banerjea. He was a profound scholar, master of many languages, and a zealous worker, who fully deserved your high estimation. Intimation has since been received of the demise of the oldest member of the Society, Lieut.-General Sir Arthur Purves Phayre, G. C. M. G., K. C. S. I., C. B., who died at Bray, near Dublin, on December 15. He was born in 1812, and elected a member of this Society in 1837. The best part of his official life was spent in the South-Eastern Provinces, and he contributed to our Journal fourteen different papers regarding the archæology of Arakan, Pagan, Pegu and other places in Burma. He published a 'History of Burma from the Earliest Times to the end of the First War' in Trübner's Oriental Series, and a monograph of Burman Coins for the 'International Numismata Orientalia.' I have to announce also the death of Mr. J. W. Laidlay. He retired from India six and thirty years ago, but during his sojourn in this country he took a great interest in the affairs of your Society. He wrote a number of interesting papers for the Journal, and held the offices of Secretary and Vice-President for several years. To him you owe the scheme of the Bibliotheca Indica which has done so much to enhance the credit of the Society among European Orientalists.

The time at my disposal on the present occasion will not admit of my attempting a survey of the progress, outside the walls of this house, of the different branches of knowledge to which you direct your attention; nor is it necessary. Our Library table is so well-supplied with new

books and periodicals, and the diligence with which you study them, keeps you *au courant* of the history of progress, and you know quite as much of it as I do. Nevertheless, I think it is desirable to cast a glance—if it be only a mere casual glance—at some of those topics which are too intimately connected with your work.

In the department of Science, the Society's most active co-labourers on this side of India are the Geological, the Meteorological, and the Marine Surveys. I have already referred to some of the contributions we have derived from the last. The Geological Survey under the superintendence of my distinguished friend Mr. Medicott, and the management of a staff of able officers, fully sustains its scientific renown. It issues three serials, of which the largest is the 'Palæontologica Indica.' In its pages, during the past year, Professor Waagen gave to the world a valuable essay on the Productus-limestone fossils of the Salt Range, and Mr. Lydekker has brought out learned papers on Pre-tertiary and Post-tertiary vertebrates from different parts of India, illustrated by a large number of excellent plates. The 'Memoirs' of the Survey comprises, among others, a paper by Mr. Mallet on the Volcanoes of Barren and Narcondam islands in the Bay of Bengal, and another by Mr. Hughes on the Southern coal-fields of the Rewah-Gandowana Basin. The 'Records' of the Survey occupies the same place which the Proceedings do in your Society, and contains a variety of valuable notes. I can advert only to two of these, one on the Kashmír Earthquake of May last, by Mr. Jones, and the other on the Bengal Earthquake of July, by Mr. Middlemiss. These gentlemen trace with great scientific precision the seismic vertical at these two places, and the different phenomena observed. I refer to them because they are the best scientific accounts we have of the commotions which attracted much attention during the past year. In the absence of regular seismic observatories and instruments, with hardly any accurate record of even the time when they occurred, it has not been possible to calculate with any thing like scientific precision the rate at which the waves of the quakes progressed, and on the whole I cannot say that the occurrences have contributed much to the stock of our knowledge of the subject; but in matters of this kind we shall have to collect data for a long time before our physicists can venture upon safe generalisations. And as regards data, I believe, that in the two papers I refer to, all has been done that could be reasonably expected under the circumstances. I may add that there is a note in the 'Records' by Mr. Medicott, which gives a summary of the most recent theories on the subject of earthquakes.

Adverting to earthquakes, I may as well recall to your mind the great storm-wave that swept away thousands of human beings from the Orissa coast in October last; but as yet I have seen no memoir published on the scientific aspect of the occurrence.

In the department of Natural History Mr. Wood-Mason continues his labours with unabated zeal. His last contribution is a brochure on the *Paraponys oryzaalis*, which commits sad havoc among rice-plants in the Burman Provinces. This is a sequel to his reports on the tea-bug and tea-mite of Assam. It is unfortunate that no means have yet been discovered for the destruction of these pests. Like the *Phylloxera* and the potatoe disease they continue to extend their ravages. But the nature of a disease must first be discovered, before its cure can be devised, and the duty of my friend Mr. Wood-Mason has hitherto been to ascertain, define, and describe the disease, and not to suggest cures. Dealing with animals which multiply by myriads, the task of extirpating them is well nigh impossible, unless largely aided by climatic influences.

I should here refer also to the investigations made during the past year regarding those microscopic forms of life which the researches of Davis, Bastian, Pasteur, and others have shown are intimately connected with disease. The last impetus was given in this direction by the discovery, by Dr. Koch, of the comma bacillus as the primary cause of cholera, and a great deal has since been done in ascertaining the anatomy, physiology, and habits of life of several species of microbes. There is a marked divergence of opinion as to the relation of the bacillus to cholera; and the prevailing opinion seems to be that the bacillus has no causal relation to that awful disease, and there are physiologists who cherish grave doubts about the efficacy of Pasteur's hydrophobic inoculation; but the advance made in the enquiry is certain, and we may hope ere long to arrive at a definite solution.

The most-esteemed coadjutor of your Society in the department of Antiquities is the Archæological Survey of India. It has contributed since its establishment a total of 23 volumes, replete with matter of varied interest. During the past year it issued two volumes containing notices of various antiquities in Behar, Central India, Peshawar, the Usafzai country, and Central Rajputana. It has, as you are all aware, lately lost its guiding spirit by the retirement of General Alexander Cunningham from India, and this event will, I apprehend, seriously impair its usefulness. A humble labourer in the field in which that learned scholar worked so unremittently, so zealously, and so successfully for considerably more than half a century, I have long watched the progress of his researches, and I have no hesitation in declaring that he is *facile princeps* in the field which he has made his own. He possesses a more thorough, more extensive, and a wider personal knowledge of Indian antiquities than any other European. His opinions are generally sound, and characterised by a calm, quiet, courteous, critical spirit which always commands respect. His retirement has created a gap in the ranks of

Indian archæologists which I despair to see filled up within a short time. It is to be hoped that in his retirement he will have health, energy and inclination to give to the world some of the matured fruits of his unrivalled experience and knowledge.

Our fellow worker Mr. Grierson continues his researches with unremitting vigour. He has lately published a series of seven Grammars of the different Bihari dialects. These will not fail to be useful to district officers who have to acquire a colloquial facility in these media of speech. They will also be useful to philologists engaged in the study of the Comparative Grammar of the Sanskrit Vernaculars of India. Mr. Grierson has, likewise, in conjunction with Dr. Hoernle, brought out the first part of a dictionary of the Bihari language which has been very favourably noticed by the press. I understand that the continuation of this highly promising work is in a forward state of preparation, and may be expected to see the light at no distant day. Mr. Grierson has, moreover, undertaken to edit the 'Yoginī Tantra' for our 'Bibliotheca Indica.' The labours of our associate Mr. Growse are well-known to you. His History of Mathura is the best district memoir lately published. His last work is an essay on the Architecture of Bulandshahar.

It has long been a matter of regret, that, while France possessed a complete translation of the renowned Indian epic the Mahābhārata, there was none extant in the English language. The desideratum is in a fair way of being supplied by Babu Pratāpachandra Rāya of this city. He has already published 20 fasciculi of his translation, which complete nearly one half of the entire work.

It will be interesting to you to learn that some native publishers are now engaged in bringing out in serial Nos. a new edition of your Asiatic Researches.

From the far West comes to us a learned essay on the Roots, Verb-forms and Primary Derivatives of the Sanskrit language. It is from the pen of the renowned Sanskrit scholar, Professor Whitney, of New Haven.

In England there have appeared several books, which will doubtless interest you. The foremost on my list is a life of our former associate, Alexander Csoma de Körös, by our retired member, Dr. Theodore Duka. It has been most favourably received by critics, and is in every way a fitting monument of the renowned Hungarian scholar, the fruits of whose researches were first given out to the public in the pages of our transactions.

In Trübner's Oriental Series—a publication which has already well-established its position as a repository of standard Indian works—there has lately appeared a life of Buddha and Buddhist history. Mr. Rockhill, the author, has drawn his materials from the Kahgyur and

the Sthangyur collections of the Tibetans, and has worked out his theme with great care and diligence. Of course the Tibetan version is later than the Sanskrit original from which it has been drawn, and has not the same authenticity as the Lalita Vistara and the Mahāvastu Avadāna; but Mr. Rockhill's book is not the less interesting on that account. It is certain that all the lives of Buddha extant are more or less legendary, and it is only by a critical study of the different versions, such as the Sinhalese version, translated by Spence Hardy, the Siamese version by Alabaster, the Burmese version by Bishop Bigandet, the Chinese version by Samuel Beal, and others, that we can arrive at a correct historical account. In short, we are still in the stage of brick-making, and the edifice will follow hereafter.

We have lately had Mr. Edwin Arnold in this city, and his presence, doubtless, revived the interest with which you had read his "Indian Song of Songs" and the "Light of Asia." He has lately given to the English reader three new metrical renderings of Sanskrit originals with the same grace, elegance and fidelity which characterised his former works. These come to us under the English names of the "Secret of Death," the "Song Celestial," and the "Indian Seasons," but to the members of the Society they will be best known as the Bhagavad-gīta, the Kaṭha Upanishad, and the Ritu-saṅhāra. They are welcome accessions to our Anglo-Sanskrit Library.

Some seventeen years ago the Government passed orders to institute a search for ancient Sanskrit MSS. in private libraries, and the work has hitherto been conducted with due diligence. To this Society was assigned the task of carrying on the search in Bengal, and the Society has printed upwards of three thousand pages of matter. The other Provinces have also done much in their respective spheres; the last publication received by me is a Catalogue of Coorg MSS. compiled under the superintendence of Mr. Rice. The search on the whole has been satisfactory, and the time will soon arrive when the Government should devise an organization to collate and digest the materials for a complete Catalogue of the entire body of Sanskrit literature extant in India. It will be a work that will highly redound to the credit of the British Indian Government, and prove most useful to oriental scholars.

To an Indian like me, the brief survey I have above sketched, affords, in one respect, a matter of painful reflection. I cannot but mourn that, amidst steady and arduous work, amidst hard struggle for progress, advancement, and knowledge,—for greater and greater light and mastery over the mysteries of physical phenomena, for throwing open the arcana of nature—the pioneers from among my countrymen should be so few. They should be much more and far more enterprising in the

service of knowledge in their country than what they are. It is a consolation, however, to me to notice that they have been awakened from their sleep of ages; the English leaven has set to work among them, and the example set by this Society is likely to be soon followed. I draw this inference not from individual efforts, but from the intellectual ferment visible in the native press. The quarterly reports of Indian publications issued in the different provincial Gazettes afford a healthy sign of the dawn of an early literary revival. I find that the Indian press brought out in course of four quarters nearly seven thousand different works or parts of works, in addition to keeping up a regular issue of well nigh a hundred newspapers, several daily. In Bengal, the people of which are intellectually the most advanced, there were issued in four quarters* no less than 2,395 works† against a total of 6,373 English publications in 1884. At first sight it might be supposed that the publications I refer to were mostly books for school use; but such was not the case. 1,759 of these are described as 'non-educational,' and 239 were Sanskritic. The average of the total is nearly 7 books a day. Only a few of these were by European authors. Doubtless many of these were worthless, and not a few of ephemeral interest; but I refer not to their character, but to their number. The number shows that the Bengali mind is in a ferment, and that it has taken a literary turn. Properly guided and trained this turn will lead it on to literary and scientific research. This Society sets my countrymen a noble example, and I earnestly trust that they will follow it faithfully. I notice that the number of native gentlemen elected as members of this Society during the past year was larger than in any previous year. I hope this increasing ratio will be kept up, and my countrymen will benefit by free intellectual association with the master minds of Europe.

It is not my wish to take up your time this night by adverting to the merits of the Bengali publications; but there is one work named in the published lists which I may cite as an instance of the turn which some native minds have already taken; it is a summary, by Bábu Kshirodachandra Chaudhuri, of the theory of evolution and progress

* The reports of the last two quarters of 1885, not having yet been published, I take the last two quarters of 1884, and the first two quarters of 1885.

	Non-educational.	Educational.	Total.	Sanskritic.
† 1884 3rd Quarter	463	133	596	66
1884 4th Quarter	353	150	503	43
1885 1st Quarter	504	168	672	68
1885 2nd Quarter	439	185	624	62
	<hr/>	<hr/>	<hr/>	<hr/>
	1,759	636	2,395	239

of life as given in the works of Darwin, Huxley, Bastian and other English writers on the subject. That such a book should find among Bengalis a sufficient number of readers to make it worth anybody's while to write it, is a significant fact, and I venture to think that the deduction I wish to draw from it is obvious.

The bend of the native mind has always been on the side of teleology. The problem of life has engrossed their attention from a remote period of antiquity, and many are the references to it that we find in our ancient literature. Our thinkers speculated freely and boldly, not unoften rising far above the narrow sphere to which the prevailing religion of the time wished to tie them down. Of late this spirit of enquiry has received a special impetus by the teachings of the Theosophists, and the published lists of vernacular books afford ample evidence of the fact. The process usually adopted is to graft the Darwinian theory of evolution on the Sánkhyā and the Yoga doctrine of eternity of life, not as spirit, pure and simple, but as particles enclosed each in a material envelop. This envelop is technically called by our ancient philosophers *linga saríra* or 'rudimental body.' In the language of modern European science it is the 'germ of life,' or 'organic cell,' or 'protoplasm.' The Theosophists call it the 'astral body.' Whatever it is, and whatever its name, its entity is accepted by a large and daily increasing body of European philosophers, and the manner in which it has been brought to bear upon the causation of instinct by Yogis is what I desire to bring to your notice.

European philosophers have found instinct to be a stumbling-block in their way. Paley took it to be 'a propensity prior to experience.' Whately defines it to be 'a blind tendency to some mode of action, independent of any consideration, on the part of the agent, of the end to which the action leads,' and Sir William Hamilton adopts the same definition. But the latest theory is, that it is to be referred to 'experience and reasoning, both in man and lower animals.' Darwin qualifies this by adding that 'in the lower animals the reasoning is from fewer ideas, is busied about fewer objects, and is exerted with less energy.' This is, however, not enough, as it does not cover the whole ground. It bears not at all on those actions which proceed from heredity, as in the case of the retriever cocking up its ears on hearing a gun fired and running after game without any previous training, when other dogs under similar circumstances would be frightened and disposed to run away for shelter. Nor does it cover those actions which are produced immediately after birth, such as sucking on the part of an infant just born, when there has been no opportunity whatever for forming ideas, however crude or rudimentary, much less of reasoning. The ancient Hindu theory

in the case was that the *linga saríra*, or protoplasm, retains in its mind impressions of all the experiences acquired in its former lives; and these ordinarily remain latent, becoming active or vivid only when properly stimulated. These impressions are called *sañskára*. Dr. Morrell, in his *Mental Philosophy*, calls them 'residua.' He describes them thus—'When a given mental impression is produced upon us, it remains for a time before the consciousness, and then gives way to others. We know, however, that it is not *absolutely lost*; for, if proper conditions occur, the impression is renewed. The conclusion is, that there must be *something* deposited within us which subsists *permanently*, and which is equally there, whether it be at any moment the immediate object of our consciousness or not. This *something*, we term a *residuum*." Dr. Morrell, however, limits the duration of this *residuum* to the period of existence of a life. The first *residuum* is produced immediately after the first experience in life, and others follow in succession; but the whole stock at the end of a life is lost. Hindu philosophers carry the stock on from generation to generation, and so the stock is ever increasing and never ending, and our instincts are nothing more than these *residua* enlivened for each particular occasion. The eternity of the protoplasm being accepted as granted, the theory of the causation of instinct thus framed appears consistent enough. But it involves a variety of questions, religious, theological, and biological, which I am not at all disposed to take up now. I notice the theory simply because it has been revived and discussed in some Bengali publications during the past year, and leave it to such of our philosophic associates as are disposed to enquire about such matters to think over at their leisure, if they be so minded. The idea will, I am sure, appear novel to European philosophers, and it is to be hoped that they will examine it with the care which its importance deserves.

Dr. Mitra then proposed a vote of thanks to the Honorary Secretaries and to the Honorary Treasurer for their exertions on behalf of the Society.

The motion was carried unanimously.

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

President.

E. F. T. Atkinson, Esq., B. A., C. S.

Vice-Presidents.

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

Hon. H. J. Reynolds, B. A., C. S., C. S. I.

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

Secretaries and Treasurer.

J. Wood-Mason, Esq.
 Dr. A. F. R. Hoernle.
 F. E. Pargiter, B. A., C. S.
 F. W. Peterson, Esq., F. C. S.

Other Members of Council.

H. B. Medlicott, Esq., F. R. S.
 D. Waldie, Esq., F. C. S.
 C. H. Tawney, Esq., M. A.
 Babu Pratápa Chandra Ghosha, B. A.
 Dr. D. D. Cunningham.
 Dr. Mahendralál Sarkár, C. I. E.
 A. Simson, Esq.
 E. Gay, Esq., M. A., F. R. A. S.
 Pandit Maheschandra Nyáyaratna, C. I. E.
 J. Beames, Esq., C. S.

The following gentlemen were appointed Auditors to examine and report on the accounts of the past year :

J. A. Anderson, Esq.
 T. G. H. Moncreiffe, Esq.

The Meeting was then resolved into the Ordinary Monthly General Meeting.

E. F. T. ATKINSON, Esq., B. A., C. S., President, in the Chair.

The minutes of the previous meeting were read and confirmed.

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

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

1. R. D. Mehta, Esq., proposed by the Hon'ble V. N. Mandalik, C. S. I., seconded by Dr. Rájendralála Mitra, C. I. E.
2. Babu Hirálál Sen, proposed by Dr. Rájendralála Mittra, C. I. E., seconded by Babu Pratápa Chandra Ghosha, B. A.
3. Mr. Asutosh Gupta, proposed by Babu Gourdáś Baisák, seconded by F. E. Pargiter, Esq., B. A., C. S.

A letter was read from Mr. H. M. Percival accepting the office of Honorary General Secretary.

The COUNCIL reported the receipt from the Government of Bengal of the following notification containing revised rules for the working of the Indian Treasure Trove Act.

NOTIFICATION.

The 29th October 1885.—The following revised rules for the working of the Indian Treasure Trove Act (VI of 1878) have been approved by the Lieutenant-Governor, and are hereby published under section 19 of the said Act for general information, in modification of those published at page 1223 of the *Calcutta Gazette* of the 20th November 1878:—

1. The notification under section 5(a) shall be published at the Collector's catcherry, sub-divisional catcherry, Munsif's catcherry and police station within the jurisdiction of which the treasure was found, and at some conspicuous spot in the village in which it was found.

2. On receipt of any application under section 4, or on receipt of information from any person other than the finder that treasure has been found, the Collector shall report the fact to the Commissioner, stating—

- (1) name of finder;
- (2) nature of treasure, and number of coins, if any;
- (3) approximate value;
- (4) date of finding;
- (5) whether the treasure, being coin, has been acquired under section 16, or whether it is recommended that Government should acquire the treasure.

A copy of this report shall be sent to the Asiatic Society at Calcutta for information.

3. In the case of information being given by a person other than the finder, the Collector shall issue a notice under section 5(b) of the Act on the person informed against to show cause why he should not be prosecuted for not giving the required notice; and in the event of no cause being shown, the Collector shall take such further action as may seem expedient.

4. All notices under section 5 shall be served at the cost of Government.

5. On receipt of the Collector's report, the Commissioner will, if he thinks the property ought to be acquired by Government, report the case for the orders of the Board of Revenue. This rule does not apply to cases where *coins* are the property found.

6. Collectors shall *ordinarily* acquire, under section 16 of the Act (without its being necessary for them to obtain the sanction of higher authority) the whole of any coins found, whether gold, silver, or copper, that appear to be old and not of British mintage.

Explanation.—These include coins struck at Calcutta, Moorshedabad, Benares, Surat, Arcot, in the name of Shah Alum, dated 19th Juloos.

7. If for any special reasons, such as the largeness of the quantity found, or the coins being known to be of merely metal value, the

Collector considers it unnecessary to acquire the whole of the coins found, he shall, in the report mentioned in rule 2 above, state (sixthly) why he considers that the whole of the coins found need not be acquired on behalf of Government.

8. On receipt of the report, the Commissioner, if he thinks that the whole of the coins found should not be acquired, shall report the case for the orders of Government.

9. Coins acquired under section 16 of the Act shall be sent to the Asiatic Society at Calcutta, and the Society shall report to this Government the number and nature of the coins, and their probable numismatic value.

10. Collectors are empowered to purchase, otherwise than when proceeding under the provisions of the Treasure Trove Act, any coins of the age and description stated in rule 3 above, when they are less than Rs. 10 in value, on payment of a sum equal to the value of the materials of the coins, together with one-fifth of such value. Coins so purchased shall be treated in the manner described in the last section.

11. All fines levied under this Act shall be credited to Land Revenue, "Miscellaneous," and any treasure which vests in Government under section 20 or 21 shall, unless it be such as it is thought advisable for Government to retain, be sold by public auction to the highest bidder under the orders of the Commissioner, and the proceeds be credited to the above head.

12. All Commissioners and Collectors should append a paragraph to their land revenue annual reports stating whether any applications have been presented during the year under report under section 4, or any proceedings taken before the Magistrate under section 20 or 21, or under rule 10 above.

A. P. MACDONNELL,
Secretary to the Govt. of Bengal.

No. 252—14 Mis.

Copy forwarded to the Honorary Secretary, Asiatic Society, Bengal, for the information of the Society.

By order of the Lieutenant-Governor of Bengal,

R. MACPHERSON,
Offg. Under-Secy. to the Govt. of Bengal.

CALCUTTA,
The 16th January 1886.

The PHILOLOGICAL SECRETARY read:

1. A Report on 60 old copper coins forwarded by the Secretary to the Government N. W. Provinces and Oudh, with his No. $\frac{29}{11}$, dated 3rd July 1885.

1. The coins were found in the Hamirpur District. The exact find spot is not noted. They consist of 47 large and 13 small specimens, all of copper.

2. They belong to the following Sultans of Delhi:—

(1), XXXVith Sultan, *Sher Sháh*, 947-952 A. H. = 1540-1545, A. D.

a, I. type, lettered surfaces, described in E. Thomas' Chronicles, p. 402, No. 355; dated 951, specimens 3

b, II. type, square areas, with date on obverse area, see Thomas' Chronicles, p. 402, No. 356, mint Gwálior dates, 950, 951, 952, specimens 5

c, III. type, square areas with dates on margin; see Thomas' Chronicles, p. 403, No. 357, mint Nar-nól, Kalpí; dates, 950, 951 specimens 4

d, IV. type, square area, with date on obverse area, and legend *Sher Sháh Sulţán Abul-muzaffar* on reverse area; new, not in Thomas' Chronicles; mint on margin, illegible; date 951; specimen 1

13

(2) XXXVIIth Sultan, *Islám Sháh*, 952-960 A. H. = 1545-1552 A. D., type, lettered surface, Thomas' Chronicles, p. 413, No. 363.

a, dated 952², 953², 954¹, 955¹, total ... 5

b, illegible dates total ... 14

19

(3) XXXVIIIth Sultan, *Muhammad Sháh*, 961-964 A. H. = 1553-1556 A. D., 962², 963² total ... 5

(4) Moghul Sultan, *Akbar*, 963-1014 A. H. = 1556-1605 A. D.

a, large, date 968¹, 987¹, 975², 980², illegible,* total ... 10

b, small, one, dated 972¹, illegible,* total ... 6

16

3. Seven belong to Sultans of Gujrat; viz.:

1, Sultan *Mahmúd Sháh bin Latif*, 944-961 A. H. = 1537-1553 A. D. specimens 4

2, Undetermined, specimens 3

7

Grand total ... 60

A communication was read from Kavirája Shyamaldás, Private Secretary to His Highness the Maháráná of Udaipur, forwarding 2 ancient coins, with a descriptive note.

Dr. R. Mitra read the following extract from a letter from Bábu Niranjan Mukarji, dated Mandi, August 1885, and submitted to the meeting the facsimiles of inscriptions therein referred to.

"I am at present a guest of His Highness Rájá Bijay Sen Bahádur here. He told me that he is descended from the Sen Rájás of Gaur, and that his ancestors when attacked by Bakhtiar Khilji fled from Gaur to Nava Dweep, and thence went to Bikrampur, which place they were also obliged to abandon on account of the oppression of the Muhammadans. From Bengal his ancestors first came to the Punjab; and Rup Sen founded the present city of Rúper after his own name. At Rúper they lived for a long time, till again attacked by their old enemies, the head of the family Babu Sen took shelter in these hills. One branch embraced the Muhammadan religion to save themselves from further persecution. They now own the chiefship of Kastewar, within the Kashmir territory. Another branch of this family is the Rájá of Suket. This place was formerly called Manipur, and, being the Ásrama of Mándava Rishi is now called Mandi. Since then this family is now exercising sovereign power over a large part of these hills. I asked the Rájá if he could show me any document or engraving or anything else by which this tradition of his could be substantiated. He replied that there was nothing in his possession by which he could prove it. On further inquiry I learnt from him that his ancestors, when they first came here from Rúper, built two temples, and both of them still exist. They are made of stone, and there are some inscriptions on them which none can decipher here; also there are some stone monuments which they call here Barcillas. In some of them there are also inscriptions in some unknown character. I have visited the temples: they are certainly very old and made of stone. One is of Panchamukhi (5-faced) Mahádeva and the other of Triambaka. Both the temples have been made in the old Hindu style, and are sculptured over with the figures of different Hindu deities. The Barcillas are only slabs of large stones standing upon the earth on the river side where the funeral ceremonies of the former Rájás had taken place. I have taken impressions of all these inscriptions and send them to you, enclosed herein. Please try if you can decipher them. The Rájá Bijay Sen is a Surya Vansee Chattri, and so, he says, were also his ancestors in Bengal."

Dr. Mitra said that the tradition referred to was of great interest in connection with the facts which he brought to the notice of the Society many years ago regarding the caste of the Sena Rájás of Bengal. Those

facts left no room for doubt that the Rájás were Kshatriyas, and it was gratifying to him to find that his inference was so well borne out by the scions of those Rájás, and in places so far away from Bengal. Judging by the character of the inscriptions they were of the date which the tradition assigned them; but the facsimiles were very smudgy and full of lacunæ, and he could not read any date in them. The genealogy of the dedicators of the temples could not also be very satisfactorily read. A few squeezes from the inscriptions would perhaps help the reading better, but Bábu Niranján Mukarjī having come away from Mandi none could be obtained. The Barcillas are obviously Satí stones.

The following papers were read—

1. *On a second species of Uredine affecting the Himalayan Spruce fir (Abies Smithiana, Forbes.)*—By SURGEON A. BARCLAY, M. B., Bengal Medical Service.

The paper will be published in full in Part II of the Journal for 1886.

2. *The Decline of the Sámánis.*

(Abstract.)

This paper is an addition to the numerous contributions made by numismatists towards a history of the Muhammadan empire as established by coins comprising the leading cabinets of the world. For such a purpose every coin accurately described, Mr. Oliver thinks, may prove of value. In order to make such descriptions intelligible and to invest the dry bones of numismatics with something of interest Mr. Oliver has attempted to sketch in this paper an outline of the decline of one, and the rise of another dynasty on the banks of the Oxus. Máwará-un-Nahr, better known as Transoxania, comprises the territory bounded on the north by Tashkand, on the east by Khoḳand, on the west by Balkh and on the south by Khiva; the capital of which was Samarkhand, and under the Sámánis, Bukhárá.

The authorities used by Mr. Oliver are mainly Tabaḳát-i-Násiri of Minháj-i-Saráj, with Major Raverty's notes, the Kitab-i-Yarnim of Al Utbi, and Vambéry's History of Bukhárá with selected translations from other chronicles.

3. *The Birth-day of Akbar.*

(Abstract.)

In this paper Kavirája Shyamaldás endeavours to ascertain from various data collected by him, the authentic date on which the Emperor Akbar was born. The Persian authors whom he has consulted are not

at all unanimous on this point, and the English authorities Dow, Erskine, Elliot and others appear simply to have followed Abul Fazl without examination. The conclusion at which the author arrives, after having carefully sifted the evidence on the subject at his disposal, is that Akbar was born on the 14th Shaban A. H. 949 = 23rd Nov. A. D. 1542.

The paper will be published in full in the Journal Part I for 1886.

4. *List of the Lepidoptera Heterocera, collected in Tavoy and Siam in 1884-85 by the Indian Museum Collector, under C. E. PITMAN, Esq., C. I. E., Chief Superintendent of Telegraphs. Communicated by the NATURAL HISTORY SECRETARY.*

The paper will be published in full in Part II of the Journal for 1886.

LIBRARY.

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

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

- Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VII. No. 4, November, 1885.
- . —————. American Journal of Philosophy, Vol. VI, No. 3, October, 1885.
- . —————. Circulars, Vol. V, No. 45, December, 1885.
- Berlin. Entomologische Verein,—Zeitschrift, Vol. XXIX, No. 2.
- Bombay. Indian Antiquary,—Vol. XIV, No. 177, December, 1885; Vol. XV, No. 179, January, 1886.
- Brussels. Musée Royal d'Histoire Naturelle de Belgique,—Vol. IV, No. 1.
- Calcutta. Original Meteorological Observations,—September, 1885.
- Chicago. American Antiquarian and Oriental Journal,—Vol. VII, No. 6, November, 1885.
- Edinburgh. Scottish Geographical Magazine,—Vol. I, Nos. 4—12, April to December, 1885.
- Havre. Société de Géographie Commerciale,—Bulletin, No. 5, September to October, 1885.

- Lahore. Anjuman-i-Punjab,—Journal (English section), Vol. VI, Nos. 1—5.
- Liverpool. Literary and Philosophical Society,—Proceedings, Vol. XXXVIII.
- London. Academy,—Nos. 711—715.
- . Anthropological Institute of Great Britain and Ireland,—Journal, Vol. XV, No. 2, November, 1885.
- . Athenæum,—Nos. 3034—3038.
- . Geological Society,—Quarterly Journal, Vol. XLI, Part 4, November, 1885.
- . ————. List of Fellows, November 1st, 1885.
- . Institution of Civil Engineers,—Minutes of Proceedings, Vol. LXXXII.
- . Institution of Mechanical Engineers,—Proceedings, No. 4, August, 1885.
- . ————. Brief subject-Index, Vols. LIX—LXXXII. Sessions 1879-80 to 1884-85.
- . ————. General Index to Proceedings, 1874—1884.
- . Nature,—Vol. XXXIII, Nos. 842—846.
- . Royal Astronomical Society,—Monthly Notices, Vol. XLV, No. 9.
- . Royal Geographical Society—Proceedings, Vol. VII, Nos. 10 and 11, October and November, 1885.
- . Royal Microscopical Society,—Journal, Vol. V (series II), Part 5, October, 1885.
- . Royal Society,—Proceedings, Vol. XXXVIII, No. 238.
- . Statistical Society,—Journal, Vol. XLVIII, Part 3, September, 1885.
- . Zoological Society,—Proceedings, Part III, 1885.
- Munich. Akademie der Wissenschaften,—Abhandlungen, Historische Classe, Vol. XVII, No. 2.
- . ————. Sitzungsberichte, Mathematisch-Physikalische, No. 4, 1884; No. 1, 1885.
- . ————. Philos-Philol-Historische Classe, Nos. 5 and 6, 1884; No. 1, 1885.
- Paris. Société d'Anthropologie,—Bulletins, Vol. VIII (series 3rd), No. 3.
- . Société de Géographie,—Compte Rendu des Séances, Nos. 19 and 20, 1885.
- . ————. Bulletin, Vol. V (series 7th), No. 3.
- Yokohama. Asiatic Society of Japan, Transactions, Vol. XIII, Part 2.

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presented by the Authors, Translators, &c.

DE QUATREFAGES, A. *L'Espèce Humaine.* 8vo. Paris, 1883.

————— M. *Les Polynésiens et Leurs Migrations.* 4to. Paris, 1884.

DOUGLAS, J. C. *A Hand-Book for Bee-keeping in India.* Calcutta, 1884.

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GRIERSON, G. A. *Seven Grammars of the Bihari language, Part V.* 8vo. Calcutta, 1885.

LYMAN, B. S. *The Character of the Japanese: A Study of Human nature.* 8vo. 1885.

ROY, P. C. *The Mahabhārata, Part 20.* 8vo. Calcutta, 1886.

MISCELLANEOUS PRESENTATIONS.

Catalogue of the Lizards in the British Museum, Vol. II. 8vo. London, 1885.

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Lectures on Mahomedan Law, by Syud Amir Ali, M. A. (The Tagore Law Lectures for 1884). 8vo. Calcutta, 1885.

CALCUTTA UNIVERSITY.

A Collection of Papers on Bee-keeping in India. Fcp. Calcutta, 1883.

J. C. DOUGLAS, Esq.

General Report on Public Instruction in Bengal. Fcp. Calcutta, 1885.

Annual Report of Emigration from the Port of Calcutta to British and Foreign Colonies for 1884-85. Fcp. Calcutta, 1885.

GOVT. OF BENGAL.

Forest Department Code. 8vo. Calcutta, 1886.

Further correspondence respecting Central Asia. No. 4, 1885. Fcp. London, 1885.

Papers on the Silver question. Fcp. London, 1885.

Parliamentary Papers. East India Army System. Fcp. London, 1885.

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Twenty-first Annual Report of the Sanitary Commissioner with the Government of India, 1884. Fcp. Calcutta, 1885.

GOVT. OF INDIA, SANITARY COMMISSIONER.

Administration Report of the Madras Presidency for the year 1884-85. Fcp. Madras, 1885.

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Catalogue of Siwalik Vertebrata in the Indian Museum, Part 1, Mammalia. 8vo. Calcutta, 1885.

INDIAN MUSEUM, CALCUTTA.

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The City of Washington, its origin and Administration. By John Addison Porter. 8vo. Baltimore, 1885.

JOHNS HOPKINS UNIVERSITY, BALTIMORE.

Anuario del Observatorio Astronómico Nacional de Tacubaya para el año de 1886. 8vo. Mexico, 1885.

SECRETARIA DE FOMENTO, MEXICO.

Telegraph Map, 1885. Sheet.

TELEGRAPH STORES, ALIPUE, CALCUTTA.

International Meteorological Observations, October, 1884. 4to. Washington, 1885.

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Allahabad. Punjab Notes and Queries,—Vol. III, Nos. 27 and 28, December, 1885 and January, 1886.

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———. Hesperos,—Vol. IV, Nos. 106—108.

———. Literarisches Centralblatt,—Nos. 40—46, 1885.

———. Literatur-Blatt für Orientalische Philologie,—Vol. II, Nos. 7—9.

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———. Chemical News,—Vol. LII, Nos. 1360—1364.

- London. Entomologist,—Vol. XVIII, Nos. 269 and 270, October and November, 1885.
- . Entomologist's Monthly Magazine,—Vol. XXII, Nos. 257 and 258, October and November, 1885.
- . Ibis,—Vol. III (series 5th), No. 12, October, 1885.
- . Journal of Botany,—Vol. XXIII, No. 274, October, 1885.
- . London, Edinburgh, and Dublin Philosophical Magazine, and Journal of Science,—Vol. XX, Nos. 125 and 126, October and November, 1885.
- . Mind,—Vol. XI, No. 41, January, 1886.
- . Nineteenth Century,—Vol. XIX, No. 107, January, 1886.
- . Publishers' Circular,—Vol. XCVIII, Nos. 1158 and 1159.
- . Quarterly Journal of Microscopical Science,—Vol. XXV, No. 50, October, 1885.
- . Quarterly Journal of pure and applied Mathematics,—Vol. XXI, No. 82, October, 1885.
- . Quarterly Review,—General Index to Parts 1 and 2, Vols. CXXI—CLIX.
- . Society of Arts,—Journal, Vol. XXXIV, Nos. 1726—1730.
- New Haven. American Journal of Science,—Vol. XXX, Nos. 178 and 179, October and November, 1885.
- Paris. Academie des Sciences,—Comptes Rendus des Séances, Vol. CI, Nos. 12—18.
- . Annales de Chimie et de Physique, Vol. VI (series 6th), October and November, 1885.
- . Journal des Savants,—September and October, 1885.
- . Revue Critique,—Vol. XX, Nos. 39—44.
- . Revue des Deux Mondes,—Vol. LXXII, No. 4; Vol. LXXIII, No. 1.
- . Revue de Linguistique,—Vol. XVIII, No. 4.
- . Revue Scientifique,—Vol. XXXVI, Nos. 13—19.
- Vienna. Orientalische Museum,—Oesterreichische Monatsschrift für den Orient, Vol. XI, No. 12.

BOOKS PURCHASED.

- BOHTLINGK, OTTO. Sanskrit Wörterbuch in Kurzerer Fassung, Part VI, No. 1. 4to. St. Petersburg, 1885.
- DISTANT, W. L. Rhopalocera Malayana, Part X. 4to. London, 1885.
- FALLON, S. W. A. Dictionary of Hindu Proverbs. 8vo. Benares, 1885.
- Report of H. M. S. "Challenger" Zoology, Vol. XII. 4to. London, 1885.
- WHERRY, REV. E. Commentary on the Quran, Vol. III. 8vo. London, 1885.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MARCH, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 3rd March, 1886, at 9 P. M.

E. T. ATKINSON, Esq., C. S., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Twenty presentations were announced, as detailed in the appended Library list.

In accordance with Rule 7 of the Society's Bye-Laws the following gentlemen, duly proposed and seconded at the last meeting of the Society, were balloted for and elected Ordinary Members:—R. D. Mehta, Esq., proposed by Mr. Mandalik, seconded by Dr. R. Mitra, C. I. E.; Babu Hirálál Sen, proposed by Dr. R. Mitra, C. I. E., seconded by Babu P. C. Ghosha, B. A.; Áshutosh Gupta, Esq., C. S., proposed by Babu Gaurdás Bysák, seconded by F. E. Pargiter, Esq., C. S.

In accordance with Rule 5 of the Society's Bye-Laws the Secretary submitted the names of the following gentlemen as candidates for Ordinary Membership:—J. F. Fleet, Esq., C. S., proposed by Dr. A. F. R. Hoernle, seconded by E. T. Atkinson, Esq., C. S.; Babu Rádhábalabha Chaudhuri, proposed by Babu P. C. Ghosha, seconded by Dr. M. L. Sarkár.

The following gentleman has intimated his wish to withdraw from the Society:—Surgeon Major C. J. J. Jackson.

The PHILOLOGICAL SECRETARY exhibited a collection of ancient Copper Coins sent by Rai Shyam Bahadur, Vakil, Chupra.

The SECRETARY read the names of the following gentlemen who had been appointed by the Council to serve on the several Committees during the current year:

FINANCE COMMITTEE.

Dr. Rájendralála Mitra.	J. C. Douglas, Esq.
Hon'ble H. J. Reynolds.	Lt.-Col. J. Waterhouse.
H. B. Medlicott, Esq.	T. G. H. Moncrieffe, Esq.

LIBRARY COMMITTEE.

Dr. Rájendralála Mitra.	Lt.-Col. J. Waterhouse.
Hon'ble H. J. Reynolds.	C. H. Tawney, Esq.
H. F. Blanford, Esq.	Dr. Mahendralála Sarkár.
H. B. Medlicott, Esq.	Babu Pránnáth Sarasvati, Pundit.
D. Waldie, Esq.	Babu Pratápa Chandra Ghosha.

PHILOLOGICAL COMMITTEE.

Dr. Rájendralála Mitra.	Col. A. C. Toker.
Nawab Abdul Latif, Khán Bahádur.	J. Boxwell, Esq.
J. Beames, Esq.	Moulvie Kudábaksh Khán Bahádur.
F. S. Growse, Esq.	Col. H. J. Jarrett.
Dr. G. Thibaut.	Pundit Maheschandra Nyáyaratna.
C. J. Lyall, Esq.	Babu Haraprasád Sástri.
G. A. Grierson, Esq.	Babu Pratápa Chandra Ghosha.
C. H. Tawney, Esq.	Babu Nilmani Mukherji.
Sayyid Ahmad, Khán Bahádur.	Dr. Führer, Lucknow.
	Dr. Mahendralála Sarkár.

NATURAL HISTORY COMMITTEE.

H. B. Medlicott, Esq.	L. de Nicéville, Esq.
D. Waldie, Esq.	Babu Pramatha Náth Bose.
Dr. G. King.	Dr. Mahendralála Sarkár.
T. E. Peal, Esq.	Dr. J. Scully.
R. D. Oldham, Esq.	E. C. Cotes, Esq.

PHYSICAL SCIENCE COMMITTEE.

H. F. Blanford, Esq.	Rev. Father Lafont.
H. B. Medlicott, Esq.	Dr. Mahendralála Sarkár.
D. Waldie, Esq.	R. D. Oldham, Esq.
Lt.-Col. J. Waterhouse.	E. J. Jones, Esq.
Alex. Pedler, Esq.	

COINS COMMITTEE.

Dr. Rájendralála Mitra.	C. J. Rodgers, Esq.
J. H. Rivett-Carnac, Esq.	V. A. Smith, Esq.
Major W. T. Prideaux.	

HISTORY AND ARCHÆOLOGICAL COMMITTEE.

Dr. Rájendralála Mitra.	F. S. Growse, Esq.
Hon'ble H. J. Reynolds.	Babu Pránnáth Sarasvati, Pundit.
Kavirája Shyamaldás.	J. H. Rivett-Carnac, Esq.
R. R. Bayne, Esq.	Capt. R. C. Temple.
Babu Pratápa Chandra Ghosha.	Amir Ali, Esq.

The following papers were read—

1. *On a new species of Uredine parasitic on Cedrus deodara.*—By A. BARCLAY, M. B.

This paper will be published in full, with illustrations in the forthcoming number (2) of the Journal Pt. II, for the current year.

2. *On place-names in Merwara.*—By R. S. WHITEWAY.

(Abstract.)

In this paper the local names of places in the British District of Merwara have been collected to explain the peculiarities of the local form of Hindi in use in the district, and also to illustrate the genesis of such names in general from some peculiarity in the history, locality or physical conformation. These names are of three classes—those of villages, tanks and hill streams and valleys. The British district of Merwara is a round strip of country along the main line of the Aravalis and separates Meywar from Marwar.

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

3. *On South Indian Coins.*—By CAPTAIN R. H. C. TUFNELL, Madras Staff Corps.

The author sends a collection of fanams from Mysore and other places in Southern India for inspection of members of the Society, and will be glad to exchange those of which he has duplicates for Northern Indian coins with any member who wishes to do so. The collection comprises issues of the Mysore state and the smaller states once independent but now included within its boundaries, also coins of the Muhammadan dynasty in Mysore, of the Gajapati sovereigns of Orissa, of the Pandyan kings of the 11th and 12th centuries, of the Sinhalese Chola dynasty, and several other types which have not yet been identified, and a few of the later Muhammadan conquerors.

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

MR. WOOD-MASON exhibited living specimens of the Caterpillars of the 'Endi' silk-moth (*Philosamia ricini*) and of the Tusser Moth (*Antheræa mylitta*), and made some remarks upon them.

The PRESIDENT announced that it had been suggested that the meetings of the Society might be made more interesting if subjects for conversation were brought forward after the disposal of the regular business; the meeting being then resolved into a *Conversazione* for the discussion of subjects to be fixed on beforehand:—Natural History subjects being taken up at one meeting, and Philological subjects at another, alternately.

LIBRARY.

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

TRANSACTIONS, PROCEEDINGS, AND JOURNALS,

presented by the respective Societies and Editors.

- Baltimore. Johns Hopkins University,—*American Chemical Journal*, Vol. VII, No. 5, December, 1885.
- Bombay. *Indian Antiquary*,—Vols. XIV, Part 178, December 1885, Part 2; XV, Part 180, February, 1886.
- Calcutta. Geological Survey of India,—*Records*, Vol. XIX, Part 1.
- Chicago. *American Antiquarian and Oriental Journal*,—Vol. VIII, No. 1, January, 1886.
- Dublin. Royal Geological Society,—*Journal*, Vol. VI, Part 3.
- . Royal Irish Academy,—*Proceedings, Polite Literature and Antiquities*, Vol. II, (ser. II,) Nos. 5 and 6.
- . ———. ———. *Science*,—Vol. IV, (ser II), Nos. 1—4.
- . ———. *Transactions*,—*Science*, Vol. XXVIII, Nos. 14—20.
- Edinburgh. *Scottish Geographical Magazine*,—Vol. II, No. 2, February, 1886.
- Florence. *Società Africana D'Italia*,—*Bulletins*, Vol. I, No. 6.
- The Hague. Koninklijk Instituut Taal-Laud-en Volkenkunde van Nederlandsch-Indië,—*Bijdragen*, Vol. V, No. 1.
- Havre. Société de Géographie Commerciale,—*Bulletin*, No. 6, November and December, 1885.
- Lahore. Anjuman-i-Punjab,—*Journal (English section)*, Vol. VI, Nos. 6—8.
- London. *Academy*,—Nos. 716—718.
- . *Athenæum*,—Nos. 3039—3041.
- . *Nature*,—Vol. XXIII, Nos. 847—849.

- London. Royal Astronomical Society,—Monthly Proceedings, Vol. XLVI, No. 1, November, 1885.
- . Royal Geographical Society,—Proceedings, Vol. VII, No. 12, December, 1885.
- . Royal Microscopical Society,—Journal, Vol. V (ser II), Part 6, December, 1885.
- . Royal Society,—Proceedings, Vol. XXXIX, No. 239.
- Manchester. Literary and Philosophical Society,—Memoirs, 3rd Series, Vol. VIII.
- . ————. Proceedings,—Vols. XXIII and XXIV.
- Paris. Société de Géographie,—Bulletin, Vol. VI, (series VII), No. 4.
- . ————. Comptes Rendus des Séances,—Nos. 1—3, 1886.
- Pisa. Società Toscana di Scienze Naturali,—Atti, Processi Verbali, Vol. IV, pages 125—145.
- Rome. Società Degli Spettroscopisti Italiani,—Memorie, Vol. XIV, Nos. 10 and 11, October and November, 1885.
- Roorkee. Indian Forester,—Vols. XI, Nos. 11 and 12; XII, No. 1; November and December, 1885 and January, 1886.
- . Professional papers on Indian Engineering,—Vol. III, (series III), No. 12, December, 1885.
- Shanghai. Royal Asiatic Society,—Journal of the China Branch, Vol. XX, No. 4.
- Vienna. K. K. Geologische Reichsanstalt,—Jahrbuch, Vol. XXXV, No. 4.
- . ————. Verhandlungen,—Nos. 10—18, 1885; No. 1, 1886.
- . Zoologisch-botanische Gesellschaft,—Verhandlungen, Vol. XXXV, No. 2.
- Zagreb. Arkeologickoga Druztva,—Viestnik, Vol. VIII, No. 1.

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presented by the Authors, Translators, &c.

- DUKA, DR. TIVADAR. Körösi Csoma Sandor Dolgozatai. 8vo. Budapest, 1885.
- . THEODORE. Life and Works of Alexander Csoma de Körös. 8vo. London, 1885.
- GIBBS, JAMES. On some rare and unpublished coins of the Pathan and Mogul Dynasties of Dehli. 8vo. London, 1885.
- HAECKEL, PROF. ERNST. Die Geometrie der Radiolarien. 8vo. Jena, 1883.
- . ————. Die Ordnungen der Radiolarien. 8vo. Jena, 1883.
- . ————. Gesammelte Populäre Vorträge aus dem Gebiete der Entwicklungslehre, Vols. I and II. 8vo. Bonn, 1878 and 1879.

HAECKEL, PROF. Neue Gastracaden der Tiefsee, mit Caement-Skelet. 8vo. Jena, 1883.

—————. Studien zur Gastraea-Theorie. 8vo. Jena, 1877.

JEE, BHAGNAT SINH. Journal of a Visit to England in 1883. 8vo. Bombay, 1886.

OPPERT, G. Ne Sutor ultra Crepidam :—In self-defence. 8vo. Madras, 1884-85.

MISCELLANEOUS PRESENTATIONS.

Les Récents voyages des Néerlandais a la Nouvelle-Guinée. 8vo. Versailles, 1885.

PRINCE ROLAND BONAPARTE.

Tagore Law Lectures, 1884-85, by Krishna Komal Bhattacharyya. 8vo. Calcutta, 1885.

CALCUTTA UNIVERSITY.

Returns of Railway Borne Traffic during the quarter ending 30th September. 1885. Fcp. Nagpur, 1886.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Draft Rules under section 24 of the Indian Steam Ship Act, VII of 1884. Fcp. Calcutta, 1885.

Report on the Administration of Bengal, 1884-85. Fcp. Calcutta, 1886.

GOVERNMENT OF BENGAL.

Manual of the Administration of the Madras Presidency, Vol. II. Fcp. Madras, 1885.

Report on the working of the Government Central Museum for the year 1884-85. Fcp. Madras, 1885.

GOVERNMENT OF MADRAS.

International Meteorological Observations, November, 1884. 4to. Washington, 1885.

Monthly Weather Review, October and November, 1885. 4to. Washington, 1885.

GOVT. OF INDIA—METEOR. REPORTER.

Scientific Memoirs by Medical Officers of the Army of India. Fcp. Calcutta, 1885.

GOVT. OF INDIA—SANITARY COMMISSIONER.

Report on the Administration of the N. W. Provinces and Oudh for the year ending 31st March, 1885. Fcp. Allahabad, 1886.

GOVERNMENT OF N. W. PROVINCES.

The Theory and Practice of Hydro-Mechanics. 8vo. London, 1885.

INSTITUTION OF CIVIL ENGINEERS, LONDON.

Irish Lexicography, by Robert Atkinson. (Todd Lecture series), Vol. II, Part 1. 8vo. Dublin, 1885.

ROYAL IRISH ACADEMY, DUBLIN.

Meteorological Observations, July to December, 1885. Sheet. Calcutta, 1886.

ST. XAVIER'S COLLEGE, CALCUTTA.

Sailing directions and Chart of False Point Harbour by E. W. Petley, R. N. 8vo. and Sheet. Calcutta, 1886.

CAPT. A. W. STIFFE, I. M.

Skeleton Map of Calcutta, town and Suburbs and Baranagore. Sheet. Calcutta, 1886.

SURVEYOR GENERAL OF INDIA.

PERIODICALS PURCHASED.

- Allahabad. Punjab Notes and Queries,—Vol. III, No. 29, February, 1886; and Index to Vol. II.
- Berlin. Deutsche Litteraturzeitung,—Vol. VI, Nos. 46—51.
- Cassel. Botanisches Centralblatt,—Vol. XXIV, Nos. 7—11.
- Giessen. Jahresbericht über die Fortschritte der Chemie,—No. 5, 1883.
- Göttingen. Gelehrte Anzeigen,—Nos. 22—24, 1885.
- . Nachrichten,—No. 9, 1885.
- Leipzig. Annalen der Physik und Chemie,—Beiblätter, Vol. X, No. 1.
- . Hesperos,—Vol. IV, Nos. 109 and 110.
- . Literarisches Centralblatt,—Nos. 47—52, 1885.
- . Literatur-Blatt für Orientalische Philologie,—Vol. II, No. 4.
- London. Annals and Magazine of Natural History,—Vol. XVI, No. 96, December, 1885.
- . Chemical News,—Vol. LIII, Nos. 1365—1367.
- . Entomologist,—Vol. XVIII, No. 271, December, 1885.
- . Entomologist's Monthly Magazine,—Vol. XXII, No. 259, December, 1885.
- . Journal of Botany,—Vol. XXIII, No. 276, December, 1885.
- . London, Edinburgh and Dublin Philosophical Magazine,—Vol. XX, No. 127, December, 1885.
- . Messenger of Mathematics,—Vol. XV, Nos. 5 and 6, September and October, 1885.
- . Nineteenth Century,—Vol. XIX, No. 108, February, 1886.
- . Numismatic Chronicle,—Part 3, 1885.
- . Publishers' Circular,—Vol. XLIX, Nos. 1160 and 1161.
- . Quarterly Journal of Microscopical Science,—Vol. XXVI, No. 101, November, 1885.
- . Quarterly Review,—Vol. CLXII, No. 323, January, 1886.
- . Society of Arts,—Journal, Vol. XXXIV, Nos. 1731—1733.
- . Westminster Review,—Vol. LXIX, No. 137, January, 1886.
- New Haven. American Journal of Science,—Vol. XXX, No. 180, December, 1885.

- Paris. Academie des Sciences,—Comptes Rendus des Séances, Vol. CI, Nos. 19—24.
- . Annales de Chimie et de Physique,—Vol. VI (series 6th), December, 1885.
- . Journal des Savants,—November, 1885.
- . Revue Critique,—Vol. XX, Nos. 45—51.
- . Revue des Deux Mondes,—Vol. LXXIII, No. 2.
- . Revue Scientifique,—Vol. XXXVI, Nos. 20—25.
- Philadelphia. Manual of Conchology,—Parts 4 and 28 with coloured Plates.
- Vienna. Orientalische Museum,—Oesterreichische Monatschrift für den Orient,—Vol. XII, No. 1.

BOOKS PURCHASED.

- PETER CAMERON. A Monograph of the British Phytophagous Hymenoptera, Vol. II, 8vo. 1885.
- R. HARTMANN. Anthropoid Apes. 8vo. London, 1885.
- PETRIE W. M. FLINDERS. Second Memoir of the Egypt Exploration Fund, Tunis, Part I, 1883-84. London, 1885.
- Report of H. M. S. "Challenger," Zoology, Vol. XIII. 4to. London, 1885.
- TEMPLE, CAPT. R. C. The Legends of the Punjab, Vol. III, Nos. 26 and 27. 8vo. Bombay, 1886.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR APRIL, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 7th April, 1886, at 9 P. M.

E. T. ATKINSON, Esq., C. S., President in the Chair.

The minutes of the last meeting were read and confirmed.

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

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

J. F. Fleet, Esq., C. S.

Bábu Rádháballabha Chaudhuri.

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

1. Bábu Ásutosh Mukhopádhyaý, M. A., F. R. A. S., proposed by Dr. R. Mitra, seconded by H. M. Percival, Esq.

2. Capt. E. H. Molesworth, Commandant, Police Levy, Debrugarh, Assam, proposed by E. T. Atkinson, Esq., C. S., seconded by Dr. A. F. R. Hoernle.

The following gentlemen have intimated their wish to withdraw from the Society: L. J. R. Brace, Esq., T. Gore Browne, Esq., Sir Auckland Colvin.

The PHILOLOGICAL SECRETARY exhibited 2 ancient copper coins sent by Rai Shyam Bahádur, Vakil, Chupra.

The PHILOLOGICAL SECRETARY read Reports on the following finds of ancient coins, *viz.* :—

I, Report on 17 coins forwarded by the Deputy Commissioner of Jhelum, with his No. 664, dated 29th Sept. 1885.

G

1, The find-place is not specified ; somewhere in the Jhelum District.
2, Sixteen of the coins are of silver, mostly large thin pieces, of the weight of about 8 annas ; one is a small square copper piece.

	No. of specimens.
3, They belong to the following Moghul Sultans :—	
1, I <i>Bábar</i> (<i>Zahíruddín Muḥammad</i>), A. H. 932-937 = A. D. 1526-1530 ; Mint and date illegible ; ...	2
2, II <i>Humáyún</i> (<i>Muḥammad</i>), A. H. 937-963 = A. D. 1530-1556, of slightly varying types ; one speci- men dated 946 ; mints and dates of others not legible 	11
3, <i>Anonymous</i> , crude pieces with the Kalima on both faces 	3
4, Illegible copper piece 	1
Total, 	17

II, Report on eight coins forwarded by the Deputy Commissioner of Gujrat, with his No. 1312, dated 25th Sept. 1886.

1, The coins were found buried in Mouzah Hail, Tahsil Kharian, District Gujrat.

2, Seven of them are of silver : one is a forgery, being made of copper and silvered over.

3, They are rupees of the following Moghul Sultans of Delhi :—

	No. of specimens.
1, VI, AURANGZIB, A. D. 1658-1707 ; Mint : Sháhjehán- ábád, date 1118, reign 49, 	1
2, XIII MUHAMMAD SHÁH, A. D. 1719-1748 ; of two different types : <i>viz.</i> —	
<i>a</i> , <i>Sahib Qirán</i> type, Mint Sháhjehánábád, dates partially legible, reigns 3, 8, 11, 15 ...	4
<i>b</i> , <i>Bádsháh Gházi</i> type ; Mint illegible, dates 1153 ; reigns 4, 23, 26 	3

N. B.—One of the last mentioned is the forgery.

Total,	8
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III, Report on 104 silver coins forwarded by the Deputy Commissioner of Nimar, Central Provinces, with his No. 1026, dated Khandwáh, the 2nd July 1885.

1, The find place is not stated. It is as a rule desirable that this information should be supplied.

2, They are rupees of the following Moghul Emperors of Delhi:—

	No. of specimens.
1, V, <i>Sháh Jehán</i> , A. H. 1037—1068 = A. D. 1627-1658, Mints and dates illegible; all bad specimens ...	6
2, VI, <i>Aurangzib</i> , A. H. 1068-1118 = A. D. 1658-1707; a, They are of two different types, and of various mints and dates, mostly of Súrat ...	40
b, These are single specimens of the following five Mints: Golkondah, Aurangábád, Ajmir, Ah- medábád, Akbarnagar ...	5
	— 45
3, VIII <i>Bahádur Sháh</i> , A. H. 1118-1124 = A. D. 1707-1712; of the following Mints: Barhánpur, Kambáyat, Akbarábád, Súrat, Bareilly; various dates ...	5
4, IX <i>Jehándar Sháh</i> , A. H. 1124 = A. D. 1712; Mint: Khujastah Banyád, date 1124, reign 1 ...	1
5, X <i>Farrokh Sir</i> , A. H. 1124-1131 = A. D. 1712-1719; of two different types, and of various mints (mostly Súrat) and dates ...	17
6, XII <i>Rafi'uddaulat</i> or <i>Sháh Jehán II</i> , A. H. 1131 = A. D. 1719; Mint: Mustaqir ul Khiláfat Akba- rábád; date 1131, reign 1 ...	1
7, XIII, <i>Muhammad Sháh</i> , A. H. 1131-1161 = A. D. 1719-1748; of two different types, and of various Mints (mostly Súrat and Barhánpur) and dates...	29
	Total, 104

IV, Report on a gold coin, forwarded by the Collector of Nuddea, with his No. 2246G., dated Krishnagar, the 29th October 1885.

1, The coin was found in the Ranaghat Subdivision.

2, It is not a Burmese coin with the figure of Buddha, as described in the Collector's letter, but one of Nára Gupta, an ancient ruler of Bihár and Bengal. His exact date and allocation is still uncertain; but he is certainly one of the later Gupta line, and cannot be placed earlier than A. D. 400, if the end of the second century be accepted as the initial epoch of the rise of the earlier Gupta line.

3, This type of coin is fully described in the *Journal of the As. Soc. Bengal*, Vol. LIII, Part I, p. 201.

Obv. Figure of king to left, bow in l., arrow in r. hand, and bird standard, as in the "archer" coins of the earlier Chandra Gupta. Under the left arm, the letter न्ना nára; between the legs न्नु gu. Around the margin there appears to have been a legend, which is almost entirely clipped away.

Rev. Goddess (Lakshmi) on lotus flower seat, with flower in l., and fillet in r. hand. Legend: बाबादित्य báláditya.

V, Report on 32 coins, forwarded by the Deputy Commissioner of Raipur, with his No. 4712, dated 9th Oct. 1885.

1, They were "found in a wall of a house which was being pulled down at Dhamtari" in the Raipur District. They are all of silver.

2, They belong to the following Moghul Sultans of Delhi:—

	No. of specimens.
1, V. <i>Sháh Jehán</i> , A. H. 1037-1068 = A. D. 1627-1658; Mints: Súrat, Lahor; reign (on one) 31; bad specimens	3
2, VI. <i>Aurangzib</i> , A. H. 1068-1118 = A. D. 1658-1707; of various Mints (Patna, Súrat, Etáwah, Bijapur, Kaṭak, etc.) and dates (1091 ¹ , 1100 ² , 1106 ³ , 1111 ⁴ , 1112 ⁵); indifferent specimens	16
3, X, <i>Farrokh Sír</i> , A. H. 1124-1131 = A. D. 1712-1719; Mint; illegible; date 1130, reign 7; indifferent specimen	1
4, XIII, <i>Muḥammad Sháh</i> , A. H. 1131-1161 = A. D. 1719-1788; various Mints (Sháhjehánábád, Mur- shidábád, etc.) and dates (1131 ¹ , 1133 ² , 1137 ³ , 1138 ⁴); indifferent specimens	12
Total, ...	32

VI, Report on 41 coins forwarded by the Collector of Hooghly with his No. 1759, dated 20th February 1886.

1. The coins were found in Khas Mehal Belcooli, Moujah Chuckerberia, Thana Sibpore, District Howrah.

2. They are all Rupees of the Emperor Sháh Alum, who reigned from A. H. 1173, A. D. 1759. They were all minted in Murshidábád, but are of various dates, which do not always agree with the numbers of the regnal years; thus:—

			No. of Specimens.
1, date 1184, reign 11 correct	...	...	2
2, date 1885, reign 12, correct	...	...	9
3, date lost; reign 12, probably correct	...	...	10
4, date 1192, reign 19, correct	...	...	13
5, Reign 12, but dates 1186, 1187, 1188, incorrect	...	...	7
	Total,	...	41

VII, Report on four copper coins, forwarded by the Divisional Magistrate of Mirzapur, with his No. 67, dated 29th October 1885.

xvii

1, The find place is not stated. All four are of copper, of the size of a two-anna piece.

2, They belong to the following sovereigns :

			No. of Specimens.
I, 'Aláuddín Muḥammad Sháh, Sultan of Delhi from A. H. 695—715 = A. D. 1295—1315. Described in E. Thomas' " <i>Chronicles</i> ," p. 172 (No. 136); date illegible	...	...	1
II, Ibráhím Sháh Sharqí, Sultan of Jaunpur, from A. H. 804—844 = A. D. 1401—1440. Described in E. Thomas' " <i>Chronicles</i> ," p. 321 (No. 2); dates: 831, 832, and 825 (?)	...	...	3
	Total,	...	4

VIII Report on 16 gold and 457 silver coins forwarded by the Secretary to Government, N. W. Provinces and Oudh, Financial Department,

with his No. $\frac{702}{\times 52}$ of the 12th Feb., 1886.

These coins consist of the following collections :

- 1, 141 silver coins, found in the Etáwah District. They all belong to the class of ancient Hindú or Buddhist punched coins. The punches on most of them are almost entirely worn away.
- 2, 25 silver coins, found in Partábgarh District. They belong to the following (so-called) Pathan Sultans of Delhi.
 - a, VIII 'Aláuddín Mas'á'id, A. H. 639—644, = A. D. 1241—1246, Mint and date illegible; specimens 3
 - b, IX Násiruddín Maḥmúd, A. H. 644—664 = A. D. 1286—1265; Mint and date illegible; specimens 19

c, X	<i>Ghiyásuddín Balban</i> ; A. H. 664—686 = A. D. 1265—1287; Mint and date illegible; specimens	2
d, XI	<i>Muizzuddín Kaikobád</i> ; A. H. 686—689 = A. D. 1287—1290; Mint and date illegible; specimen	1
	Total, ...	25
3, 45	silver coins, found in Partábgarh, Agra District; all belonging to Sultan Sháh Alam of Delhi, and of the mint Akbarábád. They are of two different types, both described by Marsden, in his <i>Numismata Orientalia</i> , pp. 689, 695; and of varying dates, from 1198 up to 1219.	
4, 25	silver coins found in the Banda District. They are all Rupees of the Emperor Sháh Alam, struck at Banda and dated 39 of his reign.	
5, 53	silver coins found in the Basti District. They belong to the following Pathan Sultans of Delhi:	
a,	<i>'Aláuddín Muḥammad Sháh</i> , A. H. 695—715 = A. D. 1295—1315, of the two mints: Darul Islám and Haşrat Dehli, and of various dates	51
b,	<i>Muizzuddín Kaikobád</i> , A. H. 686—689 = A. D. 1287—1290	2
	Total, ...	53
6, 4	silver coins from the Agra District. They are all Rupees of the Emperor Sháh Alam; mint Akbarábád; date 1218, reigns 42, 44, 45.	
7, 9	gold coins from the Partábgarh District. They are so-called Ramtinkis, very small, and slightly convex. On one side the surface is smooth; the other (concave) side bears the following symbols; in the middle a star (or sun) with eight rays; below it a conch shell, above it the legend <i>Shrī Ráma</i> in rude letters; on both sides a scroll or coil.	
8, 7	gold coins from Rae Bareilly. They are all Gupta coins; viz.,	
a,	<i>Ghaṭotkacha</i> , solar standard type, J. A. S. B., Vol. LIII, Pl. II, fig. 1,	1
b,	<i>Chandra Gupta</i> , I, Queen and King type, <i>ib.</i> , Pl. II, fig. 2	1
c,	<i>Samudra Gupta</i> , Javelin type, <i>ib.</i> , Pl. II, figs. 3, 5	5
	Total, ...	7
9, 164	silver punched coins, from Ballia; all in extremely worn condition.	

The SECRETARY laid upon the table a book entitled “*De L’Influence des Religions sur le développement économique des Peuples.* Par Louis Desgrand, Président-Fondateur de la Société de Géographie de Lyon.” The Secretary to the Geographical Society of Lyons, in forwarding the work, stated that his Society would be happy if any member of the Asiatic Society would undertake an analagous labour with regard to the religions of India.

The PRESIDENT remarked that the best way to meet the wish of the Geographical Society of Lyons would be to announce it in the Proceedings.

The following papers were read—

1. *On some snow measurements at Kailung in Lahoul.*—By the REV. A. W. HEYDE. Communicated by H. F. BLANFORD, Esq., F. R. S.

The only satisfactory mode of estimating the amount of water precipitated from the atmosphere in a snow-storm is to collect the snow that falls on a determinate superficial area, melt it, and measure (or weigh) the resulting water. In many cases this may be done with an ordinary rain-gauge, the snow being collected in the same manner as rain, in the funnel of the gauge, whence after melting, either spontaneously or by artificial heating, the water passes into the receiver and may be measured in the same manner as rain-water. But when the fall is very copious, and the temperature too low to allow of its melting on contact with the gauge, it may sometimes fill the funnel and form a mound on the top, after which, any further accumulation is lost either by its falling around or by its being blown away. It is therefore a question of some importance to know how much water is the equivalent of a given thickness of snow, in other words what is the depth of a layer of water that results from the melting of, say, a layer of snow one foot thick. Supposing this question to be susceptible of a definite answer, in the absence of any more satisfactory measurement, the thickness of a fall of snow (of course where undisturbed and not drifted) may be taken as the datum, converted into its water equivalent, and so registered in the register of the rainfall.

One of the earliest observers who gave attention to this subject was Musschenbrock,* who in his ‘*Introductio ad philosophiam naturalem*’ published at Leyden in 1762, gives results so discordant, that it might seem hopeless to seek for any ratio of practical value. He found that the density of snow varies, according to its state of accumulation from $\frac{1}{4}$ to $\frac{1}{2}$ that of water. These, however, are extreme results; and, as such, certainly of rare occurrence, and it may still be possible by taking some simple precautions to measure the snow under such conditions, that, assuming an average ratio for its conversion into the water equivalent,

* I quote this from Kaemtz and Schmidt, the original work not being accessible.

the result may be sufficiently near the truth to serve as an useful meteorological datum. The chief precautions are to measure it as soon as possible after the fall, in a place where the ground is level and the snow not drifted. Under these circumstances it is assumed by most observers to be either $\frac{1}{10}$ or $\frac{1}{12}$ the density of water, and either 10 inches of snow-fall (or 12 inches) are entered in the register as equal to 1 inch of rainfall. Drew in his 'Practical Meteorology' inculcates the former, Scott in his 5th Lecture on Modern Meteorology the latter, ratio.

In India it is only at the Himalayan observatories that the question has a practical importance, but these have been increased in number of late years, and it seemed very desirable to test the ratio of snow-thickness to water-thickness by actual experiment, if an observer would volunteer, endowed with those qualities of carefulness and accuracy in observing physical phenomena, which are unfortunately so rare in India, but which are the *sine qua non* of any useful work. Fortunately such an observer offered himself in the Rev. A. W. Heyde, the Director of the Moravian Mission in the N. W. Himalaya, whose residence at Kailung in the Chandra Bhaga valley, north of the Rotang pass at an elevation of 10,500 feet above the sea, and in a place where the winter snowfall is frequent and copious, afforded all the desired conditions for the work.

Mr. Heyde has now carried on his observations through two winters and the results, which he has communicated to me, are of such interest and so fully justify the adoption of the method when followed with care and intelligence, that it is most desirable to make them widely known through the medium of the Society.

A level space in front of Mr. Heyde's house is cleared of snow after each fall has been measured, and thus made ready for the next fall. The measurements have been made by Mr. Heyde himself and in the following manner. "First the depth of the snow was measured, then it was cut out with the rain-gauge funnel,* or its cylinder, of the same diameter as the funnel, melted, and the water obtained measured with the measure-glass."

In the first winter the depth of the snow appears to have been only roughly measured, and as might be anticipated the resulting measurements of the water are by no means so consistent as those of the second winter. It seems probable that on the whole the thickness of the snow was rather over-estimated. The figures are as follow :—

* The rain-gauge furnished to Mr. Heyde is that known as Glaisher's pattern the funnel 8 ins. in diameter, the mouth being surmounted by a cylinder for the purpose of catching snow. By some mistake the measure-glass originally sent with this gauge was one adapted for a 5-inch gauge, and the measurements of the 1st winter were made with this. In the text they have been reduced to the real amounts by multiplying the quantities as registered by 0.39.

Date.	Depth of snow.	Snow water.	Date.	Depth of snow.	Snow water.
Jan. 6th	About 5 ins.	0·35 in.	February 3rd	About 3 ins.	0·24 ins.
" 7th	" 30 "	2·19 "	" 4th	" 6½ "	0·51 "
" 8th	" 25 "	1·92 "	" 5th	" 13 "	1·01 "
" 9th	" 32½ "	2·48 "	" 8th	" 2 "	0·15 "
" 16th	" 4½ "	0·27 "	" 14th	" 2½ "	0·16 "
" 23rd	" 5 "	0·31 "	" 21st	" 8 "	0·69 "
" 24th	" 6 "	0·41 "	March 3rd	" 2 "	0·15 "
" 26th	" 6 "	0·41 "	" 5th	" 1½ "	0·10 "
" 28th	" 7 "	0·56 "	" 6th	" 1½ "	0·09 "
			" 12th	" 1½ "	0·12 "

The totals of the above figures are $162\frac{1}{2}$ inches (= 13 ft. $6\frac{1}{2}$ inches) of snow and 12·12 inches of snow water. Hence on the average 1 foot of snow yielded 0·9 inch of snow water, or one inch of water corresponds to 13·4 inches of snow.

In the second year the measurements of the snow were made with greater exactitude, and the snow that fell into the gauge was melted and measured independently. These measurements are given in the right hand column in the following table, and it is interesting to note how close is the agreement of the two measurements.

Date.	Depth of snow cut out.	Cut out melted A.	Computed B.	Difference.	Collected in gauge C.
Dec. 17th 1885	2½ ins.	0·19 ins.	0·20 ins.	+ 0·01	?
" 18th "	4½ "	0·35 "	0·40 "	+ 0·05	?
" 19th "	1½ "	0·15 "	0·15 "	0	?
Jan. 4th 1886	3½ "	0·27 "	0·30 "	+ 0·03	?
" 12th "	2½ "	0·18 "	0·20 "	+ 0·02	0·185
" 17th "	½ "	0·04 "	0·04 "	0	?
" 19th "	19½ "	1·92 "	1·77 "	—0·15	1·88
" 20th "	6½ "	0·65 "	0·61 "	—0·04	0·64
" 22nd "	1½ "	0·15 "	0·14 "	—0·01	0·13
" 24th "	3 "	0·24 "	0·27 "	+ 0·03	0·28
" 31st "	3½ "	0·25 "	0·29 "	+ 0·04	0·22
Feb. 1st "	6½ "	0·57 "	0·57 "	0	0·61
" 16th "	4 "	0·38 "	0·36 "	—0·02	0·38
" 17th "	6 "	0·55 "	0·55 "	0	0·60
" 27th "	2½ "	0·23 "	0·23 "	0	0·23
" 28th "	½ "	0·05 "	0·06 "	+ 0·01	0·05
Mar. 7th "	1½ "	0·13 "	0·11 "	—0·02	0·13
" 8th "	1½ "	0·10 "	0·10 "	0	0·10

The total depth of snow shewn by the second column is 70·36 inches the total depth of water resulting therefrom and given in the third column 6·40 inches. Hence 11 inches of snow yielded 1 inch of water almost exactly. The 4th column is computed from the individual snow measurements on this assumption, and the 5th column shews the errors of the computed values. The 6th column gives the quantities caught in the rain-gauge and separately melted and measured. It will be seen that in only one case do these differ by more than 0·05 inch from those in column 3.

In the letter communicating the above data Mr. Heyde observes: "If the snow falls without the least wind, and dry, the quantity of snow-water from the snow cut out and from the snow caught in the rain-gauge is always the same. But first the measuring of the snow, then the cutting it out, the taking the snow from the funnel of the rain-gauge and putting both in two separate vessels, and lastly, the melting and pouring the water into the measuring glass, must be done very carefully. If all these conditions are not fulfilled, it is only natural that a small difference will occur."

2. *On three new Himalyan Primulas.*—By G. KING, Esq., M. B. LL. D., F. L. S.

The paper will be published in full in Part II of the Journal for 1886.

The PRESIDENT in announcing the death of Mr. Edward Thomas, late of the Bengal Civil Service, and an old and valued member of this Society, desired to place on record the following summary of Mr. Thomas' service in India and his contributions to Indian Numismatics and Archæology:—Edward Thomas was appointed a writer on the Bengal establishment in April 1832, and arrived in India in the following November. He must have even then devoted himself to Oriental studies, for in December of the same year he received the medal for proficiency in Persian. In April 1833 he was appointed to the Meerut division of the N. W. Provinces and served during the same year in Kumaon under Mr. Traill. At the end of the year he was posted to Bareilly, where he remained until November 1837 when he was transferred to Saháranpur and took his first furlough at the close of 1838. Returning to India in 1840 Mr. Thomas was employed in Aligarh and again in Saháranpur, but his health breaking down he was obliged to take furlough early in 1845 and did not return to India until 1850. We next find him as Judge of Ságar in the Central Provinces, whence he again took leave in August 1854, and resigned the Service in February 1857, after a residence

in India of a little less than sixteen years. Completely broken in health but in the full possession of mental vigour, Thomas devoted the remainder of his life to the cause of Oriental numismatics and Archæology. In 1858, he brought out at Austin's Hertford press an edition of Prinsep's *Essays* which leaves nothing to be desired in the mode of editing and is full of valuable notes and illustrations by Thomas himself. Later still he undertook to edit the international edition of Marsden's *Numismata Orientalia*, besides contributing papers to the *Journal* of this Society and those of the sister Societies of London and Paris and that of the Numismatic Society. Our Vice-President, Dr. Rájendralála Mitra, had the advantage of a personal acquaintance with Mr. Thomas, and I call on him to speak of those traits of character which have endeared Mr. Thomas to those who knew him; his accurate, careful and conscientious scholarship and the modest judicial tone of his writings. Appended to this notice will be found a list of his principal contributions, especially those which he collected together under the title "*Miscellaneous Essays*," and which apparently contain the papers which he thought to be of most permanent value.* This list will give a fair idea of the range and extent of his labours, but a perusal alone of the works themselves will show what care and thought were bestowed on their production.

Journal of the Royal Asiatic Society, London.
Old Series.

On the coins of the dynasty of the Hindu kings of Kábul

IX p. 177 (1848).

On the coins of the kings of Ghazni IX, p. 267 (1848).

On the dynasty of the Sáh kings of Sauráshtra ... XII, p. 1 (1850).

The Pehlvi coins of the early Muhammadan Arabs VII, p. 253 (1850).

Notes introductory to Sassanian mint monograms

and gems, with a supplementary notice on the

Arabico-Pehlvi series of Persian coins XIII, p. 373 (1852).

Supplementary contribution to the series of the

coins of the kings of Ghazni XVII, p. 138 (1860).

*On Bactrian coins XX, p. 99 (1863).

New Series.

*On the identity of Xandrames and Krapanda ... I, p. 447 (1863).

*The Initial coinage of Bengal, Pt. I II, p. 145 (1866).

Sassanian inscriptions III, p. 241 (1868).

*Indo-Parthian coins IV, p. 503 (1870).

* These papers are marked with an asterisk in the list and are published by Trübner & Co.

- Comments on recent Pehlvi decipherments with an incidental sketch of the derivation of Aryan alphabets and contributions to the early history and geography of Tabaristán V, p. 408 (1871).
 *The Initial Coinage of Bengal, Pt. II. VI, p. 339 (1873).
 Note on a jade drinking-vessel of the Emperor Jahángír VII, p. 384 (1875).
 Bactrian coins and Indian dates IX, p. 1 (1877).
 The early faith of Asoka IX, p. 155 (1877).
 The rock-cut Phrygian inscriptions at Doganlu ... X, p. 361 (1878).
 On the position of women in the East in olden time XI, p. 1 (1879).
 The epoch of the Guptas XIII, p. 524 (1881).
 Parthian and Indo-Sassanian coins XV, p. 73 (1883).
 The rivers of the Vedas and the way the Aryans entered India XV, p. 357 (1883).

*Numismatic Chronicle and Journal of the Numismatic Society, London.
 Second Series.*

- *Bactrian coins (1 ser.) xix : (2 ser) II, pp. 179, 259 (1862).
 IV, p. 193 (1864).
 Bactrian alphabet III, p. 225 (1863).
 Ancient Indian weights IV, pp. 40, 114 (1864).
 *The earliest Indian coinage IV, p. 263 (1864).
 Bengal coins... .. V, p. 217 (1865).
 *Sassanian gems and early Armenian coins, ... VI, p. 241 (1866).
 VII, pp. 141, 216 (1867) ; VIII, pp. 214, 284 (1868) XI, p. 202 (1871).
 *Indo-Parthian coins X, p. 139 (1870).

Third Series.

- Bilingual coins of Bukhárá I, p. 116 (1881).

Journal of the Asiatic Society Bengal, Calcutta.

- *On Sassanian coins XX, p. 525 (1851).
 An account of eight Kúfic silver coins ,, p. 537 (1851).
 Note on Col. Stacey's Ghazni coins XXI, p. 115 (1852).
 Note on the present state of the excavations at Sárnáth XXXII, p. 469 (1854).
 On the epoch of the Gupta dynasty XXIV, p. 371 (1855).
 *On the coins of the Gupta dynasty ,, p. 483 (1855).
 *Ancient Indian numerals ,, p. 551 (1855).
 Catalogue of the coins in the cabinet of the late Col. Stacey, with estimated prices attached XXVII, p. 251 (1858).

- *On ancient Indian weights XXXIII (i) p. 251 (1864).
 XXXIV (i) pp. 14, 151 (1865).
 On double currency Proc. p. 208, (1865.)
 On Arian alphabets Proc. p. 138, (1866) : p. 33, (1867).
 *The initial coinage of Bengal XXXVI (i) p. 1 (1867).
 XLII, p. 343 (1873).
 On a coin of Plato Proc. p. 174, (1872).
 Readings of rare Bengal coins „ p. 199, (1872.)
 On a coin of Krananda „ p. 163, (1875).
 Note on Jainism „ p. 1, (1879).
 The revenues of the Mughal empire L, p. 147 (1881).

Journal Asiatique, Paris.

- *Note on Indian Numerals No. 8 (1863).
 *Observations introductory to the explanation of the oriental legends to be found on certain Imperial Arsacidan and Partho-Persian coins. London, 1849.
 *Contributions to the Numismatic history of the early Mohammedan Arabs in Persia. London, 1849.

DR. MITRA spoke as follows :

As an old member who had had the pleasure of Mr. Thomas's acquaintance before he retired from India, and one who took a deep interest in his antiquarian researches—researches to which I have devoted a great part of my life,—I desire to bear my humble testimony to his worth, and to express my sense of the loss which the cause of Indian antiquities has sustained by his death. After what has fallen from the chair, it is not necessary for me to attempt a sketch of the life of the deceased. The history of his official career in this country is well-known to his friends, and to others it is enough to say that it had the usual run of the career of most Civil Servants. He joined the Society as an Ordinary Member in August 1839, or within six years of his arrival in this country, and was elected an Honorary Member in 1860. The special subject he had selected for his study was numismatics, and his first contribution, in the form of a monograph of the Hindu Kings of Kábul, appeared in the Journal of the Royal Asiatic Society in 1848. This was followed by a note on the coins of the kings of Ghazni and then by an elaborate paper on the Sháh kings of Sauráshtra. These papers show the deep knowledge he possessed of the subjects

to which they were devoted, and the calm, critical, and judicial spirit he brought to bear on his work. Prinsep and Wilson had already described a good many of the coins he noticed, and had cleared the way for further research; nevertheless, much credit was due to him for his essays, and they at once established his reputation as an able and careful worker. His first contribution to our Journal appeared in 1850. It described an Indo-Pehlvi coin, and it was followed by several papers on coins, the most remarkable of which were those on the mintages of the Pathan Sultans of Bengal. These were founded on a number of select specimens from a large find in Cutch Behar, which Colonel Guthrie took to England, and they brought to light several names which, till then, were all but totally unknown to Indian history. They helped also to settle the dates of several of the Bengal Sultans,—dates which, till then, were unknown or incorrectly given by Muhammadan historians. To the Journal of the Royal Asiatic Society he contributed papers on Indo-Parthian or Bactrian coins, as also translations of several Phrygian and Sassanian inscriptions. His searching and scholarly examination of the last named records is worthy of special note. Pehlvi and Sassanian palæography is still in an immature state, and when Mr. Thomas took it up it was in its infancy. Very few scholars had tried to grapple with it, and the result, till then, was anything but satisfactory. But his deep and critical knowledge of the Persian language and thorough antiquarian instinct enabled him to render valuable services in this almost new field of research.

While at Benares, Mr. Thomas devoted his attention to the Sarnath Töpe, and his paper on the subject appeared in our Journal for 1854. It was a welcome contribution then, but the later researches of General Cunningham have now taken off from it some of the charms of novelty.

As a numismatist he could not but pay earnest attention to Indian palæography, and wrote several notes on the origin of the Indian alphabets and ancient numerals, some of which appeared in our Journal, and others in the Royal Asiatic Society's Journal and in the *Journal Asiatique*. The problem is a most difficult one to deal with, and I cannot say, that, notwithstanding the researches of later writers, we have yet arrived at a satisfactory solution of it; but high praise was due to Mr. Thomas for the able and scholarly way in which he tried to work it out.

His numismatic researches enabled Mr. Thomas to collect much valuable information regarding the currency and revenue of the Moghul Emperors of Delhi, and they are embodied in an essay on the 'Revenues of the Moghul Empire in India,' which is alike noted for the depth of research and the vast variety and authenticity of the facts produced.

His essays on the era of the Guptas is a paper of this class, and it is replete with information of great value.

Apart from strictly numismatic subjects he wrote learned papers on 'Jainism,' 'On the Position of Women in the East in Olden Times,' 'On the Early Faith of Aśoka,' 'On the Rivers of the Vedas,' and 'On the Way the Aryans entered India.' They all bear the stamp of a scholar, who always thought and wrote for himself, and never accepted the statements of his predecessors and contemporaries without examination and verification. By far the most important work published by Mr. Thomas was the 'Chronicles of the Pathan Kings of Delhi, illustrated by Coins, Inscriptions, and other antiquarian remains.' It is a standard work of reference, without which no student of Indian history can get on. He did also an important service to the Society by bringing out in an acceptable and handy form the antiquarian essays of James Prinsep, which were originally published in the earlier volumes of our *Journal*; and were for some time not easily accessible. They were enriched by valuable notes and appendices, which brought them up to date. His last undertaking was the 'International Numismata Orientalia.' Marsden's work being long out of print and to a certain extent having become obsolete by reason of subsequent discoveries, a new edition was called for, and Mr. Thomas undertook the task with the aid of a large staff of able and experienced coadjutors. The first fasciculus of this work appeared some time ago, and it contained an exhaustive essay on Indian Weights and Measures from his pen. The subsequent fasciculi were prepared by his collaborateurs, his task being limited to editing only. It was expected that he would write out the part referring strictly to Indian coins, both Hindu and Muhammadan, and no one could have done greater justice to it. He was of a very retiring disposition, and never put himself forward. Those, however, who were best able to appreciate his merits, held him in high esteem, and the Society cannot but greatly regret the loss it has sustained by his demise.

The subject for conversation by the Philological Secretary was—

"Manikhyala, and a gold ornament made of Roman coins recently found there."



LIBRARY,

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

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presented by the respective Societies and Editors.

- Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen Notulen,—Vol. XXIII, No. IV, 1885.
- Bombay. Royal Asiatic Society (Bombay Branch),—Journal, Vol. XVI, No. XLIII.
- Copenhagen. K. Nordiske Oldskrift-Selskab,—Aarboger, Part IV, 1885.
- . ditto ditto Tillæg, 1885.
- Edinburgh. Botanical Society,—Transactions and Proceedings, Vol. XV, Part II.
- . Scottish Geographical Magazine.—Vol. II, No. 3, March, 1886.
- . ditto ditto Title page and Index, Vol. I, 1885.
- Frankfurt. Senckenbergische Naturforschende Gesellschaft,—Bericht, 1885.
- Geneva. Société de Physique et d'Histoire Naturelle,—Mémoires,—Vol. XXIX, Part 1.
- Havre. Société de Géographie Commerciale,—Annuaire pour l'année 1885.
- London. Academy, Nos. 719—722.
- . Athenæum, Nos. 3042—3045.
- . Institution of Mechanical Engineers,—Proceedings, No. 5, October, 1885.
- . Nature, Vol. XXXIII, Nos. 851—854.
- . Royal Asiatic Society,—Journal, Vol. XVIII, (new series) Part I, January, 1886.
- . Royal Astronomical Society,—Monthly Notices, Vol. XLVI, No. 2, December, 1885.
- . Royal Geographical Society,—Proceedings, Vol. VII, (new series) Nos. 1 and II, January and February, 1886.
- Moscow. Société Impériale des Naturalistes,—Bulletin, No. 4, 1884.
- New Haven. American Oriental Society,—Proceedings, October, 1885.
- Paris. Americana Bulletin du Bouquiniste,—Series 4, No. 3.

- Paris. Société de Géographie,—Compte Rendu des Séances, Nos. 4 and 5, 1886.
- Pisa. Società Toscana di Scienze Naturali,—Atti, Processi Verbali, Vol. V, 15th November, 1885.
- Roorkee. Indian Forester,—Vol. XII, Nos. 2 and 3, February and March, 1886.
- St. Petersburg. Comité Géologique,—Memoires, Vol. IV, Nos. 8—10.
 —————. Russian Geographical Society,—Proceedings, Vol. XXI, No. 3.
- Turin. R. Accademia della Scienze,—Atti, Vol. XXI, No. 1.

MISCELLANEOUS PRESENTATIONS.

Report on the Agri-Horticultural Gardens, Lahore, for 1883-84 and 1884-85. Fcp. Lahore, 1884 and 1885.

AGRI-HORTICULTURAL GARDENS, LAHORE.

Nederlandsch-Indisch Plakaatboek, 1602—1811, by J. A. Van der Chijs, Vol. II, 1642—1677. 8vo. Batavia, 1886.

BATAVIAASCH GENOOTSCHAP VAN KUNSTEN
 EN WETENSCHAPPEN, BATAVIA.

Catalogue of Indian coins of the Greek and Scythic Kings of Bactria and India in the British Museum, by Reginald Stuart Poole, LL. D. 8vo. London, 1885.

BRITISH MUSEUM, LONDON.

Review of the Agricultural and Revenue Reports of the Central Provinces for the year 1884-85. Fcp. Nagpur, 1886.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

The Lepidoptera of Ceylon by F. Moore, F. Z. S., Part XI. 4to. London, 1885.

COLONIAL SECRETARY, COLOMBO.

Turkistan. A Geographical and Orographical description from data collected during journeys from 1874 to 1880, by J. V. Mushketoff, Vol. I, in two parts. 8vo. St. Petersburg, 1886.

COMITE' GE'OLOGIQUE, ST. PETERSBURG.

Le Thibet d'après les correspondance des Missionnaires, by C. H. Desgodins. 8vo. Paris, 1885.

A. DESGODINS, PRO VICAIRE DU THIBET.

Report on the Rail-borne Traffic of Bengal during the year 1884-85. Fcp. Calcutta, 1886.

Report on the River-borne Traffic of the Lower Provinces of Bengal, on the Inland Trade of Calcutta, and on the Trade of Chittagong and Orissa Ports for the year 1884-85. Fcp. Calcutta, 1886.

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Selections from the Records of the Government of India, Home Department, No. CC. Reports on publications issued and registered in the several Provinces of British India during the year 1883. Fcp. Calcutta, 1885.

GOVERNMENT OF BENGAL.

Excursions et Reconnaissances :—a collection of official and other papers on French Cochin China. No. 25, January and February, 1886. 8vo. Saigon, 1886.

GOVERNMENT OF FRENCH COCHIN CHINA, SAIGON.

Index to the Report from the Select Committee on Forestry. Fcp. London, 1885.

Statement exhibiting the moral and material Progress and Condition of India during the years 1882-83 and 1883-84. Fcp. London, 1885.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Translation of the Bilochi Nama of Rai Bahadur Hetu Ram, C. I. E., by J. McDouie, C. S. 8vo. Calcutta, 1885.

GOVERNMENT OF THE PUNJAB.

Dutch village communities on the Hudson River, by Irving Elting, A. B. 8vo. Baltimore, 1886.

JOHNS HOPKINS UNIVERSITY, BALTIMORE.

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Reiseerinnerungen aus Algerien und Tunis, von Dr. W. Kobelt. 8vo. Frankfurt am Main, 1885.

SENCKENBERGISCHE NATURFORSCHENDE

GESELLSCHAFT IN FRANKFURT A M.

De L'Influence des Religions sur le Développement Economique des Peuples. Simple E'tude. Par Louis Desgrand. Demi 8vo. Paris, 1884.

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TRACT SOCIETY, MADRAS.

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UNIVERSITE' DE LEIDE.

Enlarged Photograph of the Kutb Minar at Delhi. Sheet, 1886.
 Indian Art Work in the Calcutta International Exhibition, Part 2.
 Folio, Calcutta, 1885.

LT.-COL. J. WATERHOUSE, B. S. C.

PERIODICALS PURCHASED.

- Allahabad. Punjab Notes and Queries,—Vol. III, No. 30, March, 1886.
 Berlin. Deutsche Litteraturzeitung,—Vol. VI, No. 52; Vol. VII, Nos. 1—5.
 ———. Journal für die reine und angewandte Mathematik,—Vol. XCIX, No. 3.
 Bombay. Legends of the Punjab,—Vol. III, No. 28, April, 1886.
 Calcutta. Indian Medical Gazette,—Vol. XXI, Nos. 2 and 3, February and March, 1886.
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 ———. Nachrichten,—Nos. 10—12, 1885.
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 ———. ———. Beiblätter,—Vol. X, No. 2.
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 ———. Literarisches Centralblatt, Nos. 1—6, 1886.
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 ———. Chemical News,—Vol. LIII, Nos. 1368—1372.
 ———. Entomologist,—Vol. XIX, Nos. 272 and 273, January and February, 1886.
 ———. Entomologist's Monthly Magazine, Vol. XXII, Nos. 260 and 261.
 ———. Ibis,—Vol. IV, (5th series), No. 13, January, 1886.
 ———. Journal of Botany,—Vol. XXIV, Nos. 277 and 278, January and February, 1886.
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 ———. Messenger of Mathematics,—Vol. XV, Nos. 7 and 8, November and December, 1885.
 ———. Nineteenth Century,—Vol. XIX, No. 109, March, 1886.
 ———. Publishers' Circular,—Vol. XLIX, Nos. 1162—1163.
 ———. Society of Arts,—Journal, Vol. XXXIV, Nos. 1734—1738.

- New Haven. American Journal of Science,—Vol. XXXI, No. 181, January, 1886.
- Paris. Académie des Sciences,—Comptes Rendus des Séances,—Vol. CI, Nos. 25 and 26; Vol. CII, Nos. 1—4.
- . Annales de Chimie et de Physique,—Vol. VII, (6th series), January, 1886.
- London. Journal des Savants,—December, 1885 and January, 1886.
- . Revue Critique,—Vol. XX, No. 52; Vol. XXI, Nos. 1—5.
- . Revue des Deux Mondes,—Vol. LXXIII, Nos. 3 and 4; Vol. LXXIV, No. 1.
- . Revue de Linguistique,—Vol. XIX, No. 1.
- . Revue Scientifique,—Vol. XXXVI, No. 26; Vol. XXXVII, Nos. 1—5.
- Vienna. Orientalische Museum,—Oesterreichische Monatsschrift für den Orient, Vol. XII, No. 2.

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- CUNNINGHAM, MAJOR-GENERAL A. Book of Indian Eras. 8vo. Calcutta, 1883.
- DAVIDSON, DR. SAMUEL. Hebrew and Chaldee Lexicon to the Old Testament. 8vo. London, 1867.
- GOULD, JOHN, F. R. S. The Birds of New Guinea, Part XX. Fol. London, 1885.
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presented by the Authors, Translators &c.

- BALL, V., M. A., F. R. S., F. G. S. On the Collection of the Fossil Mammalia of Ireland in the Science and Art Museum, Dublin. 4to. Dublin, 1885.
- DUMONT, REV. J. B., S. J. Synoptical Tables of Modern Chemistry, Vol. I. Inorganic Chemistry. 8vo. Calcutta, 1884.
- ELSON, S. R. Proposed New Scheme for International Marine Signalling. 12mo. Calcutta, 1882.
- . The River Hooghly : Calcutta to Saugor Island, with Charts and Diagrams. 8vo. Calcutta, 1884.

- ELSON, S. R. *The Sailor's Sky Interpreter, and a circular Diagram for Compass deviation.* 12mo. Calcutta, 1879.
- LYALL, C. J. *Translations of ancient Arabic Poetry, Demi. 4to.* London, 1885.
- ROY, PROTAP CHANDRA. *The Mahabharata, translated into English Prose. Sections 233—269.* 8vo. Calcutta, 1886.
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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MAY, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 5th May, 1886, at 9-15 P. M.

E. T. ATKINSON, Esq., C. S., President, in the Chair.

The Minutes of the last meeting were read and confirmed.

Seventeen 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 :

1. Babu Asutosh Mukhopádhyáy, M. A., F. R. A. S.
2. Capt. E. H. Molesworth, Commandant Police Levy, Dibrugarh, Assam.

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

1. C. Baumgarten, Esq., Batavia, proposed by Dr. A. F. R. Hoernle, seconded by H. M. Percival, Esq.
2. P. Doyle, Esq., Editor, Indian Engineer, proposed by J. Holdsworth-Fisher, Esq., seconded by Dr. Mahendralál Sarcár.
3. A. Macdonald, Esq., Editor, Englishman, proposed by J. Wood-Mason, Esq., seconded by H. B. Medlicott, Esq.
4. Alexander Hogg, Esq., Supdt. Police, proposed by Dr. Hoernle, seconded by H. M. Percival, Esq.

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

Maulavi Dilawar Hussein Ahmed.

Maulavi Kabiruddin Ahmed.

The PHILOLOGICAL SECRETARY read the following report on an ornament of gold Roman Coins found in the Manikyála Tôp in the district of Rawal Pindi :—

Report on an ornament of ancient gold coins forwarded by the Deputy Commissioner of Rawal Pindi with his No. 478 G, dated 9th March 1886.—By DR. A. F. RUDOLF HOERNLE.

The gold ornament was found by a peasant of the Tôp Manikyála village (Police Station, Riwat), while ploughing his field, about the 25th July 1885. It was on the 1st August taken charge of by the local Inspector of Police, and made over by him to the Offg. District Superintendent of Police, Rawal Pindi, and by the latter, together with a report on it, to the Deputy Commissioner of Rawal Pindi. Afterwards, by the direction of the Commissioner of Rawal Pindi, it was forwarded to the Deputy Commissioner of Amritsar, in order to be submitted to Mr. C. J. Rodgers of Amritsar for his opinion. The latter gentleman gave his report on the ornament on the 25th Nov. 1885, whereupon it was purchased by Government at the value of Rs. 150 and ordered, by the Commissioner of Rawal Pindi, to be forwarded to the Asiatic Society of Bengal for the usual Report, in conformity with the recent resolution of the Government of India relating to treasure trove consisting of coins.

The ornament consists of five gold coins set at small intervals in a row between two pieces of stout gold wire, of the length of about $5\frac{1}{2}$ inches. The interstices between the coins are filled in with very thin plates of gold, showing traces of having been once mounted with gems or enamel. The whole is finished off at both ends with a narrow band of gold, to which at one end a small tube of gold is attached, about $\frac{1}{4}$ inch long and $\frac{1}{8}$ inch wide. At the other end, there was probably a similar tube, which, however, is now lost. The breadth of the whole ornament is nearly one inch. It is now considerably bent and twisted out of its original shape.

In the report of the District Superintendent of Police, the ornament is described as a "necklet," while Mr. Rodgers, in his report, describes it as a "bracelet." The latter description is certainly incorrect, for though the ornament is, as Mr. Rodgers, says "of the length of a bracelet for an ordinary lady's arm," the make of it is much too inflexible to allow of its being worn round the wrist. The description of it as a necklet assumes that only one half of the ornament has been found, and that it originally consisted of a second, similar piece, joined to the

other by hinges, which allowed the whole ornament of being opened to be adjusted to the neck. This is possible, though still the ornament would rather be a collar than a necklet, and a very stiff and uncomfortable one too, more fitted for an animal than a human being. I am disposed to think, that the ornament was an armlet, such as is worn on the upper arm, encircling only its anterior half and tied behind the arm by means of a string or ribbon. This would account for the wide tubes attached to the ends of it, which were intended to hold the string or ribbon. In this view, the ornament is complete, with the exception of one of the two tubes, which is broken off.

The District Superintendent of Police of Rawal Pindi identified the coins as belonging, three to Antoninus Pius, and two to his wife Faustina. Mr. Rodgers, on the other hand, attributed them, one to Hadrian, two to Sabina, and two to Antoninus Pius. Notwithstanding the "most careful examination" of the latter gentleman his identification is entirely wrong, while the original identification by the District Superintendent of Police is correct. Mr. Rodgers' error probably arose from the fact that one of the coins shows the name Hadrian, and as Hadrian's spouse was called Sabina, Mr. Rodgers seems to have concluded that two of the coins belonged to that lady, notwithstanding that they bear distinctly the name Faustina in full, and not Sabina. But as the name Hadrianus is only given in the abbreviated form *Hadri*, while it is immediately followed by the name Antoninus Pius in full, and as moreover it is well-known that the Emperor Antoninus adopted his adoptive father's name Hadrianus, it is quite plain that the coin in question does not belong to the emperor Hadrian, but to his adopted son and successor Antoninus Pius.

The five coins may be described thus :

1. *Obverse*: Laurel-crowned head of the Emperor, to right. *Legend*: ANTONINUS AUG. PIUS P. P. TR. P. XXII.

Reverse: A female dropping something into a tripod. *Legend*: VOTA SUSCEPTA DEC. III, (in the exergue) COS. III (IIII ?)

2. *Obv.*: Head of Empress to right. *Legend*: DIVA FAUSTINA. *Rev.*: Ceres standing holding (apparently) a torch and ears of corn. *Legend*: AUGUSTA. (Akerman, No. 7, Vol. I, p. 273.)

3. *Obv.*: Head of Empress to right. *Legend*: DIVA FAUSTINA. *Rev.*: Ceres standing holding (apparently) a torch in each arm. *Legend*: AUGUSTA.

4. *Obv.*: Head of Emperor, bare, to left. *Legend*: IMP. T. AEL. CAES. HADRI. ANTONINUS (continued on reverse). *Rev.*: A female offering before an altar. *Legend*: AUG. PIUS P. M. TR. P. COS. DES. II.

5. *Obv.*: Head of Emperor, bare, to right. *Legend*: ANTONINUS

AUG. PIUS P. P. TR. P. XIII. *Rev.* : Two female figures standing, one holding corn, the other a globe. *Legend* : LÆTITIA COS. IIII (Akerman, Vol. I, p. 257, No. 29).

Antoninus Pius was invested with the title of Cæsar and endowed with the Tribunician Power in the year 891 U. C. = 138 A. D. He then took the names of Titus Aelius Hadrianus Antoninus, to mark his adoption by Hadrian. He succeeded Hadrian in the same year, and received from the Senate the title of Pius. In the following year, 892 U. C. = 139 A. D. he took the title of Pater Patriæ. Coin No. 4 shows all these names and titles with the exception of Pater Patriæ; accordingly it must have been struck in the year 138 A. D. Coin No. 5, which shows the 14th year of the Tribunician power, belongs to the year, 151 A. D.; and Coin No. 1, which has the 22nd year of that power, belongs to the year 159 A. D., which falls within the 3rd Decennium of Antoninus's reign, who reigned from A. D. 138—161.

About this time the Roman Empire acquired its furthest extent towards the East, Armenia being made a Roman province by Trajan. The frequent wars and commerce with eastern nations during this period explain the transportation of Roman coins into India, among which those of Trajan, Hadrian and Antonine are of most frequent occurrence. The earliest find of Roman coins, of which there is any record belonged to those three sovereigns (see *Asiatic Researches*, Vol. II, p. 332), and the last great find, before the present one, made in the Ahinposh Tôp, belonged to Domitian, Trajan and Hadrian (see *Proceedings of the Asiatic Society of Bengal*, for March, April and August 1879).

Some time must be allowed for the travelling of the coins to India, and for their wear and tear, of which they show some traces. This need not have been more, however, than some 40 or 50 years. Assuming, then, the armet to be a genuine piece of antiquity, of which there appears to be no sufficient reason to doubt, its age may be put down to about the year 200 A. D.

I agree with Mr. Rodgers that the coins must have been current for some time before they were set in the armet. Otherwise they would have suffered more on their inside. But both sides show an equally worn appearance, though on the whole they are in very good preservation. Mr. Rodgers, however, is mistaken in his observation that the "wire of the edges must have been drawn, for it shows nowhere any sign of a hammer having touched it." I have shown the armet to the well-known Calcutta firm of jewellers, Messrs. Cooke and Kelvey. They say that the wire is not drawn, but made with the hammer. They further say that the armet in its present state shows signs of having been in a "jeweller's colouring pot." The explanation of this may

probably be that the ornament was given to a jeweller, either by the original finder or by some of those through whose hands it subsequently passed, for the purpose of testing the true nature of its metal.

I think the price paid by the Government for the acquisition of the armlet, *viz.*, Rs. 150, a fair one. The intrinsic value of the gold coins is about Rs. 14 each (at the present rate of discount); total of the five gold coins, about Rs. 70. The gold framework is worth about as much more. From the numismatic point of view, the coins would have an additional value, on account of their being found in India. If found in Europe, I do not suppose, they would have any *special* value.

It would be a pity to break up the armlet for the purpose of distributing the coins to the several institutions named in the Resolution of the Government India on the subject. I would, therefore, suggest that it be given, in its entirety, to the Imperial Museum in Calcutta, which, according to the terms of the Government Resolution, has the first claim to all objects that cannot be divided.

Note.—Dr. Hoernle's suggestion was sanctioned by the Government of the Punjab. The ornament is now deposited in the Imperial Museum.

The following papers were read—

1. *List of Butterflies taken in Kumdon.*—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.

This paper having already been published in the Journal, Part II, No. 2 for the current year, an abstract is unnecessary.

The PRESIDENT made the following remarks:—The paper of Mr. Doherty on the *Rhopalocera* of Kumdon bears ample evidence of care, accuracy and knowledge in its preparation. I state this with the more confidence as I have myself collected in the Pindari valley and north-eastern Kumdon in 1869 and again in 1872-75 and published a list of my captures in 1882. Mr. Doherty's account of the local distribution of species is very interesting, and his statement that the valley of the Káli separating Kumaon from Nepál forms a genuine zoological boundary is borne out by all that we know of the other groups of animals and insects of that locality. In my memoir on Kumdon (forming volumes x to xii of the Gazetteer N.-W. Provinces) I have referred to this subject (l. c. xi, p. 97) thus:—"The study of the local insect fauna of the Himálayan districts of the N.-W. Provinces is in itself especially to be desired; for the Káli river is not only a political and ethnological barrier, but also a great natural boundary separating the species proper to the eastern Himálaya and related

to the great Malayan fauna from those that belong to the western range with their Palearctic and African affinities. Moreover between the swamps of the Taráí on the south and the snowy range there are examples of diverse forms of climate, each with its corresponding flora and fauna. In places, the naturalist may ascend direct from a river bed, bearing vegetation common to it and the tropics, to the region of perpetual snow with its Alpine flora. Hence we find along the foot of the hills and far up the deeper valleys an abundance of forms of insect life typical of more tropical climes and well beyond their natural limits. They betray their southern origin in their dwarfed size and soon give place to other types fulfilling the same functions under a different and more suitable form. In addition to this mingling of eastern and western forms there is also an affinity in many genera with the corresponding genera found in Europe and in northern Asia, and there are even several species identical with those found in Europe, so that we have within a comparatively small field, examples of the fauna of the principal nature-divisions of the old world." Similar testimony in regard to the flora of Kumáon is given by Dr. King (l. c. x, p. 303) and Dr. Watson (l. c. x, p. 324). Amongst others of European affinity *Vanessa kaschmirensis* appears to be only a local variety of the European form *V. urticae*: *Gonepteryx nepalensis* is the same as *G. rhamnii*: *Papilio asiaticus* is the local form of *P. machaon* and the cosmopolitan *Pyrameis cardui* is found in Kumáon and indeed all over India. *Argynnis issæa* too appears to be little more than a local form of *A. lathonia*.

Mr. Doherty brings into prominence two matters connected with the *Rhopalocera* which appear to deserve further investigation. The first refers to the seasonal dimorphism observable in certain groups, the wet-season brood differing considerably from the dry-season brood of the same species, so much so as to have induced Lepidopterists in some instances to consider them distinct species and to give different names to the two forms. This dimorphism has been noticed as occurring in *Junonia almana* and several species of *Mycalesis* by Mr. de Nicéville in a paper read before this Society in 1884, and is here again referred to by Mr. Doherty, who suggests that *Mycalesis sanatana*, Moore, is the dry-season form of *M. gopa*, Földer; *M. visala*, Moore, of *M. mineus*, Linn.: *M. lepcha*, Moore, of *M. malsara*, Moore: *M. langii* de Nicéville of *M. nicotia*, Hewitson, &c. There is much probability in the theory, and it certainly deserves to be worked out with the care and attention it is now receiving at the hands of Messrs. de Nicéville and Doherty.

The other subject brought forward by Mr. Doherty is the value of a study of the eggs of the *Rhopalocera* as an aid to the grouping of families and sub-families. He refers particularly to the *Nymphalina* of

Kirby and the confusion that exists in the arrangement of the genera now placed under that group, and thinks that a more natural grouping will be found in an arrangement based on the constant forms of the egg. He then proceeds to suggest a classification based primarily on the form of the first pair of feet and secondarily on the form of the egg. His studies in this direction have not proceeded far enough to include the whole of the Indian genera. Herr Rupertsberger undertook a similar inquiry for the eggs of the Coleoptera, and M. T. Goosens in 1883 published a paper on the eggs of Lepidoptera and endeavoured to base on them the value of the specific differences that then obtained in certain species. The latter reviews a large number of eggs of both the *Rhopalocera* and *Heterocera* and gives indications that we may obtain results valuable for classification and the fixation of species from their study.

2. *On the collection of Stomatopod Crustacea in the Indian Museum, Calcutta.*—By J. WOOD-MASON, ESQ., *Offg. Supdt. Indian Museum and Professor of Comparative Anatomy and Zoology, Medical College.*

The following species are treated of :—

GONODACTYLINA.

- Gonodactylus chiragra* (Fabr.).
 *————— *brachysoma*, n. sp.
 ————— *graphurus*, White.
 ————— *scyllarus*, (Linn.).
 *————— *glyptocercus*, W.-M.
 ————— *trispinosus*, var. *pulchellus*, Miers.
Dactylogonus (n. gen.) *trachurus*, (v. Martens).
Pseudosquilla ciliata, (Fabr.).
 ————— *oculata*, var. *spinifrons*, n.
 ————— *ornata*, Miers.
 ————— ? *monodactyla*, A. M.-E.
Lysiosquilla maculata, (Fabr.).
 *————— *spinosa*, (W.-M.).
 ————— ? *acanthocarpus*, (White).

SQUILLINA.

- **Squilla raphidea*, Fabr.
 ————— *scorpio*, Latr.
 *————— *gilesii*, n. sp.
 *————— *tenuispina*, n. sp.
 *————— *supplex*, W.-M.
 ————— ? *multicarinata*, White.

- Squilla mantis*, Latr.
 ————— *dubia*, M.-E.
 * ————— *oratoria*, De H. }
 * ————— *meridionalis*, n. sp. } *S. nepa* type.
 * ————— *polita*, n. sp. }
 * ————— *interrupta*, n. sp. }
 * ————— *holoschista*, n. sp. }
 * ————— *hemischista*, n. sp. }
 ————— *gonypetes*, n. sp. }
 ————— *dermarestii*, Risso. }
 * *Chloridella decorata*, W.-M.
 * ————— *marginata*, n. sp.
 * ————— *murrayi*, n. sp.
Leptosquilla schmeltzii, (A. M.-E.).

The species whose names have an asterisk prefixed are figured in the plates which have been prepared in illustration of the paper.

The subject of conversation by the Natural History Secretary was "Some of the insect parasites of Indian Silkworms."

Mr. Barton Groves exhibited the following illustrated MSS. from the Palace at Mandalay.

No. 1. An Order issued by the *Hlut-daw*, or Royal Council of Burma. It is written with a style, on a strip of palm leaf and bears the stamped impression of the Royal Seal, a Peacock. The signature of one of the Ministers is on the back of the document.

No. 2. A manuscript Book in Burmese.

No. 3. An illustrated Book in the Pali character. An intelligent Burman who examined it said he believed it was used in Fortune-telling, that it was an original work and probably of some antiquity.

No. 4. A bark Manuscript, on which Dr. Rajendralala Mitra had forwarded the following note:—

"The bark roll measures 4'-4" × 4", and is coated on the outer surface with a bituminous composition to render it proof against the attack of white-ants. The inner surface bears three astrological diagrams in the middle, and fourteen lines of writing on each side, the last four lines on the left-hand side being a tabular statement. The letters are Bengali, written with a composition of lac-dye or *alakta*—the same which is used for dyeing the feet of women.

"The language of the record is Sanskrit, but the spelling is throughout very corrupt, reminding one of the spelling of Artemus Ward, or of

Robert, the Head Waiter, in *Punch*. The writer evidently had the matter by heart, and wrote down, to a great extent, phonetically. This is due to the fact of the Burmese employing, like the Pársís of Bombay, Bráhma astrologers to make their calculations, and such men are not always trained as scholars. Small colonies of Bengali astrologers are to be met with in different parts of Burmá, and some of them were very influential in the Burmese court. Isolated from their parent stock the colonists devote themselves to their own special science, but acquire no scholarship in the Sanskrit language. They preserve their Hinduism with scrupulous care.

“The subject matter of the writing is a horoscope. The diagrams give the aspect of the heavens at the moment of the person’s birth, and the prose record explains the deductions to be made from the positions of the planets, signs of the zodiac and stellar conjunctions at that moment. Beginning with the first house ascendant, or the planet which reigned at the time of birth, the record gives the effects of each of the planets and their conjunctions to the fiftieth year of the person’s life. The reason of the stoppage at this epoch apparently is the want of space for more writing; but at this time the person would be under the influence of Saturn and “suffer from a disease of the abdomen,” which would, though not so stated, terminate fatally.

“The name of the person whose career the record foretells was Jittumiá. His father’s name is not legible, owing to a fracture at the upper edge of the record. His grandfather’s name was A’kilasamudraka. He was born in the Saka year 1722 = A. D. 1800, on the completion of the 10th *Danḍa* (four hours) of the night, on Wednesday the 8th of the wane, the solar date being “after the 11th of Bhádra,” (*ekádaśadivagate*). The word “after” (*gate*) shows that the actual date was the 12th, which was Wednesday, but the whole of which had not then expired. This mode of expression is peculiar to horoscopes; but in India the usual practice is to make the epithet apply to all the details of the time mentioned, and not only to the day of the month. Thus, a person born at the moment of writing this word (4h. 41m. P. M. of the 4th) would be described to have been born after 40 minutes, 9 hours, 3 days, 4 months, and 1885 years of the Christian year, and not, as we would ordinarily write, 41 minutes, 11 hours, 4 days, 5 months of 1886. As the horoscope was written obviously by a Bengali astrologer, he doubtless followed the Bengali practice, but, being ignorant and not knowing how to work out the formula in its entirety, stuck the epithet before the day of the month only.

“Assuming that the horoscope was written, as usual in Bengal, within the first six weeks after birth, it must be 85 years old.

"I enclose a Bengali transcript, but as the individual named is not a historical personage, I do not think it would be worth while publishing it in the Proceedings."

A curious earthenware Jar, painted with grotesque figures of birds and flowers, and glazed, brought from Mandalay, was also exhibited.

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LIBRARY.

The following additions have been made to the Library since the Meeting held in April list.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

- Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VII, No. 6, January, 1886.
- . ————. American Journal of Mathematics, Vol. VIII, No. 2.
- . ————. American Journal of Philology, Vol. VI, No. 4.
- . ————. Circulars, Vol. V, No. 47.
- Bombay. Bombay Natural History Society,—Journal, Vol. I, No. 2 April, 1886.
- . Indian Antiquary,—Vol. XIV, Part 178, December, 1885, Part 2; Vol. XV, Parts 180—183, February to May, 1886.
- Brussels. Société Royale Malacologique de Belgique,—Procès-Verbal, 1st August, 1885 to 5th December, 1885.
- Calcutta. Geological Survey of India,—Memoirs, Palæontologia Indica, Vol. III (series X), Parts 7 and 8.
- . ————. Records, Vol. XIX, Part 2.
- . Indian Engineer,—Vol. I, Nos. 2 and 3.
- . Original Meteorological Observations, November, 1885.
- Chicago. American Antiquarian,—Vol. VIII, No. 2.
- Copenhagen. K Nardiske Oldakriftselskab, Aarbger, Vol. I, (2nd series), No. 1.
- Dorpat. Naturforscher-Gesellschaft,—Archiv für die Naturkunde, Vol. X (series 2nd), No. 1.
- . ————. Sitzungsberichte, Vol. VII, No. 1.
- Edinburgh. Botanical Society,—Transactions and Proceedings, Vol. XVI, Part 2.

- Edinburgh. *Scottish Geographical Magazine*,—Vol. II, No. 4, April, 1886.
- Florence. *Società Africana D'Italia*,—*Bullettino*, Vol. II, No. 1.
- Havre. *Société de Géographie Commerciale*,—*Bulletin*, January and February, 1886.
- Lahore. *Anjuman-i-Punjab*,—*Journal*, Vol. VI, Nos. 14—17.
- Leipzig. *Deutsche Morgenländische Gesellschaft*,—*Zeitschrift*, Vol. XXXIX, No. 4.
- Liège. *Société Géologique de Belgique*,—*Annales*, Vol. XII.
- London. *Academy*,—Nos. 724—727.
- . *Athenæum*,—Nos. 3047—3050.
- . *Geological Society*,—*Quarterly Journal*, Vol. XLII, No. 165.
- . *Nature*,—Vol. XXXIII, Nos. 855—858.
- . *Royal Astronomical Society*,—*Monthly notices*, Vol. XLVI, No. 3, January, 1885.
- . *Royal Geographical Society*,—*Proceedings*, Vol. VIII, No. 3, March, 1886.
- . *Royal Microscopical Society*,—*Journal*, Vol. VI (series 2nd), Part I and Supplementary number containing Index.
- . ———. *List of Fellows*, 1886.
- . *Royal Society*,—*Proceedings*, Vol. XXXIX, No. 240.
- . *Society of Telegraph-Engineers and Electricians*,—*Journal*, Vol. XIV, No. 59.
- . *Statistical Society*,—*Journal*, Vol. XLVIII, Part 4, and Jubilee volume, June, 1885.
- . *Zoological Society*,—*Transactions*, Vol. XI, Part 2; Vol. XII, Part I.
- Paris. *Journal Asiatique*,—Vol. VI (series VIII), Nos. 2 and 3.
- . *Société de Géographie*,—*Compte Rendu des Séances*, Nos. 6 and 7, 1886.
- . *Société Zoologique*,—*Bulletin*, Parts 4—6, 1885.
- Pisa. *Società Toscana di Scienze Naturali*,—*Atti, Processi Verballi*, Vol. V.
- Rome. *Società Degli Spettroscopisti Italiani*,—*Memorie*, Vol. XIV, No. 12; Vol. XV, Nos. 1 and 2 and Index to Vol. XIV.

### BOOKS AND PAMPHLETS,

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

- COWELL, E. B., and R. A. NEIL, *The Divyâvadâna*, a collection of early Buddhist Legends. Rl. 8vo. Cambridge, 1886.
- MACGREGOR, MAJOR C. R. *Outline of Singpho Grammar*, 8vo.

MACGREGOR, MAJOR C. R. Rough Notes on Traditions, Customs, &c. of the Singphos and Khámptis. Fcp. Dibrugarh, 1886.

NOER, GRAF. F. A. VON, and BUCHWALD, DR. GUSTAV VON, Kaiser Akbar, ein Versuch über die Geschichte Indiens. 8vo. Leiden, 1885.

### MISCELLANEOUS PRESENTATIONS.

Returns of Railway-borne traffic in the Central Provinces for the quarter ending 31st December, 1885. Fcp. Nagpur, 1886.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Masks, Labrets and certain Aboriginal customs, with an enquiry into the bearing of their Geographical Distribution, by W. H. Dall. 4to. Washington, 1885.

REV. C. H. A. DALL.

Report on Municipal Taxation and Expenditure in the Lower Provinces of Bengal for the year 1884-85. Fcp. Calcutta, 1886.

GOVERNMENT OF BENGAL.

Archæological Survey of India, Vol. XXII. Report of Tours in Gorakhpur, Saran and Ghazipur in 1877-78-79 and 80, by A. C. L. Carlleyle. 8vo. Calcutta, 1885.

Correspondence between the Government of India and the Secretary of State, in 1883, regarding the steps to be taken for a Reduction of the Expenditure of India. Fcp. London, 1885.

Correspondence relating to Burmah since the Accession of King Thebaw in October, 1878. Fcp. London, 1886.

GOVT. OF INDIA. HOME DEPARTMENT.

Report on the Meteorology of India in 1884 by H. F. Blanford, F. R. S. 8vo. Calcutta, 1886.

GOVT. OF INDIA. METEOR. REPORTER.

Archæological Survey of Southern India, Vol. IV. Tamil and Sanskrit Inscriptions, with some notes on village antiquities, collected chiefly in the South of the Madras Presidency. 4to. Madras, 1886.

Manual of the Administration of the Madras Presidency in illustration of the Records of Government and the yearly Administration Reports, Vol. I. Fcp. Madras, 1885.

GOVERNMENT OF MADRAS.

Report on the Administration of the Punjab and its dependencies for 1884-85. Fcp. Lahore, 1886.

GOVERNMENT OF PUNJAB.



Johns Hopkins University. Studies in Historical and Political Science  
Fourth Series.

II Town Government in Rhode Island by W. E. Foster.

III The Narragansett Planters by E. Channing. 8vo. Baltimore, 1886.

JOHNS HOPKINS UNIVERSITY, BALTIMORE.

Schriften der Naturforschenden Gesellschaft in Danzig, Vol. VI, Part  
3. Rl. 8vo. Danzig, 1886.

NATURAL HISTORY SOCIETY, DANZIG.

Untersuchungen über die Entwicklung der primitiven Aorten, by John  
Türstig. Rl. 8vo. Dorpat, 1884.

NATURFORSCHER-GESELLSCHAFT, DORPAT.

Proceedings and Transactions of the Royal Society of Canada for the  
year 1884, Vol. II. 4to. Montreal, 1885.

### PERIODICALS PURCHASED.

Allahabad. Punjab Notes and Queries,—Vol. III, No. 31.

Berlin. Deutsche Litteraturzeitung,—Vol. VII, Nos. 6—9.

Calcutta. Calcutta Review,—Vol. LXXXII, No. 164, April, 1886.

Cassel. Botanisches Centralblatt,—Vol. XXV, Nos. 6—9.

Göttingen. Gelehrte Anzeigen,—Nos. 2 and 3, 1886.

———. Nachrichten,—No. 13, 1885 and Index for 1885.

Leipzig. Annalen der Physik und Chemie,—Vol. XXVII, No. 3.

———. Beiblätter, Vol. X, No. 3.

———. Literarisches Centralblatt, Nos. 7—10, 1886.

———. Hesperos,—Vol. IV, Nos. 114 and 115.

London. Annals and Magazine of Natural History,—Vol. XVII, No.  
99, March, 1886.

———. Chemical News,—Vol. LIII, Nos. 1373—1375.

———. Entomologist,—Vol. XIX, No. 274, March, 1886.

———. Entomologist's Monthly Magazine,—Vol. XXII, No. 262,  
March, 1886.

———. Journal of Botany,—Vol. XXIV, No. 279, March, 1886.

———. London, Edinburgh and Dublin Philosophical Magazine,—  
Vol. XXI, No. 130, March, 1886.

———. Mind,—Vol. XI, No. 42, April, 1886.

———. Nineteenth Century,—Vol. XIX, No. 110, April, 1886.

———. Publishers' Circular,—Vol. XLIX, Nos. 1164 and 1165.

———. Society of Arts,—Journal, Vol. XXXIV, Nos. 1739—1741.

———. New Haven, American Journal of Science,—Vol. XXXI, No.  
182, February, 1886.

Paris. Academie des Sciences,—Comptes Rendus des Séances, Vol. CII,  
Nos. 5—8.

Paris. *Annales de Chimie et de Physique*, (6th series), Vol. VII, February, 1886.

— . *Revue Critique*,—Vol. XXI, Nos. 6—9, and Index to Vol. XX.

— . *Revue des Deux Mondes*,—Vol. LXXIV, Nos. 2 and 3.

— . *Revue Scientifique*,—Vol. XXXVII, Nos. 6—9.

Philadelphia. *Manual of Conchology*, Vol. II Part 5 (second series) and Vol. VIII, Part 29.

Vienna. *Orientalische Museum*,—*Oesterreichische Monatsschrift für den Orient*, Vol. XII, No. 3.

### BOOKS PURCHASED.

Sowerby's *Thesaurus Conchyliorum*, Part XLIII. Rl. 8vo. London, 1886.

*Voyage de découvertes de "L'Astrolabe" pendant les années 1826-29 Faune Entomologique de l'Océan Pacifique. Par le Docteur Boisduval—Première Partie.—Lépidoptères—Deuxième Partie. Coléoptères 2 Vols. With an Atlas of 12 coloured Plates—Rl. 8vo. Paris, 1832.*

PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR JUNE, 1886.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 2nd June, 1886, at 9-15 P. M.

E. T. ATKINSON, Esq., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Twelve 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.

C. Baumgarten, Esq.

P. Doyle, Esq.

A. Macdonald, Esq.

Alexander Hogg, Esq.

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

Dr. K. G. Sircar, M. B., proposed by A. F. M. Abdur Rahman, Esq., seconded by Dr. Hoernle.

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

J. A. Bourdillon, Esq. E. E. A. Kuster, Esq.

The PHILOLOGICAL SECRETARY exhibited 1 gold and 1 silver coin of the reign of the Emperor Aurangzib and 1 silver coin of Sháh Jahán, found at Bijapur, presented by the Bombay Branch of the Royal Asiatic Society. Also 8 old copper coins presented by the Deputy Commissioner of Kheri, Oudh, found underground in the Fort of Ghori Sháh at Khairigarh in that district.

The PHILOLOGICAL SECRETARY read the following report on a find of 22 old silver coins in the Jullunder district.

Report on twenty-two coins forwarded by the Deputy Commissioner of Jullunder with his No. 584, dated 27th April 1886.

1. Neither the place nor particulars of find are mentioned.

2. They are all round rupees of the Emperor Akbar who reigned from 963 to 1014 A. H. = 1556-1605 A. D. and are of two types.

1st type, lettered and ornamented surfaces, *Obv*: Alláhu akbar, jalla jaláluhu. *Rev*: Date and mint.

|                                                                                                   | No. of<br>specimens. |
|---------------------------------------------------------------------------------------------------|----------------------|
| a. Mint Lahore, dates 44, 45, and 46.....                                                         | 7                    |
| b. Mint Ahmedábád dates 44 and 49 .....                                                           | 14                   |
| 2nd type, <i>Obv</i> : square area within scalloped octagon, legend Alláhu akbar, jalla jaláluhu. |                      |
| <i>Rev</i> : octagonal area within two intersected squares, legend and date.                      |                      |
| a. Mint Lahore, date 48 .....                                                                     | 1                    |
| Total, ...                                                                                        |                      |
|                                                                                                   | 22                   |

The NATURAL HISTORY SECRETARY exhibited some deep sea Crustaceans belonging to the genus *Polycheles*, dredged up by H. M.'s Survey steamer "Investigator" off the coast of Ceylon.

The following papers were read :

1. *On the Life-History of certain Calcutta species of Satyrinæ, with especial reference to the alleged Seasonal Dimorphism exhibited by them.*—By L. DE NICÉVILLE, F. E. S.

The PRESIDENT remarked:—It will be in the recollection of those present that in December 1884 Mr. de Nicéville brought to the notice of this Society the existence of seasonal variations in the markings of certain species of Lepidoptera found in Calcutta and its neighbourhood. In the rains the ocellar spots on the underside of the wings are distinct and prominent, whilst in the cold and dry season they are either obsolete or wanting. Mr. Doherty has observed a like phenomenon amongst similar species captured in the Kumáon hills. In his present paper Mr. de Nicéville has confirmed his observations by breeding from the eggs laid by one form, larvæ which developed into butterflies of the other form. Thus from *Y. hübnéri*, Kirby, came towards the middle of November species in all respects identical with *Y. hora*, Moore, the former being the ocellated rainy-season form, and the latter the non-ocellated cold and dry weather form. Similar experiments show *Y. marshallii*,

Butler, is the cold weather non-ocellated form of *Y. philomela*, Johansen, *Mycalesis indistans*, Moore, is the non-ocellated form of *M. mineus*, Linn. and *Melanitis ismene*, Cramer, is the non-ocellated form of *M. leda*, Linn. There is no royal road to the acquisition of accurate knowledge regarding insect-life; and I would commend the process observed by Mr. de Nicéville as that most likely to lead to accuracy and confidence in the results. There is little doubt that progress in this direction will rid our lists of many species badly based on slight differences of colour and size and not on structural characters. Where these characters are vague or not easily differentiated in the imago we shall have to go to the pupa, larva and even to the egg to arrive at a sufficient basis for specific characters. For this purpose it is necessary to have the life-history of each species briefly and accurately recorded, and as the author of the paper just read has told us, the process is neither difficult nor exacting on our time or attention, and will well reward any one who desires to rise above the level of a mere collector. Let no one be discouraged by the long names attached to even the smallest insects: they are of no other value than to serve as arbitrary tickets by which students in other countries will recognise the labelled species as the one to which we refer. The letters of the alphabet, were they numerous enough and capable of a sufficient number of combinations, would serve equally well, for in the great majority of cases there is little or no visible connection between the species named and the name given to it. Doubtless in the earlier part of this century, when the number of species known were not even a tithe of those at present recorded, some effort was made to give suitable names, but practically this has now in a great measure been given up, and after exhausting the deities of the Greek and Roman mythology, authors seem obliged to turn to the Hindu pantheon, and even to the legends of China and ancient Irán for names.

2. *Additional notes on new or rare Indian Butterflies.*—By WILLIAM DOHERTY. Communicated by the NATURAL HISTORY SECRETARY.

3. *On the Derivation and Meaning of the Buddhist term Ekotibháva.*—By DR. R. MITRA.

Professor Max Müller has put forth as a conjecture (*Academy*, April 3, 1886, p. 241) that the term *ekotibháva* is "an irregular contraction of *eka-kotibháva*." He does not, however, in any way pledge himself about its accuracy. He offers it without claiming "either the merit or the responsibility of it." This diffidence is due to the fact of the derivation being open to two serious objections; (1) the elision of the syllable *ka* in *eka*, and (2) the conversion of the cerebral *t* in *koti* into a dental letter. Of the elision there is no analogous instance in the

Sanskrit language, and the assumption, therefore, is entirely arbitrary. Professor Max Müller admits that “to take *ekoti* as an irregular contraction of *ekakoti* is, no doubt, unusual.” The conversion, though not absolutely inadmissible, is uncommon. Ordinarily the un-compounded dental *t* of the Sanskrit remains unchanged in the Pāli, but occasionally it becomes *ḍ* (dental), as in *vidatthi* from the Sanskrit *vitasti*, ‘a span.’ Accordingly the *ekodibhāva* of the Pāli texts may be looked upon as a legitimate derivative of the Sanskrit *ekotibhāva*.

Nor is it difficult to trace a consistent and regular derivation for the word. To an Indian the most obvious derivation in Sanskrit is *eka* + *ūti* = *ekoti*. Professor Max Müller has not noticed this derivation, but, advertent to a passage in Mr. Morris’s letter in the *Academy* of March 27, says, ‘I do not give much for *ekoti* in the *Satapatha brāhmaṇa*, explained as meaning “having the same course.” It looks to me like an attempt to explain a Bhāshā word which had ceased to be intelligible.’ I do not clearly understand the drift of this remark. If it means, as it obviously does, that *ūti* is a ‘Bhāshā’ or vernacular word and not Sanskrit, I would take exception to it. I look upon it as a standard Sanskrit word, quite as pure as any other in that language, unquestionably in no way less so than *eka*. In some form or other it occurs no less than two hundred and forty-seven times in the Sañhitā of the Ṛig Veda, (see Vocabulary attached to the 5th vol. of Max Müller’s *Ṛig Veda*), and in the ‘*Amarakosha*,’ the ‘*Sabdaratnāvalī*,’ the ‘*Medinī*’ and other dictionaries it is by no means wanting. It occurs in the *Purāṇas* too, and in the *Bhāgavata* it is used as one of the ten characteristics of that *Purāṇa*. It is difficult to conceive how, in the face of these authorities, it should cease to be Sanskrit, and be looked upon as a Bhāshā word.

Nor can it be said that the sense in which *ūti* is used in Sanskrit would not be appropriate in the compound term as we have it in Buddhist literature. In the *Ṛig Veda* the meaning in which it is most frequently used is ‘preserving’ (Ṛ. V. 2. 1. 4-6. *Devasya yantyūtayo vividhāh*), or ‘preserver’ (Ṛ. V. 4. 4. 2. *Urushyantam mādhvīdasrá na ūtih*). Elsewhere it means ‘sewing,’ ‘weaving,’ ‘distilling,’ ‘oozing,’ ‘speed,’ ‘sport,’ ‘play,’ or ‘recreation.’ Śrīdhara Svāmī, in his commentary on the *Bhāgavata*, says it means “attachment to work.”\* He also adds the meaning “play” (*līlā*). Böhtlingk, in the *St. Petersburg Worterbuch*, gives all these meanings. Of these, the most likely meanings for the explanation of the compound term are ‘preserving,’ ‘attachment

\* कर्मणां वासनाः जयन्ते कर्मभिः सन्तान्यन्ते इत्युच्यते यद्वा दृष्टार्थान् संक्षेपाद्वा वयवे धातोर्विद् रूपं । जयन्त कर्मभिर्विदन्ते संश्लिष्यन्ते वा जतयते ।

Commentary on the *Bhāgavata*.

to work,' and 'play,' and any one of them, I should think, would suit the requirements of the case. Seeing that the term is used with reference to *dhyána* or meditation, the first meaning would imply the condition of preserving only one thing in the mind to the exclusion of all others; the second would imply attachment to one work to the exclusion of all others; the third would indicate devotion to one sport to the exclusion of all others. In any case the sum of the meaning would be undisturbed and exclusive concentration of the mind on one object, the same which is indicated by *ekágratá*, to which Professor Max Müller very correctly refers. Indeed his *ekakoṭi* is only a synonym of *ekágratá*, both meaning 'single-pointedness,' only *ekakoṭi* is not used by Sanskrit writers in that sense. Of course in the absence of any explanation of the term in any ancient text it is not possible to be positive, but it is not difficult to come to a close approximation, quite sufficient for all practical purposes.

The term is to be met with frequently in Buddhist literature, and Mr. Morris in his letter to the 'Academy' (March 27) adverts to several authorities. I shall, however, confine my attention to the 'Lalita Vistara' where the word occurs in a position in which its sense is most obvious. Chapter XXII of that work begins by describing four meditations or *dhyánas* which the Bodhisattva performed after overcoming *Mára*, (an account of which is given in the next preceding chapter). The description of the first two of these I shall here reproduce. "The Bodhisattva, having overcome the inimical *Mára*, having suppressed all thorns, having at the head of battle overpowered all success, having (before him) uplifted umbrellas, flags and pennons, free from all desires, free from all sins and inauspicious signs, performed the first *dhyána*, which was argumentative (*savitarka*), deliberative (*savichára*), the result of discrimination (*vivekaja*), joyous and pleasing, and enjoyed it. Having accomplished argumentativeness and dispassion, from peace of mind resulting from the condition of *ekoti*, he produced the second meditation, which was non-argumentative (*avitarka*), non-deliberative (*avichára*), the result of *samádhi* (*samádhija*), joyous and pleasing, and enjoyed it." (p. 439). From the position of the word *ekoti* in this passage (*ekoti-bhávát*, 'from the condition of *ekoti*') it is obvious that it implies the first meditation, and the nature of that meditation is defined by the three epithets *savitarka*, *savichára*, and *vivekaja*. These terms have been taken, like most of the philosophical terms of the Buddhists, from the Yoga system of the Hindus, and they are, with their privatives, thus explained in Bhoja's commentary on the Yoga aphorisms :—

'Among these (the four kinds of meditation), when accepting the gross elements and the organs as the objects, pondering is carried on

with reference to which is antecedent and which is consequent, and the relation of the words to their meanings, it is called "Argumentative meditation" (*savitarka-samádhi*). Should this pondering, however, be independent of the idea of their antecedents and their sequence and the relation between their names and meaning, it would be called "Non-argumentative" (*nirvitarka*). When pondering is engaged in with reference to something subtle, as the subtle elements and the internal organ, and to their qualities in relation to space, time, &c., it is "Deliberative" (*savichára*). But should this pondering be in regard to those subjects themselves, without reference to their relation to time and space and simply as substrata of qualities, it is said to be "Non-deliberative" (*nirvichára*).' (My translation, of the Yoga, p. 18).

This shows clearly that the condition of *ekotibháva* is that of pondering on a single object, whether crude or subtle, or a conscious meditation which, in the language of the Yoga Aphorisms (I. 17), is "attended with argumentation, deliberation, joy and egoism." *Uti* then is an object, and since that object is calculated to produce joy, it would be by no means unreasonable or improper to indicate it by a term which implies recreation, sport, or play. The Yogi makes meditation his only sport. In Yoga works this is called "seeded meditation" (*savija-samádhi*), because the pondering is carried on in reference to a seed or nucleus. This is only a preparatory course, for it is practised to train the mind for the subsequent stages in which consciousness gradually fades away, and ultimately there is nothing left but mere existence. I admit that my theory involves the acceptance of a metaphorical meaning, but the use in the text of such terms as "joyous," "pleasing," and "enjoyment" removes the objection. At any rate it is not open to the objections I have urged above to the derivation given by Professor Max Müller. Still I offer it only as a conjecture for whatever it is worth.

4. *The Miná tribe of Jajpúr in Mewar.*—By KAVIRÁJ SHYÁMAL DÁS, M. R. A. S.

(Abstract.)

The Minás claim to be descended from high-caste fathers and low-caste mothers, and are divided into 340 clans, of which only 17 are numerous, the others being represented by only a few families each. They are found all over Rajputana but principally in Mewar, Jaypur, Bundi and Kota. The two most important clans are the Parihár and Mothis.

The Parihárs claim descent from Náhar Rao, Rája of Mandor in Márwár, and proofs of their existence are found as early as the 12th century. They are a manly warlike race, and practice husbandry merely



as a cloak to their normal profession of thieving. They levy black-mail on travellers and have a regular system of plunder.

The Mothís are said to be descended from a Pramara Rájput, named Rohi Dás, and a Banjára woman. They account for the name by a legend that their Banjára ancestress gave birth to twins in a field of *moth*, whence they were called *moth-is* or 'lords of moth.' They worship an indigenous hero called Máláji, concerning whom they have a legend, which is given in some detail by the writer.

Brief notices are also given of the Sindum and Dhoding clans, and the author then expounds his own view of the origin of the race, whom he derives from the *Vaidehas* mentioned by Manu as descended from a Vaisya father and Brahminí mother. The offspring of Vaideha fathers and Bhil mothers were Mevs or Mevs, from whose union with the Gujars from Sindh and Gujrát sprung the Minás, whose name he derives from *Mev* with the genitive particle *ná* of Gujaráti. Evidence of place names is then adduced to shew the former habitat of Mevs and Minás, and proof of their connexion with the Gujars from certain points of similarity in their habits and customs.

The PRESIDENT remarked:—To any one coming from the N. W. Provinces the Mevs, Mewas or Mewátis are not unknown. Tradition makes them holders of the forests and fortresses in the Duáb from Meerut right down to Cawnpore before the Musalmán invasion. Later on, and indeed up to the first quarter of the present century, they were found in numbers along the foot of the Kumáon hills from the Ganges to the Gaula. Before the Musalmán invasion they were lords of the soil in the middle Duáb and were driven out, not by the conquerors only but by Rájput colonies who had been disturbed by the invaders. The Musalmán historians are full of notices of the Mevs and Mewás and the trouble encountered in reducing them to subjection. During the present century they have sunk very low, taking to thieving, cattle-stealing and *dakaiti* as a livelihood, and the Mina Mevs especially have an unenviable record in our police annals. There is little doubt that even so they represent a non-Aryan race that once held great possessions in upper India, but much has yet to be done before we can accurately understand their old position in the complex agglomeration of races inhabiting India.

5. *Coins supplementary to the "Chronicles of the Pathan Kings of Delhi.*—By EDWARD THOMAS, C. I. E."—By C. J. RODGERS, Esq.

This is the author's fourth contribution to the numismatics of the pre-Moghul period. It contains drawings and descriptions of thirty coins, which are either new, or have been at one time, in his possession.

The coins are not arranged chronologically, but the author promises a fifth article to complete his series in which he will give a chronological arrangement of the whole. The coins described in the present article are those of Firúz Sháh, Shamsuddin Altamash, Tughlak Sháh, Ibráhim Sháh of Jaunpur, Nasiruddin Alá-uddin, Ibráhim Lodi, a new type of Changiz Khán, and others.

The article will be published in the Journal.

6. *Indian Ants of the Indian Museum, Calcutta. Part II.*—By PROF. AUG. FOREL, Zurich. Communicated by the NATURAL HISTORY SECRETARY.

7. *On two new species of Ilex from the Eastern Himalayas.*—By GEORGE KING, M. B., LL. D., F. L. S., Superintendent of the Royal Botanic Garden, Calcutta.

Both these Papers will be printed in full in the Journal, Part II.

The subject of Conversation by the PHILOLOGICAL SECRETARY was the Miná tribe of Jajpúr.

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### LIBRARY.

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

#### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

- Angers. Société d'Etudes Scientifiques,—Bulletin, 1884.
- Baltimore,—Johns Hopkins University,—American Chemical Journal, Vol. VIII, No. 1, March, 1886.
- . ———. Studies from the Biological Laboratory, Vol. III, No. 5.
- Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Tijdschrift, Vol. XXXI, Nos. 1 and 2.
- . Koninklijke Natuurkundige Vereeniging in Nederlandsch-Indië,—Natuurkundig Tijdschrift, Vol. XLV.
- Bordeaux. Société Linnéenne,—Actes, Vol. XXXVIII.
- Brussels. Société Royale des Sciences de Liège,—Mémoires, 2nd Series, Vol. XI.
- Calcutta. Agricultural and Horticultural Society of India,—Journal, Vol. VII, Part 4.
- . Indian Engineer,—Vol. I, No. 5.

- Calcutta. Indian Meteorological Memoirs,—Vol. III, Part 1; Vol. IV, Part 1.
- Florence. Società Africana D' Italia,—Bullettino, Vol. II, No. 2.
- . Società Italiana di Antropologia, Etnologia e Psicologia Comparata,—Archivio per L' Antropologia e la Etnologia, Vol. XV, No. 3.
- . ————. Sui denti incisivi dell' uomo—Osservazioni e Note del Dott. Iacopo Danielli.—Quadri Statistici.
- Giessen. Oberhessischen Gesellschaft für Natur und Heilkunde,—Vierundzwanzigster Bericht, Vol. XXIV.
- The Hague. Koninklijk Instituut voor de Taal-Land-en Volkenkunde van Nederlandsch-Indië—Bijdragen, Vol. V, No. 2.
- Ithaca. Cornell University,—Library Bulletin, Vol. II, No. 1.
- Lahore. Anjuman-i-Punjab,—Journal, Vol. VI, Nos. 18—21.
- London. Academy,—Nos. 728—731.
- . Athenæum,—Nos. 3051—3054.
- . Nature,—Vol. XXXIII, Nos. 859—862.
- Paris. Annales du Musée Guimet,—Revue de L'Histoire des Religions, Vol. XI, Nos. 2 and 3; Vol. XII, Nos. 1—3.
- . Société de Géographie,—Compte Rendu des Séances, No. 8, 1886.
- Roorkee. Indian Forester,—Vol. XII, Nos. 4 and 5, April and May, 1886.
- . Professional Papers on Indian Engineering,—Vol. IV, No. 13, May, 1886.
- St. Petersburg. Russian Geographical Society,—Proceedings, Vol. XXII, No. 1.
- Toronto. Canadian Institute,—Proceedings, Vol. III, No. 3, February, 1886.
- Turin. R. Accademia delle Scienze,—Atti, Vol. XXI, No. 2.
- Vienna. Akademie der Wissenschaften,—Almanach, 1885.
- . Archiv für österreichische Geschichte, Vol. LXVI, Nos. 1 and 2; Vol. LXVII, No 1.
- . Denkschriften, Mathematisch—Naturwissen Classe, Vols. LXVIII and LXIX.
- . Philosophisch-Historische classe, Vol. XXXV.
- . Sitzungsberichte, Mathematisch-Naturwissen Classe, Part I, Vol. XC, Nos. 1—5, Vol. XCI, Nos. 1—4; Part II, Vol. XC, Nos. 1—5, Vol. XCI, Nos. 1—3; Part III, Vol. LXXXIX, Nos. 3—5, Vol. XC, 1—5, Vol. XCI, Nos. 1 and 2.
- . Philosophisch-Historische Classe, Vol. CVII, Nos. 1—2; Vol. CVIII, Nos. 1—3; Vol. CIX, Nos. 1 and 2.

- Vienna. Akademie Sitzungsberichte, Register, Vols. LXXXVI to XC.  
 ———. K. K. Geologische Reichsanstalt,—Jahrbuch. Vol. XXXVI,  
 No. 1.  
 ———. ———. Verhandlungen, Nos. 2—4, 1886.  
 Washington. Philosophical Society,—Bulletin, Vol. VIII.  
 Yokohama. Deutsche Gesellschaft für Natur und Völkerkunde Ostasiens,  
 Mittheilungen, Vol. IV, No. 34.  
 Zagreb. Arkeologickoga Druztva,—Viestnik, Vol, VIII, No. 2.

### BOOKS AND PAMPHLETS.

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

- ROY, PROTAP CHANDRA. Mahábháráta, English translation, Parts 22  
 and 23. 8vo. Calcutta, 1886.

### MISCELLANEOUS PRESENTATIONS.

- Archæological Survey of India. Reports of a Tour in Bundelkhand and  
 Rewa in 1883-84 and in Rewa, Bundelkhand, Malwa and Gwalior in  
 1884-85, Vol. XXI, Parts 1 and 2 by Major General Cunningham.  
 8vo. Calcutta, 1885.  
 East India Loans raised in England. Returns of all Loans raised in  
 England under provisions of Act of Parliament outstanding at the  
 commencement of the half years ended on 30th September, 1885  
 and 31st March, 1886. Fcp. London, 1886.  
 East India Loans raised in India. Returns of all Loans raised in India  
 chargeable on the Revenues of India outstanding at the commence-  
 ment of the half year ended 30th September, 1885. Fcp. London,  
 1886.

#### GOVERNMENT OF INDIA, HOME DEPARTMENT.

- International Meteorological Observations, February, 1886. 4to, Wash-  
 ington, 1886.  
 Memorandum to accompany Charts of Temperature and Rainfall of  
 India by H. F. Blandford. 8vo. Calcutta, 1886.  
 Monthly Weather Review, January, 1886. 4to. Washington, 1886.

#### GOVERNMENT OF INDIA, METEOROLOGICAL REPORTER.

- Report on Instruction in the Madras Presidency for 1884-85. Fcp.  
 Madras, 1885.

#### GOVERNMENT OF MADRAS.

- Report of the second regular Settlement of the Land Revenue of the  
 Jhelum district, Rawal Pindi Division. 8vo. Lahore, 1883.

Report on the Land Revenue Settlement of the Siba Jagir in the Kangra district of the Punjab. Rl. 8vo. Lahore, 1882.

GOVERNMENT OF THE PUNJAB.

Johns Hopkins University Studies in Historical and Political Science. 4th Series IV, Pennsylvania Boroughs, by W. P. Holcomb. 8vo. Baltimore, 1886.

JOHNS HOPKINS UNIVERSITY, BALTIMORE.

Annales du Musée Guimet. Le Yi-king ou livre des Changements de la dynastie des Tsheon—Par P. L. F. Philastre—Vol. XVIII. 4to. Paris, 1885.

MUSE'E GUIMET.

Was Ecclesiastical Money coined at Clonmacnoise, A. D. 1170, by Aquila Smith, M. D., M. R. I. A.

V. A. SMITH, ESQ.

Account of the final reductions with the details of the South Parasnath Meridional series and the South Malunsha Meridional series of the South East Quadrilateral. 4to. Dehra Dun, 1885.

SURVEY OF INDIA. TRIG. BRANCH.

### PERIODICALS PURCHASED.

- Bombay. Legends of the Punjab,—Vol. III, No. 29, May, 1886.  
 Calcutta. Indian Medical Gazette,—Vol. XXI, No. 4, April, 1886.  
 Edinburgh. Edinburgh Review,—Vol. CLXIII, No. 334, April, 1886.  
 Geneva. Archives des Sciences Physiques et Naturelles,—Vol. XV, Nos. 1—4.  
 Leipzig. Annalen der Physik und Chemie,—Vol. XXVII, No. 4.  
 London. Chemical News,—Vol. LIII, Nos. 1376—1380.  
 ———. Nineteenth Century,—Vol. XIX, No. 111, May, 1886.  
 ———. Publishers' Circular,—Vol. XLIX, Nos. 1166 and 1167.  
 ———. Quarterly Review,—Vol. CLXII, No. 324, April, 1886.  
 ———. Society of Arts,—Journal, Vol. XXXIV, Nos. 1742—1746.  
 ———. Westminster Review,—Vol. CXXV, No. 138, April, 1886.  
 Paris. Revue des Deux Mondes,—Vol. LXXIV, No. 4; Vol. LXXV, No. 1.



PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR JULY, 1886.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 7th July, 1886, at 9-15 P. M.

E. T. ATKINSON, Esq., C. S., President in the chair.

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 gentleman, duly proposed and seconded at the last meeting of the Society, was ballotted for and elected an Ordinary Member.

Dr. K G. Sircar, M. B.

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

Capt. C. T. Bingham, (for re-election) proposed by L. de Nicéville, Esq., seconded by Major G. F. L. Marshall.

R. E. S. Thomas, Esq., proposed by T. G. H. Moncrieffe, Esq., seconded by L. de Nicéville, Esq.

The following gentleman has intimated his wish to withdraw from the Society.

Maulvi Serájul Islám.

The PHILOLOGICAL SECRETARY exhibited 2 silver coins presented by the Deputy Commissioner of Hissar, being part of a find of Treasure Trove in that district.

The PHILOLOGICAL SECRETARY read the following reports on two finds of coins.

- I. Report on 12 silver coins forwarded by the Deputy Commissioner of Hoshiárpur, Central Provinces, with his No. 28, dated 7th January 1886.

The particulars and place of the find are not stated.

They are all round silver rupees of the following Moghul Emperors of Delhi.

|          |                                                                                                                                                                                                                                                                         | No. of<br>specimens. |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 1.       | VI. <i>Aurangzib Alamgír</i> , A. H. 1068—1118 = 1658—1707 A. D. Circular Area. <i>Obv.</i> name of Emperor, legend and year of reign. <i>Rev.</i> Mint, legend and date. Mint Akbarábád, year of reign 5 .....                                                         | 1                    |
| 2.       | VIII. <i>Bahádur Sháh</i> (Sháh Alam,) A. H. 1118—1124 = 1707—1712 A. D. Circular Area. <i>Obv.</i> name of Emperor and date. <i>Rev.</i> Mint and year of reign. Mint Lahore, year of reign 2 .....                                                                    | 1                    |
| 3.       | XIII. <i>Muhammad Sháh</i> . A. H. 1131—1161 = 1719—1748 A. D. They are of two types, <i>viz.</i> :—<br><i>a.</i> Marsden's No. 916, p. 664. Mint, Jehánábád, years of reign 1-6-15 ...<br><i>b.</i> Marsden's No. 923, p. 668. Mint Jehánábád, years of reign 12-23-21 | 3<br>7               |
| Total... |                                                                                                                                                                                                                                                                         | 12                   |

- II. Report on 69 coins and a silver chain forwarded by the Deputy Commissioner of Montgomery with his No. 184, dated 10th February 1886.

1. The coins were found when digging the foundations of a bridge at Dipalpur.
2. They are all round silver coins of various Moghul Emperors.

|    |                                                                                                                                                            | No. of<br>Specimens. |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 1. | V. <i>Sháh Jehán</i> , 1037—1068. A. H. = 1627—1658, A. D. Circular Area. <i>Obv.</i> name of Emperor. <i>Rev.</i> Legend, Mint, and year of reign 1 ..... | 1                    |



|    |                                                                                                                                                                                                    | No. of<br>specimens.                                          |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 2. | VI. <i>Aurangzib Alamgír</i> , 1068—1118 A. H. = 1658—1707 A. D. They are of three types, viz. :—                                                                                                  |                                                               |
|    | a. Marsden's No. 897, p. 665. Mints Súrat, Láhor and Etáwah, years of reign 3-4-8.—27-28-38-41 .....                                                                                               | 9                                                             |
|    | b. Circular Area. <i>Obv.</i> name of Emperor and legend, with date under upper line. <i>Rev.</i> Mint and year of reign. Mint Akbarnuggur, year of reign 4 .....                                  | 1                                                             |
|    | c. Circular Area. <i>Obv.</i> name of Emperor and legend. <i>Rev.</i> Mint and year of reign. Mint Murshidábád, year of reign 48 .....                                                             | 1 11                                                          |
|    |                                                                                                                                                                                                    | <hr style="width: 10%; margin-left: auto; margin-right: 0;"/> |
| 3. | VIII. <i>Bahádur Sháh</i> (Sháh Alam), 1118—1124 A. H. = 1707—1712 A. D. Circular Area. <i>Obv.</i> name of Emperor. <i>Rev.</i> legend, mint and year of reign. Mint Láhor, year of reign 3 ..... | 1                                                             |
| 4. | IX. <i>Jehándar Sháh</i> , 1124 A. H. = 1712 A. D. Marsden's No. 905, p. 659. Mint Sháh Jehánábád, year of reign 1 .....                                                                           | 1                                                             |
| 5. | X. <i>Farrokh Sír</i> , 1124—1131 A. H. = 1712—1719 A. D. They are of two types, viz. :—                                                                                                           |                                                               |
|    | a. Marsden's No. 912, p. 662. Mints Shah Jehánábád, Láhor and Súrat, years of reign 2-3-7.....                                                                                                     | 5                                                             |
|    | b. Circular Area. <i>Obv.</i> name of Emperor and legend. <i>Rev.</i> Mint and year of reign 5-7 .....                                                                                             | 2 7                                                           |
|    |                                                                                                                                                                                                    | <hr style="width: 10%; margin-left: auto; margin-right: 0;"/> |
| 6. | XI. <i>Rafiè ed derjat</i> , 1131 A. H. = 1719 A. D. <i>Obv.</i> name of Emperor and legend. <i>Rev.</i> Mint and year of reign. Mint Láhor, year of reign 1 .....                                 | 1                                                             |
| 7. | XIII. <i>Muḥammad Sháh</i> , 1131—1161 A. H. = 1712—1748, A. D. They are of three types, viz. :—                                                                                                   |                                                               |

|          |                                                                                                                                                                  | No. of<br>specimens. |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| a.       | Marsden's No. 918, p. 667. Mints Murshidábád, Láhor and Kórá. years of reign, 1-5-8-9-80-12-22-28                                                                | 11                   |
| b.       | Marsden's No. 921, p. 667. Mints Murshidábád and Láhor. Years of reign 4-10-11-13-14-15-17 20-23-25                                                              | 11                   |
| c.       | Circular Area. <i>Obv.</i> name of Emperor. <i>Rev.</i> legend. Mint and year of reign. Mint Láhor, years of reign 2-3-4-5-6-8-9-11-12-18-21-22-23-24-25-26..... | 20 42                |
| <hr/>    |                                                                                                                                                                  |                      |
| 8.       | XVI. <i>Alam Sháh</i> , 1175—1220 A. H. = 1761—1806, A. D. They are of three types, <i>viz.</i> :—                                                               |                      |
| a.       | Marsden's No. 951, p. 683. Mint Etáwah, years of reign 2-3 .....                                                                                                 | 2                    |
| b.       | Circular Area. <i>Obv.</i> name of Emperor. <i>Rev.</i> legend, mint and year of reign. Mint indistinct, years of reign 2-3 .....                                | 2                    |
| c.       | Circular Area. <i>Obv.</i> name of Emperor and date. <i>Rev.</i> Mint and year of reign. Mint Karimábád, year of reign 2 .....                                   | 1 5                  |
|          |                                                                                                                                                                  | <hr/>                |
| Total... |                                                                                                                                                                  | 69                   |
| <hr/>    |                                                                                                                                                                  |                      |

3. The chain is an ordinary Indian silver chain of no importance.

BABU P. GHOSHA exhibited some Japanese Magic Mirrors, and made the following remarks on them :

Here are twelve Magic Mirrors of Japan. They are all of bronze, the proportion of tin to copper varying from

|        |     |     |    |                                               |
|--------|-----|-----|----|-----------------------------------------------|
| Copper | ... | ... | 80 | } a trace of zinc.<br>} No silver or arsenic. |
| Tin    | ... | ... | 20 |                                               |
| to     |     |     |    |                                               |
| Copper | ... | ... | 80 | } a trace of antimony.<br>} No silver.        |
| Tin    | ... | ... | 16 |                                               |
| Lead   | ... | ... | 4  |                                               |

They are more or less productive of the so-called magical effects, which are increased by heating the disc or by rubbing their back with a hard and smooth surface.

They have all on their back certain devices deeply relieved and tolerably polished. The reflecting surface in some has an amalgam and is slightly convex. The designs on the back are not in the least traceable on the reflecting surface. They are of various sizes but all intended to be used as hand mirrors.

The phenomenon from which they derive their name occurs thus :—When a ray of strong divergent light, such as the sunlight or that of an oxyhydrogen lamp, is thrown upon the reflecting surface, and when its spectrum is cast upon a white screen, the devices on the back of the mirror are reproduced in the spectrum with more or less vividness, the relieved figures being represented by brighter lines and the depressions by darker shades.

It is remarkable that although the Magic Mirror of Japan was known for a long time in Europe so few attempts at explaining the phenomenon have been made. The earliest notice in Europe that I have obtained of the existence of these mirrors was in 1832 by Dr. Brewster, whose explanation was founded on the description of a mirror given by James Prinsep in the *Journal of this Society*, Vol. I.; but as Dr. Brewster had not seen the mirror, his explanation was necessarily defective.

The next notice was by Arago, who exhibited a mirror to the Academy of Sciences of France in 1844. In 1847 Stanislas Julien and Professor Person exhibited a mirror to the same Academy, and in 1853 Maillard produced a mirror, and a notice of the same appeared in the *Comptes Rendus* of the Academy for that year. So that altogether four notices of this curious work of ancient art occur in that periodical.

In 1864 and 1865 M. Govi read before the Academy of Turin two papers on the results of experiments made by him with three magic mirrors.

In 1878 Mr. Ayrton published in the Proceedings of the Royal Society of London, a paper setting forth the process of manufacturing the article, which he had observed while a Professor of the Polytechnic College of Japan. In addition to the opportunities mentioned above Mr. Ayrton had in his possession an excellent specimen of a magic mirror which he exhibited to the Society.

Previous to the publication of the last named paper, Dr. Geerts published a paper in the Transactions of the Asiatic Society of Japan for 1875-76 in which he fully gave the details of the method of manufacturing the same as practised in that country.

M. M. Bertin and Dubosq in the *Journal de Physique* give a resumé of the papers noted above.

So early as 1832, James Prinsep observed the following facts :

1. The disc is slightly convex on the reflecting side.
2. The ground is coated with a thin layer of silver.
3. Back deeply carved and indented.
4. Metal highly sonorous.
5. Conceal and cover the back still the spectrum shews the device on the back.
6. Irregularities of surface not perceptible with diffused light.
7. Even when the silvering is removed the image in the spectrum continues, but instead of shewing a bright white it becomes red.
8. Thick parts of the mirror are most illuminated.

The following he ascertained by experiment—

9. Specula of unequal thickness were cast and polished, the image reflected from them did not shew the device on the back : it was smooth.
10. Difference of density of the parts had nothing to do with the magic effect, for if the mirrors were stamped the thinnest parts being the densest ought to give the strongest reflection : but that was not the case.
11. A silver disc annealed at a red heat and stamped shewed a smooth spectrum.

Explanation of J. Prinsep :—

Irregularities of the surface. Rays from the concave portion converging in a focus give greater reflection.

This irregularity is increased by heating the disc when the thin parts varying in their expansion create concavity and convexity relatively. The convexity is not uniform nor is it convex everywhere. The places corresponding to the device on the back are concave.

The explanations of Stanislas Julien, Person and Brewster were alike. They all attribute the magic effect of the mirror to finer and more reflecting metal. This theory supposes that the reflecting surface is deeply engraved and the hollows are filled with a finer metal and then the whole polished.

M. Govi was the first to find out that heating the mirror improved its magic effect : the thinner parts being more rapidly heated than those in relief became more convex, the irregularities of the surface became more pronounced and the magic effect increased.

Mr. R. W. Atkinson of the University of Tokio, Japan, wrote in *Nature* that by rubbing the back of a mirror with a blunt polished instrument so as to create a scratch deep enough the spectrum indicated a bright image of that line.

Dr. Geert in 1875-76 pointed out that the effect was due to the irregularity of the polished surface owing to the buckling up of the plate.

Aryton summed up that—

The irregularities of the surface are brought about by the peculiar process adopted in working them. The mirror comes out from the mould as a plane disc. Before being polished the surface is scored in all directions with a pointed tool. Naturally it offers more resistance in the thick than in the thin parts, and the operation makes a concave surface, and the elastic force of the plate by re-action makes a convex surface, the convexity being more prominent in the thin parts of the plates than in those corresponding to the designs on the back.

M. M. Bertin and Dubosq's experiments, however, are the latest on the subject. They published the results of their experiments in the *Journal Physique*. They have not only fully corroborated the explanation given by J. Prinsep in 1832, but they have been so far successful as to be able to manufacture magic mirrors not only of speculum metal and bronze, but also of glass, which latter are superior to the bronze ones in many respects. Their first experiments in casting and polishing bronze mirrors were not at all satisfactory. But they found that by heating their mirror they succeeded in making it magical, and the effect continued so long as it remained hot. The effect partially remained after repeated heating. But repeated heating injures the mirror, as it is unequally heated in parts and the designs are deformed. The next natural step attained by the energetic experimenters was to produce change of curvature in the mirror by means other than heat. This they obtained by means of pressure. They prepared air-tight hollow boxes to which they fixed their mirror, and by rarifying or condensing the air of the box they gave diverse curvature to the mirror.

Following these experimenters M. Leon Laurent of Paris, an optician, has prepared glass mirrors which ordinarily reflect a smooth spectrum but under pressure become magical. These philosophical toys are now exhibited in Lecture rooms, and are the best explanation of the Japanese mirror.

Our next step ought to be to have magic mirrors without any device on the back. This may be prepared by taking cast of the reflecting surface of a mirror under pressure and then by reproducing it by galvanic deposition. The surface in that case will have all the irregularities of the reflecting surface of the magic mirror without the device on the back.

The following papers were read :—

1. *Note on some of the symbols on the coins of Kunanda*—By W. THEOBALD, ESQ., M. R. A. S.

The paper will be published in full in Part I of the Journal for 1886.

2. *Remarks on an Inscription of Mahendrapála Deva of Kanauj.*—By DR. RÁJENDRALÁLA MITRA.

Nine-and-thirty years ago I translated, at the request of the late Mr. J. W. Laidlay, then Secretary of the Society, a copper-plate inscription received from Colonel Stacy.\* This translation, together with my reading of the text, appeared in the Journal for 1848, without any note or comment on the historical value of the record. It was followed, in 1862, by a paper by Mr. F. E. Hall, who gave a revised reading with some comments. In the following year, *i. e.*, twenty-four years ago, I published a paper under the title of “On a Land-grant of Mahendrapála Deva, of Kanauj,” in which I found a counterpart of the genealogy given in the former plate. The transcript and translation in this instance were made from a facsimile furnished the Society by Mr. James Cosserat, of Motihári. Mr. J. F. Fleet, the Government Epigraphist, has now published (*Indian Antiquary*, XV, pp. 105 f.) a revised transcript of this record, together with some comments, in which he attempts to show that the grant does not refer to Kanauj; that the word Mahodaya, a synonym of Kanauj, does not mean Kanauj in the inscription; that the dynasty named was not of Kanauj, but of some place between Allahabad, Benares and Srávasti; and that there were many gross errors in my reading. The new transcript has been prepared after a careful examination of the original copper-plate by a professional gentleman of the high rank of Government Epigraphist, and is obviously worthy of every consideration. And if the deductions drawn from it be correct, it must follow that my paper should be entirely rejected. After a careful study of it, however, I find that no necessity has yet arisen for the Society to cancel my paper, nor for me to withdraw any of the leading assumptions I put forth in it.

The deductions made by Mr. Fleet are all based on the reading and interpretation of a single word in the first line of the record. He reads it *skandhávárát*, and translates it into “from the camp.” He admits, however, that in the original the word as read by him is *skandhádárát*

\* The place where it was found is not known. Mr. Fleet is mistaken in supposing that it is alleged it was found at Vijayamandir, Udayapur. No such statement occurs in the Journal.

(p. 112, note 42), and it follows necessarily that his grand major is, by his own admission, a guess only. In 1848 I read the word on the Stacy plate to be *suddháchárát*, and Mr. Hall, after examining the plate, accepted that version in 1862. I have this day re-examined the plate, and found no reason to alter my original reading. The letters on the plate are large, deeply cut, and in an excellent state of preservation, but the phonetic value of two of the four syllables of which the word under dispute is made up is doubtful. The first syllable may be read at option *su* or *ska*, more likely the latter. The second syllable is unmistakably and unquestionably *ddhá*, *d* superposed on *dhá*; it cannot possibly be read *ndhá*. The third is unlike a *v*; the upper end of the loop in *v* usually coalesces with the perpendicular stroke a little below or at the point of junction of the upper horizontal stroke (*mátrá*), but the coalition is not complete when the necessity of curving it backwards for the vowel *e* is felt; but in the letter under notice the upward stroke of the loop rises wide-apart from the perpendicular stroke and joins the *mátrá* separately. This peculiarity is more common, though not characteristic, with *cha*. The governing syllable in the collocation is *ddhá* and under its influence I took the first syllable to be *su* and not *ska*. Mr. Fleet wishes to take the first syllable to be the "light," and to alter *ddhá* into *ndhá* and *chá* into *vá*. In matters of this kind the safest course is to prefer that which necessitates the smallest amount of assumption; and in the present instance my reading accepts one possible variation, and my critic's two, and I see no reason therefore to subscribe to his opinion. In the facsimile of the Dighwa plate received by me the letters appeared smudgy, but I was satisfied that they were the counterparts of what I had met with in the Stacy grant. Mr. Fleet thinks differently; but he is not positive about his own reading. He puts it forward as a guess, and it is hard therefore to accept it as an undoubted and reliable major.

Assuming, however, that Mr. Fleet's reading is the right one, the question arises, does the word *skandhávára* really mean a "camp" in the position in which it occurs in the inscription? Mr. Fleet seems to have no doubt in this respect. He says: "Mahendrapála and Vináyakapála's charters were both issued from Mahodaya. Dr. Fitz-Edward Hall first identified this place with Kányakubja or Kanauj; and this identification was accepted throughout the rest of the discussion, by Dr. Rájendralál Mitra and General Cunningham, as well as by himself. It may be perfectly true that Mahodaya is one of the names of Kányakubja. But the Mahodaya of these two inscriptions was only a *skandhávára* or 'camp,'—an epithet which it is most unlikely should be applied to so large and famous a *rájdhaní* or 'capital,' as Kanauj, and there is

no reason why there should not have been several Mahodayas, just as there are several Udayapurās, in very different parts of the country," (p. 116). The late Doctor Wilson, however, thought differently. In his Sanskrit-English Dictionary, he gives, among other meanings of *Skandhāvāra*, "a royal capital." Hemachandra, a lexicographer of high authority, also supplies the same meaning, and, in the *Sabdachandrikā*, we have *rājadhānyām*, the very word which Mr. Fleet insists should have been used. The *Sabdakalpadruma* and the *Vāchaspatya* also use the same word. And, since *skandhāvāra* means a *rājadhānī*, which would be a most appropriate epithet for a large metropolis like Kanauj, all the arguments founded on the assumption of its meaning 'a camp,' and the deductions drawn therefrom, are thrown away. I fancy Mr. Fleet accepted the first meaning which occurred to him, and did not take the trouble to look into any dictionary for it, and hence the mistake I here notice. In a footnote he refers his readers to a note of his in the *Indian Antiquary*, Vol. XII, p. 111, but that refers to *sthira-sivira*, not to *skandhāvāra*, and that does not advance the discussion in the least.

The question of date has been discussed by Mr. Fleet at some length, but in the absence of any datum it is vain to thrash evidence already well thrashed, nor do I think it worth while to notice the numerous hypercriticisms in which Mr. Fleet has indulged in regard to it. I cannot, however, allow this opportunity to pass without pointing out the erroneous character of two of the revisions he has made. I read the name of Rāma-bhadra's mother to be Mahīśatā, and that of his wife Madappā. My critic makes the former Īśatā, and the latter Appā. These changes have been accepted under the impression that the first syllable in either case is *mad*, an affix of the preceding word *Srī*. At first sight this does not appear to be inconsistent. In Bengal it is a common-enough practice in the present day to put *mad* after *Srī* when writing to, or about, a respectable person; but it serves only as an expletive, and does not in any way alter or affect the sense. *Srī* used alone is quite as expressive as it is in conjunction with *mad*. The practice, besides, does not obtain in the North Western Provinces, and that it did not obtain in mediæval times is well-known to readers of Sanskrit inscriptions. The inscription under notice is itself a sufficient proof in that respect. Mahendrapála, the reigning sovereign, who grants the charter, appears with *Srī* only, without the expletive affix. His male ancestors for five generations, all kings in their respective times, are treated in the same way; so are his mother, the queen dowager Chandrabhattārikā, his great-great-grandmother, and great-great-great-grandmother, all queens *de facto* and *de jure*. In the Stacy plate his wives, Dehanāsā and Mahidevī, are equally content with *Srī* only, without the *mad*. And there is nothing whatever



to show that the affix, though not needed for the reigning king and queen, was essential for the honour of the deceased grandmother and great-grandmother. It cannot be said that the affix has been used to prevent a hiatus, or facilitate the coalition of the initial vowels of the names with a preceding consonant, for the coalition or *sandhi* of the initial vowels with the vowel *i* of *S'ri* would have been quite as easy and convenient as with the consonant *d* of *mad*. It is observable, too, that the reading *madisátá* is not unquestionable. Mr. Fleet himself observes (p. 112, note 46,) that "the *d* of *dí* is somewhat damaged in this inscription, both on the seal and on the plate." Under the circumstances, I look upon the assumption of the *mad* as totally unjustifiable, and for the present the names should remain Mahísatá and Madappá as read by me.

*P. S.*—Since the above was in type I have read in the *Indian Antiquary* for May Mr. Fleet's paper on the Stacy plate. It calls for no remark in addition to what has been already anticipated in the above note. It is observable, however, that Mr. Fleet admits (p. 140) that the second syllable of the word which he reads *skandhávára* is written *dhhá* and not *ndhá*.

3. *On Pests belonging to the Homopterous family of Coccidæ, which attack Tea, Cinchona, and Coffee trees.*—By E. T. ATKINSON, Esq., C. S., B. A.

In this paper the author seeks to give such an account of this important family as will induce observers to take up its study seriously. It comprises those insects known as scale-insects, or gall-insects, which are so hurtful to the coffee, cinchona, tea and fruit trees generally. Nothing of value has yet been written regarding those species of this family that occur in India, with the exception of the *Carteria lacca* that furnishes the lac and lac-dye, which forms such a valuable article of export from Calcutta. The family is distributed amongst the sub-families *Diaspina*, *Brachyscelina*, *Lecanina* and *Coccina*, of which some hundreds of species have been described, but very few of which are recorded from India. The larval form of these insects has six legs, many jointed antennæ, and a rostrum, or sucking apparatus: the adult ♀ as a rule has neither wings, legs, nor antennæ, but only a rostrum, whilst the adult ♂ has two wings, legs, and antennæ, but no rostrum, or mouth. Their forms vary from flat to spherical, many are covered with a white farinose filamentary substance, others with a felted, waxy, nacreous and ever calcareous substance. All are minute and require much care in their manipulation and preservation. The author

disclaims all idea of purely scientific aims in this popular introduction to the study of a much neglected group of great economical importance to residents in the East. His object is to collect facts on which hereafter to base a scientific examination of the species of these insects occurring in India.

The PRESIDENT brought to the notice of the meeting letters addressed to him by Mr. Green, of Puduloya in Ceylon, regarding a new pest belonging to the Homopterous family *Coccidæ*, which is now committing great ravages on the Coffee plantations there, and in some cases compelling the abandonment of its cultivation.

Mr. Green writes:—"I have been led to pay some attention to the Homoptera of Ceylon, chiefly by reason of the fearful destruction caused by many of their number to agricultural products. I am now sending you, under separate cover, a few specimens of these insects. The parcel contains:—

"(a) A glass tube with coffee leaves, on the under surface of which you will find a species of *Lecanium*. This has only lately appeared in Ceylon, but has already spread in an astonishing manner and has caused inconceivable destruction in the Coffee districts. It is entirely distinct from *L. coffeæ* and *L. nigrum*, noticed by Mr. Nietner in his pamphlet on 'The Coffee-tree and its enemies.' Both these two species I am familiarly acquainted with, though their ravages are now very slight compared to the work of the green insect now forwarded. I have not been able to obtain the male form, though both sexes of the other two are fairly common.

"(b.) Cinchona twigs with a species of *Coccus*, lying apparently beneath the cuticle of the bark, which is raised in the form of small blisters. This is a most extraordinary insect and, with closely allied species which are numerous on other plants, has considerably perplexed me, especially as to the nature of the integument which covers it. In the specimens from Cinchona this would seem to be actually the cuticle of the bark, many of the incipient cracks extending right across the integument of the insect. Those now sent are all females. The male form closely resembles those in the tube containing spirits of wine. The larvæ and pupa are very similar to the species found on tea-leaves. The adult female has neither legs, antennæ nor eyes, the only external member being a fine sucking bristle (rostrum) which proceeds from a spot near the middle of the undersurface. In the young all the members are complete.

"(c.) *Loranthus* leaves with allied species of *Coccus*, also apparently lying beneath the cuticle of the leaf; but on examining the

integument under the microscope with transmitted light one finds no traces of cellular formation nor any stomata, all of which, however, are complete in the tissues of the leaf immediately below the insect. Adhering to this integument, or forming part of it, are always one or more of the characteristic scales of the *Coccidæ*, which would seem to be the cast skins of the insect. The young larva after fixing itself to the leaf soon exhibits the scaly covering on its posterior half, leaving the anterior part free. The scale is then shed remaining in its place and the insect lies freely beneath and loses all its external members, except the sucking bristle. The integument, under a high magnifying power, appears to be composed of an irregular network of sinuous, intersecting filaments, with no trace of cellular formation.

“(d.) A tube containing both sexes of another species affecting the leaves of the *Loranthus*. The integument of the female is continuous with the woolly covering of the leaf. The males are minute red flies with one pair of two-veined semihyaline wings which at rest are folded straight down the back, completely overlapping each other: the antennæ are very long and setaceous: anal extremity without filaments but with a long central point. Both the upper and the under surface of the head appear to be furnished with a pair of eyes and I can find no ocelli. The lower pair of eyes correspond to what is described by Nietner in the ♂ of his *Pseudococcus* as ‘two black knobs resembling blunted mandibles, representing the external mouth.’ These two spots are present in the males of all this family, and I cannot help thinking that they have been erroneously described as mandibles, the external mouth, in my opinion, being present only as a minute spot between the anterior pair of legs, in the same position in which it is situate in the female. [Mr. Green is right in regarding these knobs other than mandibles; they are eyes.] If the head of the insect be macerated in water and examined with transmitted light, all four spots appear as colourless globules with two concentric dark rings, an appearance which would be given by the cornea of the eye.”

Unfortunately most of these specimens suffered so much from damp in transit that they were useless for examination. In a subsequent letter it is stated that “the green *Lecanium* has spread at an extraordinary rate, and we have in consequence been compelled to abandon a large acreage of coffee and replant the ground with tea. This species is vastly more destructive than anything of the kind that has previously been experienced. The ravages of *L. coffeæ* were nothing in comparison. It is curious that though they have been increasing so rapidly there has been apparently no generation of male insects.”

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## LIBRARY.

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

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*presented by the respective Societies and Editors.*

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Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VIII, No. 2, May, 1886.

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GOVERNMENT OF BENGAL.

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Glossary of Anglo Indian Colloquial Words and Phrases, and kindred terms, Etymological, Historical, Geographical and Discursive, by Colonel H. Yule, R. E. 8vo. London, 1886.

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- MÜLLER, F. MAX. *Sacred Books of the East*, Vols. XXVI—XXVIII. 8vo. London, 1885.
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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR AUGUST, 1886.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th August 1886, at 9.15 P. M.

E. T. ATKINSON, Esq., C. S., President in the Chair.

The minutes of the last meeting were read and confirmed.

Twenty-four presentations were announced, as detailed 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 :

Captain C. T. Bingham, B. S. C.

R. E. S. Thomas, Esq.

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

Count H. Condenhove, Attaché Austrian Hungarian Legation, Buenos Aires, proposed by E. F. T. Atkinson, Esq., seconded by H. M. Percival, Esq.

Captain M. J. Meade, S. C., Superintendent of Moghea Operations, Nimach, proposed by Surgeon Major T. H. Hendley, seconded by H. M. Percival, Esq.

Babu Rangalála Mukerji, proposed by Babu Ráj Krishna Mukerji, seconded by Babu Haraprasád Sástri.

The following papers were read :

1. *On the Antiquity of Khotan, translated and compiled from the Tibetan MSS. the "Bod-kye-yigtshang," and the "Dsam-ling Gyeshi."*  
—By BABU SARAT CHANDRA DÁS, C. I. E.

(Abstract.)

This paper has been compiled from two Tibetan MSS. Bod-kye-yigtshang and Dsam-ling-Gyeshi.

Fragmentary records of the ancient kingdom of Khotan, which was founded in B. C. 235, were preserved in the great monastery of Sekya in Tibet, and from there the author of the first mentioned of the two MSS. obtained his information in 1432.

The paper may be described as a collection of Buddhist legends about Khotan. Khotan, or Khutan, is a little state in Kashgar and is described in the report of the Yarkund Mission. It was long a centre of Buddhism.

Babu Sarat Chandra Dás mentions that it was known by Indian writers as Chadana and by Tibetan writers as Li-yul.

According to one legend it was visited by king Asoka 250 years after the Nirvána of Buddha.

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

2. *The Tibetan Chronological Table "Re-humig" from the MSS. historical work "Choos-joong-jonsang."* Compiled by Lama Yeshe Palgor of Amdo in 1747 A. D.—Translated by BABU SARAT CHANDRA DÁS, C. I. E.

(Abstract.)

In this paper Babu Sarat Chandra Dás continues the contributions to the history of Tibet and the Tibetan religion, of which eleven have already been published in the Journal.

The paper consists of a Chronological table of events in Tibet from 1026 to 1745. It is called in Tibetan the Re-lin-mig and has been extracted from a MS. work in Tibet called Chhos Joong Jonsang which was composed by Lama Yeshe Peljor of Amdo in 1747.

The table is a monkish chronicle and gives little or no information about secular matters. Babu Sarat Chandra Dás however states that it is regarded in Tibet as being of very high authority, and possibly Tibetan scholars may be able to derive valuable information from it.

Babu Sarat Chandra Dás has prefixed to it a life of the author, from which it appears that he visited China and resided for four years at Peking, where he was treated with great distinction by the Emperor.

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

*Abstract of papers regarding Enquiries into the Ethnology of Bengal, forwarded by the Government of Bengal to the Asiatic Society for Criticism and Suggestions.*

In September 1882 the Government of India, at the instance of the Census Committee, issued a Circular to all Local Governments and Administrations suggesting that steps should be taken, on the basis of the statistics recorded in the Census of 1881, towards collecting more pre-

cise information than at present exists regarding the castes and occupations of the people of India.

Owing to administrative reasons the work in Bengal was not commenced till February 1885, when Mr. H. H. Risley, C. S. was selected as possessing in a special degree the attainments necessary for the successful performance of the task. After making some experimental enquiries in Behar and North Eastern Bengal, and preparing a scheme for collecting information regarding the castes and occupations of the people in a systematic manner, Mr. Risley, with the permission of Government, proceeded to Lahore for the purpose of conferring with Mr. D. C. I. Ibbetson, Director of Public Instruction in the Punjab, and Mr. J. C. Nesfield, Inspector of Schools in Oudh, both of whom had had considerable experience in similar enquiries, and were in a position to offer valuable advice on the subject. One chief object of the conference was to secure, as far as possible, that ethnographical researches carried on in different Provinces of the Bengal Presidency should proceed on the same general lines in order that their results might be of some service to students of comparative ethnology in Europe. For this purpose two sets of questions were drawn up, the first set being a general series, designed to bring out by as few and simple questions as possible the leading characteristics of any particular caste; the second set was of a more special character, divided under the heads of Constitution—Domestic ceremonies—Religion—Superstitions—Social Customs—Occupations—Relations to Land—the minute detail being intended to cover the main heads of ethnographical enquiry in India.

From the standpoint of the modern science of anthropology it is hoped that it may be possible, by careful observation of the social practises now prevailing in Bengal, to arrive at fresh data throwing light on the ethnographical problems on which scientific men, such as Sir John Lubbock, Sir Henry Maine, Mr. E. B. Taylor, M. Emile Laveleye, M. Fustel de Coulanges, and Herr Adolf Bastian are engaged in Europe. The principal points, which it is supposed a record of Indian customs may help to clear up, are the early history of marriage, the development of the family, modes of relationship, the early history of inheritance, and the growth of property in land. These are some of the questions which European ethnologists are interested in, and a distinct hope has already been expressed by Sir Henry Maine that something may be done to render available for the use of scientific men in Europe, the large body of barbarous or semi-barbarous customs, both Aryan and non-Aryan, which still survives in India. It is felt that many of the ethnological speculations of recent years have been based too exclusively upon comparatively unverified accounts of the customs of savages

of the lowest type; that the unrivalled opportunities for observation which European officials in India possess have hitherto been imperfectly utilized; and that such results as have been obtained have been recorded in publications not readily accessible, and without sufficient regard to the lines of investigation pursued by ethnologists in Europe. It is also apprehended that the rapid spread of education, and the growth of practical intelligence in India, may lead, within the next generation, to the abandonment of many practices which are of special interest to ethnologists.

Mr. Risley has been induced to supplement these enquiries by an examination of the physical characteristics of certain selected castes and tribes of Bengal, in consequence of having had some special opportunities, during the last five years, of observing the progress of the great religious and social movement described by Sir Alfred Lyall as "the gradual Brahmanising of the aboriginal, non-Aryan, or casteless tribes."\* There is every reason to suppose that the movement has been going on for many centuries, and that, although at the present day its working can probably be most readily observed in Chotá-Nágpur, the Orissa hills, and parts of Eastern and Northern Bengal, it must formerly have operated on a similar scale in Bengal proper and Behar. The well-known tenth chapter of Manu, which endeavours to account for the existence of the non-Aryan castes by representing them as the offspring of marriages between the four original castes, gives clear indications that in Manu's time, fixed by Burnell at 500 A. D., some of the non-Aryan races had already begun to intrude upon the Brahmanical caste system, while others were still in the tribal stage. Arguing from facts now observable it seems likely that some of the castes alleged by Manu to be the result of more or less complicated crosses were really tribes that had lost their identity; for at the present day, by merely looking to customs, ceremonies and the like, it is found in the majority of cases that the admission of a tribe into the charmed circle of Hinduism results after a generation or two in the practical disappearance of the tribe as such. Its identity can no longer be traced by direct enquiries from its members, or inferred from observation of their usages. Later on not only do distinctive customs fall into disuse, but the tribe itself, after its promotion to the rank of a caste, breaks up into a number of endogamous groups, each of which practically forms a separate caste. But even in this extreme case the physical characteristics which distinguished the tribe tend on the whole to be preserved, and it is this persistence of the type which accounts for the differences of feature, which, though only definable by scientific methods, are marked enough to make

\* Asiatic Studies, p. 102.

it possible within certain limits to make a fair guess at a man's caste from his personal appearance.

These general impressions regarding the differences of physical type observable within the range of the recognised caste organization, coupled with the difficulty of throwing much light upon the true origin of the lower and intermediate castes by collating customs and ceremonies which they have borrowed in the most liberal fashion from the higher castes, suggested the possibility of applying to the leading tribes and castes of Bengal the methods of recording and comparing typical physical characteristics which have yielded valuable results in other parts of the world. Acting on the suggestion of Professor Flower, Director of the Natural History Department of the British Museum, which was concurred in by Mr. Francis Galton, President of the Anthropological Institute of Great Britain, Mr. Risley has adopted the plan laid down by Dr. Paul Topinard, Professor of the School of Anthropology and Secretary to the Anthropological Society of Paris, in his book entitled "Éléments d' Anthropologie Générale," which contains full details of the method in which the enquiry should be prosecuted, — a method which has been found applicable to Indian conditions for dealing with living subjects.

The Government of Bengal are anxious that any criticisms or suggestions that many occur to the Members of the Asiatic Society may be communicated to Mr. Risley for guidance in the prosecution of his enquiries.

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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,—American Chemical Journal,  
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III, No. 7, June, 1886.

- Berlin. Königlich Preussische Akademie der Wissenschaften,—Sitzungsberichte, Nos. 40—54, 1884; Nos. 1—39, 1885, with Index for 1884.
- Bombay. Bombay Natural History Society,—Journal, Vol. I, No. 3, July, 1886.
- . Indian Antiquary,—Vol. XV, Part 185, July, 1886.
- Bordeaux. L'Académie Nationale des Sciences, Belles Lettres et Arts, —Actes, Vols. XLIV—XLVI.
- Bruxelles. Société Entomologique de Belgique,—Annales, Vol. XXIX, Part 2.
- Budapest. Magyar Tudományos Akadémia,—Bulletins, Nos. 1—2, 1884; No. 3, 1885.
- . ————. Ertekezések, Vol. XI, Nos. 11 and 12; Vol. XII, Nos. 1—5.
- . ————. Mathematische und Naturwissenschaftliche Berichte aus Ungarn, Vol. II.
- . ————. Nyelvelmléktár, Vols. XI and XII.
- . ————. Nyelvtudományi Közlemények, Vol. XVIII, Nos. 2 and 3; Vol. XIX, No. 1.
- . ————. Régi Magyar Könyvtár, Vol. II.
- . ————. Ungarische Revue, Nos. 1—7, 1885.
- Buenos Aires. Museo Nacional,—Anales, Vol. III, No. 2.
- Calcutta. Indian Engineer,—Vol. I, Nos. 8 and 9.
- . Original Meteorological Observations,—February and March, 1886.
- Christiania. Videnskabs-Selskabet,—Forhandlinger, 1885.
- Dorpat. Naturforscher-Gesellschaft,—Archiv für die Naturkunde, series i, Vol. IX, No. 3; series ii, Vol. X, No. 2.
- . ————. Sitzungsberichte, Vol. VII, No. 2.
- The Hague. Koninklijk Instituut voor de Taal,—Land-en Volkenkunde van Nederlandsch-Indië,—Bijdragen, series v, Vol. I, No. 3.
- Lahore. Anjuman-i-Punjab, Journal (English section), Vol. VI, Nos. 27 and 28.
- London. Academy,—Nos. 737—740.
- . Athenæum,—Nos. 3060—3063.
- . Geological Society,—Quarterly Journal, Vol. XLII, Part 2, No. 166, May, 1886.
- . Nature,—Vol. XXXIV, Nos. 868—871.
- . Royal Astronomical Society,—Monthly notices, Vol. XLVI, No. 6, April, 1886.
- . Royal Geographical Society,—Proceedings, Vol. VIII, No. 5, May, 1886.



- London. Royal Society,—Proceedings, Vol. XL, No. 242.  
 ———. Statistical Society,—Journal, Vol. XLIX, Part 1, March, 1886.
- Moscow. Sociétés Impériale des Naturalistes,—Bulletin, Nos. 1 and 2, 1885.
- Paris. Société Académique Indo-Chinoise,—Bulletin, series ii, Vol. II.  
 ———. Société d' Anthropologie,—Bulletins, series iii, Vol. IX, No. 1.  
 ———. Société de Géographie,—Compte Rendu des Séances, Nos. 12 and 13, 1886.  
 ———. Société Zoologique,—Bulletin, Vol. XI, Nos. 1—3.  
 ———. Musée Guimet,—Revue de L' Histoire des Religions, Vol. XIII, No. 1.
- Rome. Società Degli Spettroscopisti Italiani,—Memorie, Vol. XV, No. 5, May, 1886.
- Roorkee. Indian Forester,—Vol. XII, No. 6, June, 1886.
- Trieste. Società Adriatica di Scienze Naturali,—Bollettino, Vol. IX, Nos. 1 and 2.
- Turin. R. Accademia Delle Scienze,—Atti, Vol. XXI, No. 5, April, 1886.
- Yokohama. Asiatic Society of Japan,—Transactions, Vol. XIV, Part 1.

### BOOKS AND PAMPHLETS,

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

- GILES, HERBERT A. The Remains of Lao Tzu. Re-translated. 8vo. Hongkong, 1886.
- ROY, PROTAP CHANDRA. The Mahábhárata, translated into English Prose Part XXIV. 8vo. Calcutta, 1886.

### MISCELLANEOUS PRESENTATIONS.

- Report on the Jails of the Central Provinces for the year 1885. Fcp. Nagpur, 1886.
- Report on the Nagpur Experimental Farm in the Central Provinces for the year 1885-86. Fcp. Nagpur, 1886.
- Report on the working of the Registration Department in the Central Provinces for the year 1885-86. Fcp. Nagpur, 1886.
- Review of the Reports on Estates under Government management in the Central Provinces during the year ending September 30th, 1885. Fcp. Nagpur, 1886.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Annual Report on Inland Emigration for the year 1885. Fcp. Calcutta, 1886.

Annual Report on the Insane Asylums in Bengal for the year 1885. Fcp. Calcutta, 1886.

Annual Report on the Police Administration of the Town of Calcutta and its suburbs for the year 1885. Fcp. Calcutta, 1886.

Report of the Calcutta Court of Small Causes for the year 1885. Fcp. Calcutta, 1886.

GOVERNMENT OF BENGAL.

Excursions et Reconnaissances,—Vol. XI, No. 26. 8vo. Saigon, 1886.

GOVERNMENT OF FRENCH COCHIN CHINA.

Pahlavi, Gujarâti and English Dictionary by Jamaspji Dastur Minocheherji Jamasp Asana, M. A., M. D., Vol. IV. 8vo. Bombay, 1886.

Telegraphic Correspondence relating to Military Executions and Dacoity in Burmah. Fcp. London, 1886.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

International Meteorological Observations, April, 1885. 4to. Washington, 1886.

Monthly Weather Review, March, 1886. 4to. Washington, 1886.

GOVERNMENT OF INDIA, METEOR: REPORTER.

General Report on the operations of the Survey of India Department, administered under the Government of India during 1884-85.

GOVERNMENT OF INDIA, REVENUE DEPARTMENT.

Annual Report of the Madras Medical College, Session 1884-85. Fcp. Madras, 1886.

GOVERNMENT OF MADRAS.

A. Magyar Kötöszók, Egyuttal az Összetett Mondat Elmélete, by Simonyi Zsigmond. Rl. 8vo. Budapest, 1883.

Finn-Magyar Szótár, by Dr. Szinnyei József. Rl. 8vo. Budapest, 1884.

MAGYAR TUDOMÁNYOS AKADÉ'MIA.

Administration Report of the Marine Survey of India for 1885-86.

MARINE SURVEY OF INDIA.

Delle Relazioni Antiche e Moderne fra L' Italia e L' India. Demy 8vo. Rome, 1886.

PIETRO AMAT DI S. FILIPPO.

Sacred books of the East by F. Max Müller. Vol. XXVI. The Sathapatha-Brâhmana by J. Eggeling, Part II, Books III and IV. 8vo. Oxford, 1885.

———. Vols. XXVII and XXVIII. The sacred Books of China,—The Texts of Confucianism by James Legge, Parts III. and IV. 8vo. Oxford, 1885.

SECRETARY OF STATE FOR INDIA.

A Journey of Literary and Archæological Research in Nepal and Northern India during the winter of 1884-85. By Cecil Bendall. 8vo. Cambridge, 1886.

UNIVERSITY PRESS, CAMBRIDGE.

Norges Gamle Love, by Gustav Storm. Vol. IV. 4to. Christiania, 1885.  
UNIVERSITÉ ROYALE DE NORVEGE, CHRISTIANIA.

### PERIODICALS PURCHASED.

- Allahabad. Punjab Notes and Queries.—Vol. III, No. 34, July, 1886.  
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 ———. Journal für die reine und angewandte Mathematik,—Vol. XCIX, No. 4; Vol. C, No. 1.  
 Bombay. Legends of the Punjab,—Vol. III, No. 30, June, 1886.  
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 ———. Indian Medical Gazette,—Vol. XXI, No. 7, July, 1886.  
 Cassel. Botanisches Centralblatt,—Vol. XXVI, Nos. 3—7.  
 Geneva. Archives des Sciences Physiques et Naturelles,—Vol. XV, No. 6.  
 Göttingen. Gelehrte Anzeigen,—Nos. 7—9, 1886.  
 ———. Nachrichten,—Nos. 5 and 6, 1886.  
 Leipzig. Annalen der Physik und Chemie,—Vol. XXVIII, No. 3.  
 ———. ———. Beiblätter,—Vol. X, Nos. 5 and 6.  
 ———. Hesperos,—Vol. IV, Nos. 118—120.  
 ———. Literarisches Centralblatt,—Nos. 17—22, 1886.  
 London. Annals and Magazine of Natural History,—Vol. XVII, Nos. 101 and 102, May and June, 1886.  
 ———. Chemical News,—Vol. LIII, Nos. 1386 and 1387; Vol. LIV, Nos. 1388 and 1389, and Index to Vol. LIII.  
 ———. Entomologist,—Vol. XIX, No. 276, May, 1886.  
 ———. Entomologist's Monthly Magazine,—Vol. XXII, No. 264, May, 1886.  
 ———. Journal of Botany,—Vol. XXIV, No. 281, May, 1886.  
 ———. London, Edinburgh and Dublin Philosophical Magazine,—Vol. XXI, Nos. 132 and 133, May and June, 1886.  
 ———. Messenger of Mathematics,—Vol. XV, Nos. 10—12.  
 ———. Nineteenth Century,—Vol. XX, No. 113, July, 1886.  
 ———. Publishers' Circular,—Vol. XLIX, Nos. 1170 and 1171.  
 ———. Quarterly Journal of Microscopical Science, Vol. XXVI, No. 103, April, 1886.  
 ———. Quarterly Review,—Vol. CLXIII, No. 325, July, 1886.  
 ———. Society of Arts,—Journal, Vol. XXXIV, Nos. 1752—1755.

- New Haven. *American Journal of Science*,—Vol. XXXI, No. 185.  
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 Nos. 15—20, and *Tables*, Vol. C.
- *Annales de Chimie et de Physique*, Vol. VIII, (6<sup>me</sup> Serie),  
 May, 1886.
- *Journal des Savants*,—April, 1886.
- *Revue Critique*,—Vol. XXI, Nos. 16—20.
- *Revue des Deux Mondes*,—Vol. LXXV, No. 4; Vol. LXXVI,  
 No. 1.
- *Revue de Linguistique*,—Vol. XIX, No. 2.
- *Revue Scientifique*,—Vol. XXXVII, Nos. 16—21.

### BOOKS PURCHASED.

- DISTANT, W. L. *Rhopalocera Malayana: A Description of the Butterflies of the Malay Peninsula, Part XI*, May, 1886. 8l. 4to. London, 1886.
- HUDSON, C. T. *The Rotifera or Wheel-Animalcules, Parts I—IV*. 4to. London, 1886.
- MILNE, JOHN. *Earthquakes and other earth movements*. (*International Scientific Series*, Vol. LVI). 8vo. London, 1886.

**PROCEEDINGS**  
OF THE  
**ASIATIC SOCIETY OF BENGAL,**  
FOR NOVEMBER, 1886.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd November, 1886, at 9 P. M.

E. T. ATKINSON, Esq., C. S., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Seventy-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 by the Council during the recess in accordance with rule 7.

Count H. Condenhove.

Captain M. J. Meade, S. C.

Babu Rangalála Mukerji.

Dr. G. H. D. Gimlette.

Hewling Luson, Esq.

Dr. L. A. Waddell.

The COUNCIL proposed the following gentleman for election as an Associate Member at the next meeting :

Babu Sarat Chandra Dás, C. I. E., Deputy Inspector of Schools, Darjeeling, on account of his attainments as a Tibetan scholar.

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

C. S. Bayley, Esq.

W. C. Bennett, Esq.

R. G. Thomson, Esq.

J. R. Reid, Esq.  
 F. C. Black, Esq.  
 C. Girdlestone, Esq.

The SECRETARY announced the death of the following Members of the Society :

*Ordinary Members.*

H. L. St. Barbe, Esq.  
 Dr. J. E. N. Wise (Life Member).  
 J. Holdsworth-Fisher, Esq.

*Associate Members.*

J. Schaumburgh, Esq.  
 Rev. C. H. Dall.

The PHILOLOGICAL SECRETARY exhibited 3 silver coins presented by the Bombay Branch of the Royal Asiatic Society, being part of a find of Treasure Trove in the Khaira District.

The PHILOLOGICAL SECRETARY read reports on the following finds of coins, *vis.* :

- I. Report on 118 silver coins forwarded by the Collector of Tipperah with his No. 361. G. dated 23rd June, 1886.
1. The coins were found under the plinth of a house in Palgaon, Berahimpore, Pergunnah Sarail, subdivision Brahmanbariah.
  2. They are all round silver rupees of the Emperor Sháh Alam who reigned from 1175 to 1220 A. H. = 1768 to 1806 A. D.

No. of specimens.

Type: Marsden's DCCCCLXVIII, p. 689. Mint Murshidábád, year of reign 19 ..... 118

- II. Report on 32 coins forwarded by the Collector of Mozufferpore with his No. 483, dated 1st July, 1886.
1. The coins were found whilst erecting a wall in the village of Belber, Pergunnah Bisarah.
  2. They are all silver coins of the following Moghul Emperors :

No. of specimens.

1. XIII, *Muhammad Sháh.* A. H. 1131—1161 = A. D. 1719—1748. Marsden's No. DCCCXXII, p. 668. mint Ahmedábád, years of reign 27, 29, 30..... 3

|    |                                                                                                                                                                                                            | No. of specimens. |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 2. | XIV, <i>Ahmed Sháh Bahádur.</i> A. H. 1161—1167 = A. D. 1748—1754. Circular area. <i>Obv.</i> name of Emperor and date. <i>Rev.</i> Legend, mint, and year of reign: mint indistinct, year of reign 2..... | 1                 |
| 3. | XV, <i>Alamgír Zám.</i> A. H. 1167—1175 = A. D. 1754—1761. Circular area. <i>Obv.</i> name of Emperor. <i>Rev.</i> Trident, mint, and year of reign. mint Azímábád, years of reign 1, 2, 3, 6, 9.....      | 8                 |
| 4. | XVI, <i>Alam Sháh.</i> A. H. 1175—1220 = A. D. 1761—1806. They are of two types, <i>viz.</i> :—                                                                                                            |                   |
|    | <i>a.</i> Marsden's No. DCCCCLXI, p. 688. mint Murshidábád, years of reign 4, 12, 19.....                                                                                                                  | 8                 |
|    | <i>b.</i> Marsden's No. DCCCCLXVIII, p. 689. mint Murshidábád, year of reign 19 .....                                                                                                                      | 12                |
|    |                                                                                                                                                                                                            | 20                |
|    | Total,                                                                                                                                                                                                     | 32                |

III. Report on 68 silver coins forwarded by the Secretary to Government North-West Provinces and Oudh with his No. 3541  $\times 52$ , dated Naini Tal, 9th July, 1886.

1. The coins were found in the Basti district. The particulars of the find are not stated.

|    |                                                                                                                                               | No. of specimens. |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1. | Fifty-two are small and roughly executed silver coins described by Wilson in p. 586, pl. III, Vol. XVII of Asiatic Researches, <i>viz.</i> :— |                   |
|    | <i>a.</i> Figure No. LIX, pl. III .....                                                                                                       | 10                |
|    | <i>b.</i> Figure No. LXII, pl. III.....                                                                                                       | 12                |
|    | <i>c.</i> Indistinct .....                                                                                                                    | 30                |
|    |                                                                                                                                               | 52                |
| 2. | VIII, <i>Bahádur Sháh,</i> A. H. 1118—1124 = A. D. 1707—1712. Marsden's No. DCCOCI, p. 657. mint Súrat, year of reign 1 .....                 | 1                 |
| 3. | X, <i>Farrokh Sír,</i> A. H. 1124—1131 = A. D. 1712—1719. Marsden's No. DCCCXII, p. 562. mint Sháh Jehánábád, years of reign 2, 5, 7 .....    | 6                 |

No. of specimens.

|                                                                                                                  |       |    |
|------------------------------------------------------------------------------------------------------------------|-------|----|
| 4. XIII, <i>Muhammad Sháh</i> , A. H. 1131—1161 =<br>A. D. 1719—1748. They are of three types,<br><i>viz.</i> :— |       |    |
| a. Marsden's No. DCCCCXVII, p.<br>665. mint Shah Jehánábád, year<br>of reign 2, 3, 7, 9, 11, 7 .....             | 6     |    |
| b. Marsden's No. DCCCCXVIII, p.<br>644. mint Sháh Jehánábád, year<br>of reign 1 .....                            | 2     |    |
| c. Marsden's No. DCCCCXXI, p.<br>667. mint Sháh Jehánábád, year<br>of reign 11.....                              | 1     | 9  |
|                                                                                                                  | Total | 68 |

IV. Report on 16 silver coins forwarded by the Collector of Monghyr with his letter No. 982, R., dated 20th July, 1886.

1. The coins were found at Jahángir, a hill situated in Thaná, Monghyr.
2. They are all round silver rupees of various Moghul Emperors.

No. of specimens.

|                                                                                                                                                                                                                         |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1. V, <i>Sháh Jehán</i> , A. H. 1037—1068 = A. D.<br>1627—1658. Circular area. <i>Obv.</i> name<br>of king and date. <i>Rev.</i> year of reign and<br>mint: mint Murshidábád, year of reign 1, 2                        | 8        |
| 2. X, <i>Farrokh Sír</i> , A. H. 1124—1131 = A. D.<br>1712—1719. Circular area. <i>Obv.</i> name<br>of Emperor, legend and date. <i>Rev.</i> year of<br>reign and mint: mint Murshidábád, year<br>of reign 1, 6, 7..... | 6        |
| 3. XIII, <i>Muhammad Sháh</i> , A. H. 1131—1161 =<br>A. D. 1719—1748. Circular area. <i>Obv.</i><br>name of king and date. <i>Rev.</i> mint and<br>year of reign: mint Murshidábád, year of<br>reign 2 .....            | 1        |
| 4. XVI, <i>Alam Sháh</i> , A. H. 1175—1220 = A. D.<br>1761—1806. Circular area. <i>Obv.</i> name<br>of king. <i>Rev.</i> mint and year of reign:<br>mint Murshidábád, year of reign 2 .....                             | 1        |
|                                                                                                                                                                                                                         | Total... |
|                                                                                                                                                                                                                         | 16       |



V. Report on 2 gold and 85 silver coins forwarded by the Deputy Commissioner of Sialkot with his letter No. 1503, dated 4th September 1886.

1. The coins were found in different places and on different dates, but no particulars connected with the finds have been given.
2. They are all coins of the under-mentioned Moghul Emperors.

No. of specimens.

Gold Coins.

|          |       |                                                                                                                                 |   |
|----------|-------|---------------------------------------------------------------------------------------------------------------------------------|---|
| 1.       | VI,   | Aurangzib, A. H. 1068—1118 = A. D. 1658—1707. Type: Marsden's No. DCCCXC, p. 652. mint Jehánábád, year of reign 49...           | 1 |
| 2.       | XIII, | Muhammad Sháh, A. H. 1131—1161 = A. D. 1719—1748. Type: Marsden's No. DCCCXXIII, p. 668. mint Jehánábád, year of reign 23 ..... | 1 |
| Total... |       |                                                                                                                                 | 2 |

Silver Coins.

|    |      |                                                                                                                                          |    |
|----|------|------------------------------------------------------------------------------------------------------------------------------------------|----|
| 3. | III, | Jalál-ed-din Akbar, A. H. 963—1014 = A. D. 1556—1605, They are of six types, <i>vis.</i> :—                                              |    |
|    | a.   | Marsden's No. DCCCXIX, p. 596. mint Fatehpur, dates 990-92-93-94-95-96-97 .....                                                          | 31 |
|    | b.   | Marsden's No. DCCCXXVIII, p. 597. mint Ahmedábád, dates 997, 998, 1000, 1001                                                             |    |
|    |      | whole rupees.....                                                                                                                        | 11 |
|    |      | half rupees .....                                                                                                                        | 4  |
|    |      | —                                                                                                                                        | 15 |
|    | c.   | Marsden's No. DCCCXXIX, p. 599. mint "Camp" date 1000 .....                                                                              | 9  |
|    | d.   | Marsden's No. DCCCXVI, p. 593. mint indistinct, date 984 .....                                                                           | 9  |
|    | e.   | Marsden's No. DCCCXIX, p. 596. mint indistinct, date 990 .....                                                                           | 3  |
|    | f.   | Circular area. <i>Obv.</i> legend, mint and year of reign. <i>Rev.</i> legend: mint Ahmedábád, and Láhor, year of reign 30, 34, 40 ..... | 4  |

|    |     | No. of specimens.                                                                                                                                                |    |
|----|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 4. | V,  | <i>Sháh Jehán</i> , A. H. 1037—1068 = A. D. 1627—1658, Marsden's No. DCCCLXIV, p. 637. mint indistinct, years of reign 5 and 20 .....                            | 3  |
| 5. | VI, | <i>Aurangzib</i> , A. H. 1068—1118 = A. D. 1658—1707. Marsden's No. DCCCXCV, p. 654. mint Jehánábád and Barhánpúr, years of reign 3, 5, 10, 16, 28, 43, 49 ..... | 11 |
|    |     | Total...                                                                                                                                                         | 85 |

VI. Report on 33 coins forwarded by the Collector of Hooghly with his No. 1133, dated 15th September 1886.

1. The coins were found in the wall of a house that was being pulled down at Dumurdah, Tháná Palagore.

2. They are all common silver coins of the Emperor Sháh Alam, who reigned from 1174 to 1220 A. H. = 1761—1806 A. D.

|                                                                       |                      | No. of specimens. |
|-----------------------------------------------------------------------|----------------------|-------------------|
| Marsden's No. DCCCCLXVIII, p. 690. mint Murshidábád, year of reign 19 |                      |                   |
|                                                                       | whole rupees,.....   | 29                |
|                                                                       | quarter rupees ..... | 4                 |
|                                                                       |                      | Total... 33       |

The following papers were read:—

1. *The Landshells of Perak.*—By O. F. VON MÖLLENDORF, PH. D. Consul for the German Empire, Manila.—Communicated by the NATURAL HISTORY SECRETARY.

2. *The Butterflies of Cachar.*—By PROFESSORS J. WOOD-MASON and L. DE NICE'VILLE, F. E. S.

3. *The Butterflies of Tavoy.*—By H. J. ELWES and L. DE NICE'VILLE F. E. S.—Communicated by the NATURAL HISTORY SECRETARY.

4. *On Solar Thermometer Observations at Allahabad.*—By S. A. HILL, B. Sc., A. R. S. M., Meteorological Reporter for the N. W. Provinces and Oudh.

These papers will be printed in full in the Journal, Part II.

## THE VEDDAHS.

At a SPECIAL MEETING of the Asiatic Society of Bengal, held on Tuesday, the 23rd November, 1886, Mr. C. Stevens, of Brisbane, Australia, read a paper on "The result of enquiries and observations among the wild Veddahs of Ceylon as to their religious belief, domestic and social life, and intellectual capacity, undertaken with a view to obtaining a vocabulary and such information as would tend to solve the question as to the origin of the race." The lecture was illustrated by specimens of Veddah weapons and a number of skulls and skeletons.

Mr. Atkinson, President of the Society, introduced the visitor, and, in doing so, said:—The object of our meeting this evening is to hear Mr. Stevens give an account of the Veddahs of Ceylon, a tribe of people of much interest to those engaged in anthropological studies. The Veddahs are roughly divided into two classes, the coast or village Veddahs, who are comparatively civilised, and the rock or wild Veddahs, who still live in primitive barbarism, without clothing, agriculture, or fixed dwellings, and with religious beliefs only extending to the existence of more or less beneficent spirits representing the manes of their ancestors. The wild Veddahs are a dwarfish stunted race, of blackish complexion, and with straight black hair. Professor Flower, in a recent lecture before the Royal College of Surgeons in England, remarks that the crania of the Veddahs are very small, one of them, that of a female, being the smallest in the whole collection. They are all dolichocephalic, the prognathism is not very marked, and the nasal index is medium, characters which would connect them with the type of the lower grades of the inhabitants of Bengal. He further states that the condition of their bones and other physical characters give the impression of their being a race degenerated and enfeebled by generations of privation and other circumstances adverse to full development. With these remarks I beg to introduce to you Mr. Stevens, merely adding that those interested in the study of the history of the human race will find the *Ethnological Library Series* issued by Hennyer of Paris, and especially the "*Introduction à l'étude des races Humaines*," by M. A. de Quatrefages, of great assistance to themselves.

Mr. Stevens said, the information derived from actual residence among Veddahs of Ceylon in forest and cave, was so much at variance with the statements of prior writers upon the subject that he was unable until careful revision, comparison, and verification to give more than a sketch or outline of the daily life of the Veddah, leaving the questions of more purely scientific interest to form the subject of a paper which he intended to prepare. This variance was doubtless caused, partly by

alteration in the habits of those Veddahs who had of later years, by contact with the Singhalese and Tamils, and under pressure of scarcity of game, exchanged in some degree their original nomad life as hunters for the rude agriculture of the *chena* with consequent adoption more or less of Singhalese manners and customs: and partly by the term Veddah in earlier writings being applied to others than the race now known by that name. The time had undoubtedly passed away when the fullest information as to the origin of the Veddah could have been obtained. Rapidly dying out, the nomad will, in the course of the next fifty years, have ceased to exist as such. No systematic or organised endeavour appears to have been made to clear up the mystery which surrounds this sole surviving remnant of the aboriginal of Ceylon, and unless prompt action in that direction is taken, all opportunity will shortly have passed away. At one time so numerous as to occupy a considerable portion of the eastern side of the island, the nomad, or, as he is now not very correctly termed, the "Rock" Veddah, in distinction from his village or agricultural, hut-dwelling brethren, is now only to be found in a very small and remote strip of the early Veddarata. Much stress has been laid upon the alleged difficulty and danger of obtaining access to the Veddah, and so far as this relates to the Singhalese or Tamil visitor, it is undoubtedly correct, but not to the unaccompanied European. The dislike and contempt of the Veddah to the Singhalese is most marked, and it is on account of this feeling that the most incorrect conceptions of the race have been placed on record from time to time by European observers who have allowed the customary retinue of Singhalese or Tamil servants to be present at the interview. Brought before a European, under these circumstances, the Veddah assumes and maintains such an impenetrable mask of stolidity and impassiveness as to give good grounds for the low estimate hitherto formed of his intellectual capacity, but when seen in their familiar haunts and daily avocations by any solitary European who will go among them as one of themselves, the Veddahs appear in their natural manner. Most keenly sensitive to ridicule, and with but little hesitation in using the formidable bow and arrow in retaliation for it, care must be observed to repress all sign of merriment at their actions. It is presumably from this very strongly marked peculiarity that the statement has been made that the Veddah never laughs. Laugh he can and does when pleased, but his mirth partakes of the subdued watchful noiseless manner characterizing the hunter ever on the alert for prey or danger. In striking contrast to the indolence of many Oriental races is the incessant motion of the Veddah. Their slight wiry little frames appear almost incapable of fatigue in locomotion, while their muscular strength is far greater than

would be supposed from their meagre appearance. The shortest Veddahs measured were 4 feet 3 inches male, 4 feet 1 inch female; the tallest 5 feet 6 inches male, 5 feet 2 inches female. A slight span cloth only is worn by the men, a larger one by the females of the village Veddahs, who are able to obtain the material, but the Rock Veddah, more isolated, either dispenses in the case of the men out hunting with even this slight garment, or, twisting a cord of bark round his waist, he resorts to the primitive leaf tucked under and held in position by the cord, the females adopting either a somewhat similar arrangement or a small apron of "riti" bark. This, however, is very rarely seen now, though invariably used during their ceremonial invocations to their departed spirits, or, as they have been incorrectly termed, "demons."

In order to arrive, as far as possible, at some definite conclusion as to the religious belief, and the traditions of the Veddahs, it was found imperative to enlist the services of a thoroughly competent interpreter, and for this purpose advantage was taken of the intimacy with the Veddahs of Mr. Somanadar, who undertook a trip into the Veddairata for this purpose. With so efficient an assistant, and after patient investigation, one or two points were definitely arrived at, and afterwards verified in other parts of the country.

Whatever the Veddahs may have held in former times certainly now no trace of demonolatry, properly speaking, exists among them. Where the idea has not been derived from a close acquaintance with Singhalese observances, Grahaism appears to be but indistinctly held, Capuism, pure and simple, appearing to form the whole of their religious belief; and it is very remarkable that though the indigenous demons of the ancient Yakkhas are all of a highly malevolent and blood-thirsty disposition, the scanty mythology of the present Veddahs knows nothing of them, and though both Singhalese and Tamil for many centuries have firmly adhered to a most gross and revolting system of demon worship, no trace of it appears in the Veddahs removed from their immediate neighbourhood.

The immortality of the soul is invariably admitted by the Veddahs, but there appears to be no conception of future reward or punishment. The spirit released from the body revisits the scene of its earthly life for some two months, invisible and intangible, with neither the power nor the inclination to harm the survivors, but so great is the shrinking from the unseen presence that the spot where the death occurs is frequently deserted for some months. Invocatory chants to the departed are made on many occasions, but once a year a ceremonial propitiatory invocation attended with offerings of meat is made to the collective gods or deified spirits of their an-

cestors, and it is considered that the due observance of this ceremony ensures absolute immunity from all accidents, evil, or danger for the year following, with the remarkable exception of death or injury from the breaking of the vine ropes used in descending the precipitous faces of the rocks in quest of the honey and wax of the great "bommerah" bee. The village Veddahs have, however, acquired some of the chants and charms of their Singhalese neighbours, using the imported words in their entirety, but the "Hounihym" charm to inflict injury or harm upon others, so widespread among the Singhalese, does not appear to have been accepted by them. Various experiments had been made to ascertain this point but were invariably unsuccessful, the Veddah utterly disregarding the mystical preparations and incantations.

The belief in the existence of a spirit inhabiting the mortal body seems to be general. After death the disembodied spirit is supposed to wander about its accustomed haunts for a period of two moons, and after that to return to the grave, or place where the body was laid after death. The spirit has neither the power nor the inclination to injure anyone, although its presence amongst the living is considered undesirable. When a death occurs, the Veddahs on some occasions leave the encampment, or habitation if they have any, to avoid the spirits of the dead; and in other instances they appear indifferent and remain where they are, only taking the precaution to close the entrances of their caves or habitations, not apparently from fear of injury, but merely, as it were, regarding the spirit as something uncanny. Inquiry being made if the removal of the body or skeleton from a grave was not calculated to annoy the spirit, the query seemed to be a novel one to their minds; they had no fear of its attempting to revenge itself upon them, and they could not give an opinion as to the chances of the spirit remaining in the grave or accompanying the body on removal. The Veddahs exhibited no disinclination whatever to excavate the side of the grave, but kept a careful look-out for the instant a portion of the corpse or the skeleton was exposed, to start away from the spot and retire a few yards, waiting there a short time and then resuming their place and completing the exhumation. This short retirement from the spot was presumably to allow the spirit's free exit from the grave, though possibly it was to afford an opportunity of seeing if the spirit attacked those who remained on the spot, and, seeing no harm accrue, they resumed their work. Equal indifference was exhibited in assisting to carry away the bones, or, even in one case, a comparatively recently buried corpse, wrapped up in the burial bark, and conveying it some distance for preparation; and in no case was any repugnance shown to touching a dead body or skeleton. It has

often been asked in what light the Veddah probably views the desecration of the graveyard, and as far as was visible to those engaged in the task, total indifference prevailed. It must not be forgotten that until comparatively recently the bodies of the dead were not buried at all, but exposed amongst the trees, and consequently, after being forced to inter their dead, they may quite possibly view the resurrectionist in rather a favourable light than otherwise, the interment of the dead being almost as recent an idea as the disinterment. Current with their belief in the existence of the spirit after the death of the body, and as far as can be judged in some way mixed up with it, is the existence of demons. The mere fact of the statement made that there are no less than three millions of these demons suffices to show that to a considerable extent this idea has been an importation from neighbouring races, as is proved by the fact that the Veddah, like most very primitive races, is unable to count more than ten or a dozen, and this was conclusively proved on the present occasion. The term used for the three millions was Singhalese, and, on being questioned as to the meaning of three millions, they had no notion beyond "a very great many." A solemn ceremony is annually held to propitiate these demons, and the rites may be briefly described in the following manner: two or three pounds' weight of the flesh of some animal killed in the chase, with some wild honey, is placed in the centre of an open space, and in a circle round it the men of the encampment perform a measured solemn dance, entirely devoid of the grotesque antics which characterise their dancing on other occasions. Time is kept by a woman singing, the only occasion when a woman takes any part whatever in a dance. This offering is then taken to the tree in which the Niti or prince of the demons resides, and placed in the hollow if there is one; otherwise it is attached to a fork of the branches and covered with clay. During this performance there is none of the usual display of weapons which on other occasions are never absent. The annual performance of this rite preserves them from accidents in their hunting expeditions, and, should any such occur, the circumstance is attributed to an imperfect performance of the ceremony. Each of the eight "Virgas," or clans, amongst the Veddah has its own particular day for the observance of this annual rite; and, should an encampment include members of more than one clan, the ceremony has to be performed on more than one occasion, on the customary days of the different clans. No trace could be found of anything approaching to Nága worship. A Veddah declines to kill a cobra, saying it is useless doing so, as five or six others will appear to take its place. Other snakes, however, they evince no hesitation in destroying whenever they chance

to cross their path. At the same time, they expressed no abhorrence of the act when cobras were killed in their presence.

In regard to marriage ceremonies, by special request the usual rites were gone through by way of example. For nine or ten days the intended bridegroom brings presents of meat and honey to the parents of the girl of his choice. If these presents are accepted, it is considered that the match is considered in a favourable light. Some moonlight night all the Veddahs in the neighbourhood, in any way connected with the contracting parties, seat themselves in a circle in solemn and continued silence, as if pondering over the matter. After some half-an-hour of this taciturnity, the mothers of the young people—or, in default, their nearest female relatives—retire for a time into the jungle as if to discuss the match. Should it appear to be satisfactory, the two women return to the still silent circle, when the nearest male relatives retire to the jungle. On their return, in a similar way to that adopted by the women, the bridegroom quietly moves away to his dwelling place, and shortly afterwards every one of the party except the bride go away, leaving her alone on the scene of this singular performance. When all are gone and a sufficient time has elapsed to enable her to do so unobserved, she quietly follows her husband—and is thereby duly constituted his wife. It would be easy to draw a romantic and symbolical inference from these proceedings, though whether any such ideas pass through the minds of those who take part in them is extremely problematical. It is understood that a young man is willing to take under his protection a woman of the tribe. After solemn conclave her parents and relatives come to the conclusion to entrust her to his care, and they quietly and tearfully leave her alone in the forest glade. The man meanwhile has slipped away and awaits her decision in his primitive dwelling. Left without compulsion or persuasion to follow her own inclinations, and finding herself deserted by her parents and all that are near and dear to her, she modestly waits until everyone has left the scene, and quietly and unobtrusively proceeds to take her place by the side of her husband. Indeed, a pretty picture might be drawn of the deserted Veddah maiden—alone and unprotected in the moonlit solitude—in the garb of our first parents, “clad all in modesty,” stealing away through the moonlight to the rocky cave of the primeval forest. It would be interesting to learn the course of events, should she elect at the last moment to return to her parents instead of joining her suitor. Possibly such an event is altogether unknown.

An imaginary burial ceremony was also gone through, a plantain stalk representing the dead body, with pieces of leaf stalk folded across the breast for the arms. On the breast was placed a small portion of



*kurakhan* or other food, and the feet were drawn out straight. The corpse was enshrouded in a sheet of bark brought from the jungle. Of late years when a piece of matting is available, it is wrapped round the body inside the bark, and the whole is tightly bound with jungle creepers slung on a pole and carried off to the grave, that has meanwhile been made by other persons. Since the British ordinances have come into force in the island, burials underground have been made compulsory, but formerly the corpse was laid on the floor of the cave in which the living person had resided, a log of wood laid on each side, a few branches above, and a stone at the head. This latter idea of a headstone, as well as placing the body with the feet to the rising sun, is, in all probability, a consequence of the advent of Christianity, and a natural accompaniment to the enforcement of burials by the authorities. Occasionally a palisading of jungle sticks is placed round the grave, a site for which is selected some 400 or 500 yards away from a track on the edge of those open spaces known as "talawas." The burial places are avoided as much as possible by the Veddahs in the course of their journeys about the country.

Conclusions drawn from several periods of five or six days' continuance in the encampments and caves of the Veddahs point to their place in the scale of humanity being very far higher than has been stated by previous writers on the subject. His domestic qualities are excellent; he is a good husband and father, and he generally gets the credit of being free from the vices of untruthfulness and petty thieving, so common amongst his neighbours. In corroboration of this opinion it is adduced as a proof that there are no regulations concerning these crimes current amongst them. There would appear to be a sort of ruling dynasty in each clan, handed down from father to son, and, in failure of heirs, the oldest man would in all probability be chosen as headman. In the decision of all grave questions, such as murder, the headman is assisted by the elders of the tribe. One remarkable custom appears to be still prevalent, although amongst the much-reduced numbers of the Veddah it seldom occurs. Should a body be found with marks which plainly show that death has been caused by the Veddah arrow, it is immediately concluded that improper relations had been attempted with some one's wife, and had met with well-merited punishment at the hands of the husband; and in such cases the body is interred without further inquiry or investigation. The appearance of the living, and examination of the remains of the dead, would argue an intense vitality, at any rate amongst the men, who when once they have passed through infancy and boyhood live to extreme old age, unless cut short by accident. The same cannot, however, at present be positively stated as regards

the females : indeed, appearances would tend to point to the contrary, a great number of young women apparently dying during their first confinement. This, however, can hardly be asserted as a fact, it being generally supposed that in all primitive tribes the act of giving birth to children is one of comparatively little danger.

In regard to the intelligence and mental capability of the Veddah, there can be but little doubt that he has been most unwarrantably underrated, probably in consequence of a lamentable want of opportunity for observation. He has not only been termed degraded, but it has been asserted that he verges upon absolute "idiocy." These are indeed no measured expressions, and such as are by no means justified by facts. Degraded he cannot be in the same way as the Radiyas or Dodda Veddahs, who from time immemorial have been so down-trodden by the arbitrary supremacy of those who are considered his superiors in the social scale that he dare hardly call his soul his own, or his body either ; for the Rock Veddah has never been subjected either morally or physically to the demoralizing influences of either caste or conqueror. He still remains, as he always has been in the past, free and untrammelled, adhering to his own customs and inclinations, neither down-trodden by others nor in any sense degraded from a higher to a lower state of humanity. The impressions regarding "want of mental capacity" and his "verging on idiocy" would appear to have principally arisen from the mask of stolidity and impenetrability which is at once assumed when the Veddah is confronted with strangers. Those of the tribe who have been publicly exhibited in Kandy and elsewhere have found themselves exposed to the examination of curious and obtrusive crowds, and in some instances to jeers and ridicule, which they would naturally resent. Indignation—and no little fear—as might well be expected, tend to render them apparently stupid and idiotic. But when seen under natural conditions, in their own habitations, surrounded by their families and their own people, they exhibit themselves in a totally different light. Except for a certain dignified and subdued manner, they show but little difference in behaviour from the Tamils and Singhalese, laughing, singing and talking freely in an undertone amongst themselves. The children of the family quietly play about, using balls, little figures, and other articles as playthings. One thing, no doubt, prevents his indulging in laughter amongst strangers—and that is his own extreme sensibility to ridicule, a susceptibility which he naturally supposes attaches to others as well as himself. This impatience of anything approaching to ridicule was strikingly exemplified on two occasions during this trip. Watching the grotesque appearance and motions during one of the dances, the observer could not help

laughing, when quick as thought an arrow was shot from a bow passing within an inch of his head, and the dancers rushed away from the spot in high dudgeon. The other occasion was when a party of the Veddahs were exhibiting before several European and native spectators, some of the latter began to laugh when the Veddahs handled their bows with angry expressions, and the risibility of the spectators had to be promptly repressed.

As an example of their capability of readily grasping a new idea, it was curious to see how rapidly they made out particulars of a photograph of a cocoanut estate which was shown to some of them at Nilgalla; they quickly recognized and pointed out the leaves of cocoanut palms, the bungalow and the figure of a European—no mean proof of their intelligence. In the same way, an opportunity was afforded of disproving the assertion that the Veddah is incapable of distinguishing colours. Selecting an article of a certain colour, they readily brought a similarly tinted article from another encampment. A ludicrous incident, however, occurred when shewn their reflections in a mirror: the intense astonishment and fear expressed in the man's countenance at beholding what he evidently supposed was some spirit looking at him, and the haste with which he seized his miniature axe and peered behind the mirror, as a cat or monkey would do under similar circumstances, was amusing in the extreme.

Their well-known skill in the use of the bow and arrow seems to be gradually becoming a thing of the past. Whilst some of the elder men evidenced such power and skill as to effectually prove the deadly nature of the weapon, the younger generation seems inclined to allow it to fall into disuse. The necessity for it is, no doubt, gradually declining as more attention is paid to agriculture. On one occasion an arrow was shot quite through a wild sow, and stuck in a bank behind her, and the drawing of the bows themselves, severely taxed the strength of the European.

The use of the ordinary earthenware chatty of different varieties appears to be unknown amongst some of the more isolated parties; gourds and leaf baskets being generally used instead. Fire was produced from the friction of a stick and piece of wood, but iron and pieces of quartz were seen, evidently taking the place of the flint and steel used for that purpose.

In one encampment of the Rock Veddahs, ten men were found in absolute nudity, whilst the women of the party apparently wore a small portion of the skin of some animal, but presently produced some remnants of cloth which they donned during the stay of the visitors. In every other instance, the Veddahs were to some extent clothed, and the leaf girdles were constructed merely to show how it was done.

The Veddah subsists on honey, yams, berries and the rudely roasted flesh of the game falling to his arrows, exception being taken to bear, jackal, and leopard. It has been stated that fowl and oxen were also tabooed, but if that were so in earlier times, decreasing game or altered ideas had removed the restriction, and the flesh of both is now eaten without hesitation.

Inquiry was made into the current idea that the Veddahs opened the bodies of the slain amongst their enemies of other races, and extracting the liver, preserved it carefully till such time as they were called upon to exert themselves against those who would hurt them, be they man or beast, when they would devour a small portion by way of raising their spirits and stimulating their bravery. They admitted that such was the case in the time of their forefathers, and until comparatively recent times, one specimen being shown as a sample of what had been carefully preserved for a great number of years.

The Chairman, at the close of the lecture, remarked that they were all very much obliged to Mr. Stevens for all the information he had given them in regard to this interesting tribe, and he thought it was the duty of one or other of the branches of the Society to work up further enquiries in relation to them. Many were aware of the fact of the existence of several kindred hill tribes in Kumaon, Nepal, and Assam, who lived exactly like the Veddahs, and who, like them, entertained the belief that they were far superior to the natives of the plains. Several traditions were common to all, and a good deal of what was said seemed to show a connexion between these Veddahs and some of the wild tribes in Chutia Nagpur and the Vindhya Hills.

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### LIBRARY.

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

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### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

**Amsterdam.** Koninklijk Zoologisch Genootschap. "Natura Artis Magistra,"—*Bijdragen tot de Dierkunde*, Vol. XIII, No. 4.

———. *Revue Coloniale Internationale*,—Vol. II, Nos. 2—6 ; Vol. III, Nos. 1—3.

- Baltimore. Johns Hopkins University,—*American Chemical Journal*, Vol. VIII, No. 4, August, 1886.
- . ————. *American Journal of Mathematics*,—Vol. VIII, Nos. 3 and 4, July and August, 1886.
- . ————. *The American Journal of Philology*, Vol. VII, No. 2, July, 1886.
- . ————. *Circulars*, Vol. V, No. 51, July, 1886.
- Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—*Notulen*, Vol. XXIV. No. 2.
- . ————. *Tijdschrift*, Vol. XXXI, No. 3.
- Berlin. Berliner Entomologische Zeitschrift,—Vol. XXX, No. 1.
- . Der Königlich Preussischen Akademie der Wissenschaften zu Berlin,—*Sitzungsberichte*, Nos. I—XXII, 1886.
- Bombay. Bombay Natural History Society,—*Journal*, Vol. I, No. 1, January, 1886.
- . *The Indian Antiquary*,—Vol. XV, Parts 186—188, August to October, 1886.
- Boston. Boston Society of Natural History,—*Memoirs*, Vol. III, Nos. 8—11.
- . ————. *Proceedings*, Vol. XXII, Parts 2—4; Vol. XXIII, Part 1.
- Bruxelles. Musée Royal D'Histoire Naturelle de Belgique,—*Bulletin*, Vol. IV, No. 2.
- Calcutta. Geological Survey of India,—*Palæontologia Indica*, *Memoirs* Vol. I (ser. XIV), Nos. 3; Vol. IV (ser. X), No. 1.
- . ————. *Records*, Vol. XIX, Part 3.
- . *The Indian Engineer*,—Vol. I, Nos. 10—13; Vol. II, Nos. 1—3.
- . *Original Meteorological Observations*,—April and May, 1886.
- Copenhagen. K. Nordiske Oldskrift-selskab,—*Aarboger*, Vol. I (2nd series), No. 2.
- . ————. *Mémoires*, 1886.
- Chicago. *The American Antiquarian and Oriental Journal*,—Vol. VIII, Nos. 4 and 5, July and September, 1886.
- Edinburgh. Royal Society of Edinburgh,—*Proceedings*, Vol. XII, No. 118; Vol. XII, Nos. 119 and 120.
- . ————. *Transactions*, Vol. XXXII, Parts 2 and 3.
- . *The Scottish Geographical Magazine*,—Vol. II, Nos. 7—9, July to September, 1886.
- Florence. La Società Africana D'Italia,—*Bollettino*, Vol. II, Nos. 4—6.
- Havre. Societe de Géographie Commerciale du Havre,—*Bulletin*, Nos. 3 and 4, May to August, 1886.

- Ithaca.** Cornell University,—Library Bulletin, Vol. II, No. 2.
- Königsberg.** Der Physikalisch-Ökonomischen Gesellschaft zu Königsberg,—Schriften, 1885.
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**PROCEEDINGS**  
**OF THE**  
**ASIATIC SOCIETY OF BENGAL,**  
**FOR DECEMBER, 1886.**

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 1st December 1886, at 9 P. M.

E. T. ATKINSON, Esq., C. S., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Twenty-eight presentations were announced, as detailed in the appended Library List.

The following gentleman, duly proposed by the Council at the last meeting, was ballotted for and elected an Associate Member:

Babu Sarat Chandra Dás, C. I. E.

The COUNCIL reported that Lt.-Col. Godwin-Austen had applied to have his name removed from the list of members, and recommended that in consideration of the part he had taken in the investigation of the fauna and flora of India for many years, the Journal and Proceedings of the Society be sent to him free of charge for the rest of his life.

Carried unanimously.

The following gentleman has intimated his wish to withdraw from the Society :

Hon'ble H. J. Reynolds.

The SECRETARY announced the death of the Hon'ble James Gibbs.

The PHILOLOGICAL SECRETARY exhibited 2 gold and 3 silver coins presented by the Bombay Branch of the Royal Asiatic Society, being part of finds of Treasure Trove in the Kandeish and Belgaum districts, and stated that the gold coins are known as the Hun coins of Bijapur, or Visiapur, a celebrated city of the Dekhan; they exhibit distinct emblems, the meaning of which has not been discovered. They are

of considerable antiquity, and are supposed to have been struck by one of the Hindu princes who reigned at Bijapur before the 14th century when the Muhammadans established their authority in that city. The emblem appears to be a rude imitation of a Hindoo temple surrounded by stars meant to imply that the worship of the gods is the path to glory and long life.

These coins are referred to by Marsden and Tavernier who are unable to ascribe to them either date or reign. They are also described by Dr. G. Bidie in the Asiatic Society's Journal, Vol. LII, Part I, p. 41.

Gold very inferior. Weight .38 of a Tolah, Whole Hun... 1

do. .156 do. do. , Half Hun ... 1

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2

The PHILOLOGICAL SECRETARY read the following report on a find of 405 old silver coins in the Maldah district.

I. Report on 405 silver coins forwarded by the Collector of Maldah with his letter, No. 540, dated 5th September, 1886.

1. The coins were found buried in a brass *lotá* at Beltallah ghat, on the right, or west, bank of the river Mahánanda, in village Kutabpur, close to the Civil Station at English Bazar.

2. They are all round silver rupees of the following Moghul Emperors:

|                                                                                                                                                                                                                        | No. of specimens. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1. XIII. <i>Muhammad Sháh</i> , A. H. 1131—1161 = A. D. 1719—1748; Marsden's No. DCCCCXVIII, p. 666: mint Murshidábád, years of reign 3-5-19-20-24-27-28-29 .....                                                      | 19                |
| 2. XIV. <i>Ahmed Sháh Bahádur</i> , A. H. 1161—1167 = A. D. 1748—1754, Circular Area. <i>Obv.</i> name of Emperor and date. <i>Rev.</i> legend, mint and year of reign: mint Murshidábád, years of reign 2-3-5-6 ..... | 23                |
| 3. XV. <i>Alamgír Zání</i> , A. H. 1167—1175 = A. D. 1754—1761; Marsden's No. DCCCCXXIV, p. 675: mints Murshidábád and Golkonda, years of reign 1-2-3-4-5 .....                                                        | 77                |
| 4. XVI. <i>Alam Sháh</i> , A. H. 1175—1220 = A. D. 1761—1806. Marsden's No. DCCCLXVIII, p. 684: mint Murshidábád, years of reign 2-3-4-5-7-8-9-10-11-12-19-29 .....                                                    | 286               |
| Total ...                                                                                                                                                                                                              | 405               |

The following papers were read—

1. *On probable changes in the Geography of the Panjáb and its rivers: an Historico-geographical study.*—By R. D. S. OLDHAM, A. R. S. M. (Postponed from last meeting.)

(Abstract.)

This paper is divided into three parts and an introduction; after pointing out that the subject is one on which geologists not only have a claim to be heard, but must be the last court of appeal as to whether the hypotheses proposed by professed scholars and historians, to whom the subject is generally left, are admissible or not, the author goes on to treat of *The Ancient course of the Indus through Sind*. He notices the generally accepted idea that the Narrá is an ancient course of the Indus and the physical difficulties that follow from that idea; not only is it impossible to account for the change of the channel of the Indus from a lower to a higher level to enable it to flow through the gorge at Rohri, but it would be impossible for the Indus flowing into the Narrá to send a branch past Hermeteieia or Bráhmaábád, unless water was gifted with the power of flowing up hill in the time of Alexander the Great.

He notices the peculiarity of the Indus which flows through a rocky gorge at Rohri, while on either side the ground slopes down to a lower level; it is difficult to account for this except by supposing that the Indus alluvium was formerly higher on the east, so as to allow the Indus to break away to the westward and find the gap it now flows in, and that the level of the alluvium to the east was subsequently lowered by the action of an independent stream.

He notices the existence of traditions supporting the generally accepted idea, but points out that these often arise as an attempted explanation of existing facts and cannot be accepted as more than an indication of a line of research.

After noticing various traditions and authors whose evidence is inconclusive or conflicting, he passes on to consider the evidence that may be gleaned from the manuscripts translated in the first volume of Sir H. Elliot's *History of India*, the principle of which is the Chach-námá, in which the march of Chach, and subsequently of Muḥammad Kasim, northwards from Aror is given, and the first river crossed is the "Biyas;" moreover Muḥammad Kasim had crossed the Indus some time before, and there is no mention of his crossing it again, so that it is clear that in the 8th century the Indus already flowed west of Aror. In the account of the campaign of Muḥammad Kasim it is stated that some marches after he crossed the Indus he came to a river called the Wadháwah (or Dadháwal) which, as is proved by a subsequent reference,

was navigable. Now it is a noteworthy fact that this name is unlike any known to be applied to the Indus, but in the north of Sind there is marked on the map a dry bed of the river Wundun which can be traced to within twenty-three miles of the Narrá (the intervening course being obliterated by the overflow waters of the Indus) and is continuous with a dry river course which can be traced through Bhawalpur as far as Baghla, in Latitude  $28^{\circ} 16'$  Longitude  $70^{\circ} 33'$ .

The next part is devoted to the *Lost river of the Indian Desert*. The course of this is picked up again at Deráwar, 56 miles from where it was lost near Baghla, and thence can be traced continuously through Bhawalpur, Bikanir, Sirsa, to Tohána in Hissar. This channel is known as the Hakrá, Sankrá or Sotar, and by the universal tradition of the desert was formerly a flowing river.

To account for the drying up of this river we must either invoke a diminution of rainfall in the hills or a change in the course of one of the great rivers, either the Jumná or the Sutlej. The first of these is inadmissible on physical, the second is inadmissible on historical grounds, so that there remains but the third to be examined.

An objection to this supposition has been urged, that the channel of the Hakrá is too shallow for it to have ever carried a large river, and that its soil is very different to the silt of the Sutlej; this is, however, due to the action of the Ghuggur, which has deposited its alluvium along the course of a river-bed it could never have formed itself, thus accounting for the shallowness and the difference between the soil of the Hakrá and of the Sutlej channel.

The historical evidence is very conflicting, for though the Vedas and the geography of Ptolemy both appear to be in agreement with modern geography, the historians of the early Musalman invasions of India and the native annals of Jessalmir use the term "Biyah" for the united Sutlej and Beas, and "Panjnad" for the Indus, a nomenclature which points to the conclusion that the Sutlej can in their time only recently have become a tributary of the Indus.

The historical evidence is on no point conclusive, but there are between the Sotar and the Sutlej a number of dry river channels, all tributaries of the Sotar, most of which can be traced to within a few miles of the present or former course of the Sutlej; and some of which at least are locally regarded as deserted channels of the Sutlej. This makes it certain that it was from the Sutlej and not from the Jumna that this lost river derived its water, and the change of course must have been at an extremely recent period, geologically speaking, even if not so recent as appears to be indicated by history.

The third part of the paper is a brief consideration of the *Saraswati*

of the *Vedas*. The author points out the improbability, to say the least of it, that the existing Saraswati could ever have been regarded by any rational being as a fit associate for the rivers of the Punjáb and the Indus, still less to be exalted above them all as the "chief and purest of rivers." There are weighty objections of a physical nature against supposing that the change can be due to diminished rainfall in the Himalayas. Mr. E. Thomas has suggested that the Saraswati of the *Vedas* was in reality the Helmund, and works his theory out with great ability and ingenuity, but it is almost as difficult to suppose that the ancient Aryans could have confused the insignificant Saraswati with the Helmund merely because it flowed into the tank of Kurukshetra—allowing that to have existed in the Vedic period—as that they could have originally applied the grandiloquent language used to the existing Saraswati.

The only other possible hypothesis involves a great change of hydrography, and as we cannot suppose any change of number or position of the great rivers within the hills, the Saraswati can only have been the old course of some other river, either the Sutlej or the Jumná. The former of these is fully accounted for and only the Jumná remains.

Whether the Saraswati was the Jumná or no, it is certain that within the recent period of geology the Jumná must have flowed towards the Punjáb, and if we may suppose that it did so when the Aryans invaded India, we have accounted for the Saraswati, and we find that the tradition of the Saraswati joining the Ganges at Allahabad is almost a literal representation of what has taken place. The name Jumná favours this view, for when the Brahmaputra in the commencement of the present century broke away from its old course to join the Ganges the new channel thus formed was christened the Jumná, a name it bears to this day, while her old bed now deserted by the main stream, and only receiving any accession from it when the river is in flood, is still known as the Brahmaputra.

The only real objection that can be raised to this hypothesis is, that the Saraswati and Jumná are both mentioned in the *Vedas*, and even in the same hymn. How far this may be a valid objection the author cannot say, but it may be explained by the fact that the change of course would not be sudden and abrupt, but a gradual transfer of the bulk of the water from one channel to another, so that the Jumná might for a long period have divided into two streams where it left the hills (as is the case with the Diyung in Assam at the present day) one channel, the Saraswati, flowing to the Punjáb, the other the Jumná, to the Ganges; this hypothesis is not susceptible of proof, nor of disproof, for the geographical references in the *Vedas* are invariably incidental, and seldom more than verbal, but it is physically possible, and does not

compel one to form so low an opinion of the intelligence of the ancient Aryans as any other hypothesis would involve.

In conclusion the author deprecates any claim to originality; there is nothing in his paper that has not been suggested before at one time or another, and all he claims to have done is to collect and develop these suggestions in the hope that they will prove acceptable to those who may be interested in the study of the same question from a purely historical point of view.

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

2. Notes on Indian Rhynchota, Sub-family Plataspinga.—By E. T. ATKINSON, Esq., PRESIDENT.

(Abstract.)

The author remarked that this was a continuation of his 'Notes on the Indian Rhynchota.' Those already published in the Society's Journal completed the Homopterous section of the Order, and the family *Coccidæ* in part. The present series will embrace the Heteropterous section and begins with the *Pentatomidæ*. The first subfamily comprises the *Plataspinga*, of which the following genera are noticed:—*Tarichea*, 1 species; *Calacta*, 1; *Oncylaspis*, 1; *Poseidon*, 1; *Brachyplatys*, 9; *Optosoma*, 11, one new species. The second subfamily embraces the *Cydnina*, of which we have the following genera represented in India:—*Cephalocteus*, 1; *Stibaropus*, 6; *Lactistes*, 3; *Scoparipes*, 1; *Adrisa*, 2; *Æthus*, 3; *Cydnus*, 1; *Gampsotes*, 1; *Macroscytus*, 3; *Geotomus*, 3; *Chilocoris*, 3; *Peltoxyis*, 1; and *Tritomegas*, 1. The genera *Brachyplatys* and *Optosoma* require revision, which can only be done well by consulting the types, and is beyond the resources of any one working in India. For the *Cydnina* we have the recent careful monograph of M. Victor Signoret with numerous figures which leaves little to be desired. Mr. Atkinson also pointed out the need there is for further exertions on the part of those who care for Entomology to increase our only national collection in the Indian Museum, which at present does not contain one half even of the species recorded as occurring in India.

The following is a brief description of the New Species of *Optosoma* mentioned above:—

COPTOSOMA ASSAMENSIS, n. sp.

Bronzed-black, shining, very finely and closely punctured: lateral lobes of the head yellow, with a very fine blackish external limbus: eyes large, prominulous, deep castaneous: lateral margins of pronotum (enclosing anteriorly a black longitudinal streak) broadly forwards,

narrowly hindward, also four transverse oblong spots (2 and 2) in anterior part, the pair nearest anterior margin smaller, and a broadly oval spot at each posterior basal angle, yellow: the third basal part of scutellum black, arcuate hindward, with two yellow oblong transverse elongate spots before the basal impression: sides very broad and apical, two-thirds rather sordid yellow, thickly and coarsely punctured fuscous, with a large rounded black spot in the middle of each posterior angle: abdomen beneath shining black; feet sordid flavescent. Long  $2\frac{1}{2}$ -3; broad  $2\frac{1}{2}$  mill. From N. E. Assam.

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

The subject of Conversation by the Natural History Secretary was Mimicry in Nature, protective and offensive.

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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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*presented by the respective Societies and Editors.*

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**LIST OF MEMBERS**  
**OF THE**  
**ASIATIC SOCIETY OF BENGAL.**  
**ON THE 31ST DECEMBER, 1885.**

*Council and Officers for 1885.*

*President.*

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

*Vice-Presidents.*

D. Waldie, F. C. S.

H. F. Blanford, Esq., F. R. S.

Hon. H. J. Reynolds, B. A., C. S., C. S. I.

*Secretaries and Treasurer.*

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Dr. A. F. R. Hoernle.

F. E. Pargiter, Esq., B. A., C. S.

F. W. Peterson, Esq., F. C. S.

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

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J. Beames, Esq., C. S.

## LIST OF ORDINARY MEMBERS.

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R. = Resident. N. R. = Non-Resident. N. S. = Non-Subscribing.
L. M. = Life Member. F. M. = Foreign Member.

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N. B.—Members who have changed their residence since the list was drawn up are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alteration may be made in the subsequent edition. Errors or omissions in the following list should also be communicated to the *Secretaries*.

Members who are about to leave India and do not intend to return are particularly requested to notify to the *Secretaries* whether it is their desire to continue members of the Society; otherwise, in accordance with Rule 40 of the Bye-Laws, their names will be removed from the list at the expiration of three years from the time of their leaving India.

| Date of Election. |      |                                                                                                                                    |
|-------------------|------|------------------------------------------------------------------------------------------------------------------------------------|
| 1860 Dec. 5.      | R.   | Abdul-Latif, Khán Bahádur, Nawab, c. i. e. <i>Calcutta</i> .                                                                       |
| 1885 Mar. 6.      | R.   | Abdur Rahman, A. F. M. Barrister at Law. <i>Calcutta</i> .                                                                         |
| 1860 July 4.      | N.R. | Ahmad Khán Bahádur, Hon. Sayyid, c. s. i. <i>Aligarh</i> .                                                                         |
| 1872 April 3.     | N.R. | Ashan-ullah, Nawáb. <i>Dacca</i> .                                                                                                 |
| 1860 April 4.     | N.R. | Aitchison, J. E. T., M. D., Secretary to the Surgeon General, H. M.'s Forces, Bengal, <i>with the Afghan Boundary Commission</i> . |
| 1884 Mar. 5.      | L.M. | Ali Kader Syud Hossain Ali Mirza, Bahadur, Nawab Nazim of <i>Murshedabad</i> .                                                     |
| 1874 June 3.      | R.   | Amir Ali, Hon., Barrister-at-Law. <i>Calcutta</i> .                                                                                |
| 1865 Jan. 11.     | R.   | Anderson, John, M. D., F. R. S., F. L. S., Superintendent, Indian Museum. <i>Calcutta</i> .                                        |
| 1884 Sept. 3.     | R.   | Anderson, J. A. <i>Calcutta</i> .                                                                                                  |
| 1875 Feb. 3.      | N.R. | Armstrong, J., Surgeon, Bengal Army. <i>Naini Tal</i> .                                                                            |
| 1871 Sept. 6.     | R.   | Atkinson, Edwin Felix Thomas, B. A., C. S., Acct.-General, Bengal. <i>Calcutta</i> .                                               |
| 1869 Feb. 3.      | N.R. | Attar Singh Bahádur, Sirdár, C. I. E., M. U. F. Chief of Bhadour. <i>Ludiana</i> .                                                 |
| 1870 Feb. 2.      | L.M. | Baden-Powell, Baden Henry, C. S., C. I. E., Offg. Judge, Chief Court of the Panjab. <i>Lahore</i> .                                |
| 1873 Aug. 6.      | N.S. | Badgley, Major William Francis, S. C., Offg. Deputy Superintendent of Surveys. <i>Europe</i> .                                     |
| 1862 Feb. 5.      | R.   | Baisák, Gaurdás, Deputy Magistrate. <i>Calcutta</i> .                                                                              |
| 1859 Aug. 3.      | R.   | Balaichand Siñha. <i>Calcutta</i> .                                                                                                |
| 1865 Nov. 7.      | N.S. | Ball, Valentine, M. A., F. R. S., F. G. S. <i>Europe</i> .                                                                         |

| Date of Election. |      |                                                                                                           |
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| 1862 Aug. 1.      | R.   | Barclay, Arthur, M. B., Surgeon, Bengal Medical Service. <i>Calcutta.</i>                                 |
| 1869 Dec. 1.      | L.M. | Barker, R. A., M. D., Civil Surgeon. <i>Nya Doomka, Santal Pergunnahs.</i>                                |
| 1879 Aug. 28.     | N.R. | Barkley, D. G., M. A., C. S. <i>Lahore.</i>                                                               |
| 1885 Aug. 5.      | R.   | Barnett, John. <i>Calcutta.</i>                                                                           |
| 1881 Aug. 3.      | N.R. | Barstow, Henry Clements, C. S., Magistrate and Collector. <i>Cawnpore.</i>                                |
| 1878 June 5.      | R.   | Bayley, C. S., C. S., Offg. Under-Secretary to the Government of Bengal. <i>Calcutta.</i>                 |
| 1873 Feb. 5.      | R.   | Bayne, R. R., M. E. I. B. A., Draughtsman, Chief Engineer's Office, E. I. Railway. <i>Calcutta.</i>       |
| 1864 Sept. 7.     | N.R. | Beames, John, B. C. S., Offg. Commissioner, Burdwan Division. <i>Chinsurah.</i>                           |
| 1878 Sept. 25.    | N.R. | Beighton, T. D., C. S., Offg. Judge. <i>Patna.</i>                                                        |
| 1881 Mar. 2.      | N.R. | Benett, W. C. <i>Cawnpore.</i>                                                                            |
| 1862 Oct. 8.      | N.S. | Bernard, Charles Edward, C. S., Chief Commissioner. <i>British Burmah.</i>                                |
| 1872 Aug. 7.      | R.   | Beverley, The Hon. Henry, M. A., C. S. <i>Calcutta.</i>                                                   |
| 1876 Nov. 15.     | N.R. | Beveridge, Henry, C. S., District and Sessions Judge. <i>Faridpur.</i>                                    |
| 1878 Oct. 4.      | R.   | Bhakta, Krishna Gopal. <i>Calcutta.</i>                                                                   |
| 1879 Mar. 5.      | N.R. | Biddulph, Major, J., B. S. C. <i>Europe.</i>                                                              |
| 1884 Jan. 2.      | N.R. | Bidie, G., Brigade-Surgeon, M. B., F. L. S., C. I. E., Supdt. Govt. Central Museum. <i>Madras.</i>        |
| 1884 Feb. 6.      | R.   | Bigg-Wither, Major A. C., B. A., A. I. C. E. <i>Calcutta.</i>                                             |
| 1885 Jan. 7.      | N.R. | Bignold, T. F., C. S., Dist. and Session Judge. <i>Sooree.</i>                                            |
| 1885 Mar. 4.      | N.R. | Bilgrami, Syud Ali, B. A., A. R. S. M., F. G. S. <i>Hyderabad.</i>                                        |
| 1875 July 7.      | N.R. | Black, F. C., Archæological Engineer. <i>Bellary, Madras Presy.</i>                                       |
| 1857 Mar. 4.      | L.M. | Blanford, H. F., A. E. S. M., F. R. S., F. G. S., Meteorological Reporter, Govt. of India. <i>Europe.</i> |
| 1879 Aug. 28.     | R.   | Blyth, W. D., M. A., LL. D., C. S., Under-Secretary to the Govt. of Bengal. <i>Europe.</i>                |
| 1885 Mar. 4.      | N.R. | Bolton, C. W., C. S., Magte. and Collector. <i>Gya.</i>                                                   |
| 1880 Nov. 3.      | N.R. | Bose, Pramatha Nath, B. Sc., F. G. S., Geological Survey of India. <i>Raipur, C. P.</i>                   |
| 1877 May 2.       | R.   | Bourdillon, James Austin, C. S., Inspector-General of Registration. <i>Europe.</i>                        |
| 1876 Nov. 15.     | N.R. | Bowie, Major M. M. <i>Nagpur.</i>                                                                         |
| 1868 Jan. 15.     | N.R. | Boxwell, John, C. S., Offg. Comr., Patna Divn. <i>Gya.</i>                                                |
| 1883 Feb. 7.      | R.   | Brace, Lewis Jones K., Curator of the Herbarium, Royal Botanic Garden. <i>Sibpur.</i>                     |
| 1876 May 4.       | N.R. | Bradshaw, Brigade-Surgeon A. F., A. M. D. <i>Quetta.</i>                                                  |
| 1860 Mar. 7.      | L.M. | Brandis, Dietrich, Ph. D., F. L. S., F. R. S. <i>Europe.</i>                                              |
| 1885 Nov. 4.      | R.   | Burmun, Damoodar Das. <i>Calcutta.</i>                                                                    |

| Date of Election. |      |                                                                                                                           |
|-------------------|------|---------------------------------------------------------------------------------------------------------------------------|
| 1879 April 2.     | R.   | Calcutta, The Rt. Rev. the Lord Bishop of. <i>Calcutta.</i>                                                               |
| 1869 Jan. 20.     | N.R. | Cadell, Alan, B. A., C. S., Magte. <i>Aligarh, N. W. P.</i>                                                               |
| 1880 Mar. 3.      | N.R. | Carlleyle, A. C., Archæological Survey of India. <i>Allahabad.</i>                                                        |
| 1881 Feb. 2.      | N.R. | Carter, Philip John, Deputy Conservator of Forests. <i>Rangoon.</i>                                                       |
| 1876 Nov. 15.     | R.   | Cayley, Surgeon-Major H., Surgeon, Mayo Native Hospital. <i>Europe.</i>                                                   |
| 1885 April 1.     | R.   | Chamber, J. W. <i>Calcutta.</i>                                                                                           |
| 1881 Mar. 2.      | N.R. | Channing, Francis Chorley, B. C. S. <i>Europe.</i>                                                                        |
| 1883 Aug. 30.     | N.R. | Chatterji, Dr. Aghorenath. <i>Hyderabad.</i>                                                                              |
| 1881 Mar. 2.      | N.R. | Chatterji, Bhairab Chunder. <i>Jessore.</i>                                                                               |
| 1880 May 5.       | N.R. | Chatterji, Tara Prasada, Deputy Magte. <i>Burdwan.</i>                                                                    |
| 1880 Jan. 7.      | R.   | Chaudhuri, Govinda Kumara. <i>Calcutta.</i>                                                                               |
| 1861 Mar. 1.      | N.R. | Chaudhuri, Haranchandra, Zamindar. <i>Sherpur, Maimansingh.</i>                                                           |
| 1880 Nov. 3.      | N.R. | Chaudhuri, Khirode Chandra Roy. <i>Berhampore College.</i>                                                                |
| 1885 Feb. 4.      | N.R. | Chaudhuri, Raja Suryakanta, Bahadur. <i>Mymensing.</i>                                                                    |
| 1874 Aug. 5.      | N.R. | Chennell, A. W., Asst. Surveyor, Survey Department. <i>Shillong.</i>                                                      |
| 1885 April 1.     | R.   | Clark, H. Martyn. <i>Calcutta.</i>                                                                                        |
| 1877 Aug. 30.     | N.S. | Clarke, Major Henry Wilberforce, B. E. <i>Europe.</i>                                                                     |
| 1880 Aug. 26.     | N.R. | Clerk, Lieut.-Colonel Malcolm G., Commandant of the Fort. <i>Chunar, N. W. P.</i>                                         |
| 1881 May 4.       | N.R. | Cockburn, John, Asst. Sub-Depy. Opium Agent. <i>Karwi.</i>                                                                |
| 1884 April 2.     | N.R. | Cole, Major H. H., B. E. <i>Mhow.</i>                                                                                     |
| 1884 Mar. 5.      | R.   | Colvin, The Hon. Sir Auckland, K. C. M. G. <i>Calcutta.</i>                                                               |
| 1874 Nov. 4.      | N.R. | Constable, Archibald, Resident Engineer and Personal Asst. to Chief Engineer, Oudh and Rohilkund Railway. <i>Lucknow.</i> |
| 1881 Mar. 2.      | N.R. | Cook, Capt. L. A. C. <i>Jamrud.</i>                                                                                       |
| 1884 Aug. 6.      | R.   | Cotes, E. C., Indian Museum. <i>Calcutta.</i>                                                                             |
| 1876 Mar. 1.      | N.R. | Crawford, James, B. A., C. S., Barrister-at-Law, Offg. District and Sessions Judge. <i>Nuddea.</i>                        |
| 1877 June 6.      | R.   | Croft, Hon. A. W., M. A., Director of Public Instruction. <i>Calcutta.</i>                                                |
| 1874 Mar. 4.      | N.S. | Crombie, Alexander, M. D., Civil Surgeon. <i>Europe.</i>                                                                  |
| 1883 April 4.     | N.R. | Crosthwaite, Hon. C. H. T., C. S., Chief Commissioner, Central Provinces. <i>Nagpur.</i>                                  |
| 1873 Aug. 6.      | R.   | Cunningham, David Douglas, M. D., Professor, Medical College. <i>Calcutta.</i>                                            |
| 1873 Dec. 3.      | N.R. | Dames, Mansel Longworth, C. S., Asst. Commissioner. <i>Dera Ismail Khan.</i>                                              |
| 1877 June 6.      | N.R. | Darbhanga, H. H. the Mahárájá of. <i>Darbhanga.</i>                                                                       |

| Date of Election. |      |                                                                                                         |
|-------------------|------|---------------------------------------------------------------------------------------------------------|
| 1865 June 7.      | N.R. | Dás, Rájá Jaykishan, 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>                       |
| 1869 April 7.     | F.M. | Day, Dr. Francis, F. L. S., F. Z. S. <i>Europe.</i>                                                     |
| 1885 May 6.       | N.R. | Dé, Kumar Baikantanath. <i>Balasure.</i>                                                                |
| 1885 Jan. 7.      | R.   | De Prée Col. G. C. <i>Surveyor General of India, Calcutta.</i>                                          |
| 1859 Oct. 6.      | N.R. | Delmerick, J. G., Extra Assistant Commissioner. <i>Mussoorie.</i>                                       |
| 1862 May 7.       | N.R. | Dhanapati Singh Dughar, Raí Bahádur. <i>Asimganj.</i>                                                   |
| 1880 Dec. 1.      | N.R. | Dilawar Husein Ahmad, Maulavi, Depy. Magte., and Depy. Collr. <i>Jamui, Monghyr.</i>                    |
| 1877 July 4.      | R.   | Diler Jang, Nawáb Syad Ashgar Alí, Khan Bahadur, C. S. I. <i>Calcutta.</i>                              |
| 1875 Mar. 3.      | R.   | Douglas, J. C., Supdt. of Telegraph Stores. <i>Alipore.</i>                                             |
| 1882 Mar. 1.      | N.R. | Douie, J. M., C. S., Settlement Officer. <i>Karnal, Panjab.</i>                                         |
| 1879 Feb. 5.      | N.R. | Duthie, J. F., Superintendent, Govt. Botanical Gardens. <i>Saharanpur.</i>                              |
| 1877 Aug. 30.     | R.   | Dutt, Kedarnath, Depy. Magistrate. <i>Calcutta.</i>                                                     |
| 1881 Mar. 2.      | F.M. | Eden, The Hon'ble Sir Ashley, K. C. S. I., C. I. E. <i>Europe.</i>                                      |
| 1870 Mar. 9.      | L.M. | Edinburgh, H. R. H. The Duke of. <i>Europe.</i>                                                         |
| 1863 May 6.       | R.   | Edgar, John Ware, C. S., C. S. I. <i>Calcutta.</i>                                                      |
| 1874 Dec. 2.      | N.S. | Egerton, The Hon. Sir Robert Eyles, C. S., K. C. S. I., C. I. E. <i>Europe.</i>                         |
| 1871 Dec. 2.      | N.S. | Eliot, J., M. A., Meteorological Reporter to the Govt. of Bengal. <i>Europe.</i>                        |
| 1863 Jan. 15.     | N.S. | Fedden, Francis, Asst., Geological Survey of India. <i>Europe.</i>                                      |
| 1876 Jan. 5.      | F.M. | Feistmantel, Ottokar, M. D., Palæontologist, Geological Survey of India. <i>Europe.</i>                 |
| 1880 April 7.     | N.R. | Fiddian, W., M. A., C. S., Offg. Magistrate and Collector. <i>Birbhum.</i>                              |
| 1879 July 2.      | R.   | Finucane, M., C. S., Director of Agriculture, Bengal. <i>Calcutta.</i>                                  |
| 1869 Sept. 1.     | N.S. | Fisher, John Hadden, C. S. <i>Europe.</i>                                                               |
| 1876 July 5.      | N.R. | Foulkes, The Rev. Thos., F. L. S., M. B. A. S., F. R. G. S., Chaplain. <i>Coimbatore, Madras Presy.</i> |
| 1869 Sept. 1.     | N.R. | Fryer, Colonel G. E., M. S. C. Deputy Commissioner. <i>Thayetmo, B. Burmah.</i>                         |
| 1880 April 7.     | N.B. | Gajapati, Ananda Ram, Raja of Vizianagram. <i>Vizianagram.</i>                                          |
| 1873 Dec. 3.      | N.R. | Gamble, J. S., M. A., Conservator of Forests, Northern Circle. <i>Madras.</i>                           |

| Date of Election. |      |                                                                                                                                                                             |
|-------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1883 Aug. 1.      | N.R. | Garga, Kumar Isvariprasad, Zemindar. <i>Maisádal.</i>                                                                                                                       |
| 1859 Aug. 3.      | L.M. | Castrell, Major-General James Eardley, (retired).<br><i>Europe.</i>                                                                                                         |
| 1867 Dec. 4.      | R.   | Gay, E., M. A., F. R. A. S., Accountant-General.<br><i>Bombay.</i>                                                                                                          |
| 1883 Aug. 30.     | R.   | Ghose, Manomohan. <i>Calcutta.</i>                                                                                                                                          |
| 1871 May 3.       | R.   | Ghoshá, Káliprasanna. <i>Calcutta.</i>                                                                                                                                      |
| 1869 Feb. 3.      | R.   | Ghoshá, Pratápachandra, B. A. <i>Calcutta.</i>                                                                                                                              |
| 1880 Aug. 4.      | F.M. | Gibbs, The Hon. James, C. S. I., C. I. E., F. R. G. S.,<br>M. E. A. S., Member of the Governor-General's<br>Council. <i>Europe.</i>                                         |
| 1884 Dec. 3.      | N.R. | Giles, George M., M. B., F. R. C. S., Surgeon Naturalist,<br>S. S. "Investigator." <i>Sandoway.</i>                                                                         |
| 1875 July 7.      | N.R. | Girdlestone, Charles Edward Ridgway, c. s., Resi-<br>dent. <i>Katmandu, Nepal.</i>                                                                                          |
| 1861 Feb. 5.      | F.R. | Godwin-Austen, Lieut.-Colonel H. H., F. R. S., F. Z. S.,<br>F. R. G. S. <i>Europe.</i>                                                                                      |
| 1882 May 3.       | R.   | Golam Sarwar, Maulavi. <i>Calcutta.</i>                                                                                                                                     |
| 1862 July 2.      | N.S. | Gordon, Robert, c. E., Executive Engineer, P. W. D.<br><i>Europe.</i>                                                                                                       |
| 1885 Mar. 4.      | R.   | Gore-Brown, Spencer, E. I. Railway. <i>Calcutta.</i>                                                                                                                        |
| 1881 Mar. 2.      | R.   | Gossain, Hem Chunder. <i>Calcutta.</i>                                                                                                                                      |
| 1863 Nov. 4.      | F.M. | Gowan, Major-General J. Y. <i>Europe.</i>                                                                                                                                   |
| 1879 Jan. 8.      | N.R. | Gowan, Major W. E. <i>Simla.</i>                                                                                                                                            |
| 1877 Nov. 7.      | L.M. | Grant, Alexander, M. I. C. E., Director of State Rail-<br>ways. <i>Europe.</i>                                                                                              |
| 1876 Nov. 15.     | F.M. | Grierson, George Abraham, c. s. <i>Bankipur.</i>                                                                                                                            |
| 1885 Dec. 2.      | N.R. | Griesbach, C. L. <i>Deputy Superintendent Geological<br/>Survey of India, with the Afghan Boundary Com-<br/>mission.</i>                                                    |
| 1861 Sept. 4.     | N.S. |                                                                                                                                                                             |
| 1861 Feb. 6.      | N.R. | Griffin, Sir Lepel Henry, c. s., K. C. S. I. <i>Europe.</i>                                                                                                                 |
| 1880 Feb. 4.      | R.   | Growse, Frederick Salmon, M. A., C. S., C. I. E., Mag-<br>istrate and Collector. <i>Fatehpur, N. W. P.</i>                                                                  |
| 1883 June 6.      | N.R. | Gupta, Behárilál, c. s. <i>Calcutta.</i>                                                                                                                                    |
|                   |      | Gurdyál Singh, Sirdár, c. s., Asst. Commissioner.<br><i>Hoshiarpur, Panjab.</i>                                                                                             |
| 1867 July 3.      | N.R. |                                                                                                                                                                             |
| 1883 Jan. 3.      | N.R. | Hacket, Charles Augustus, Assistant Geol. Survey<br>of India. <i>Camp Abu, Rajputana.</i>                                                                                   |
| 1879 Mar. 5.      | N.S. | Harding, Francis Henry, B. A., C. S. <i>Europe.</i>                                                                                                                         |
| 1877 Sep. 27.     | R.   | Harraden, S. <i>Calcutta.</i>                                                                                                                                               |
| 1875 Mar. 3.      | N.R. | Hart, J., Attorney-at-Law. <i>Calcutta.</i>                                                                                                                                 |
| 1883 May 2.       | N.R. | Hendley, Surgeon Major Thomas Holbein. <i>Jeypore.</i>                                                                                                                      |
|                   |      | Hill, Samuel Alexander, B. Sc., A. B. S. M., F. C. S.,<br>Prof. of Physical Science, Muir College and<br>Meteor. Reporter to Govt., N. W. P. and Oudh.<br><i>Allahabad.</i> |
| 1872 Dec. 4.      | R.   | Hoernle, Rev. A. F. R., Ph. D., Principal of the<br><i>Madrasah. Calcutta.</i>                                                                                              |

| Date of Election. |      |                                                                                                  |
|-------------------|------|--------------------------------------------------------------------------------------------------|
| 1878 Mar. 6.      | N.R. | Hoey, W. <i>Lucknow.</i>                                                                         |
| 1884 Mar. 5.      | N.R. | Holdsworth-Fisher, John, Professor, Hooghly College. <i>Chinsurah.</i>                           |
| 1884 Mar. 5.      | N.R. | Hooper, John, c. s., Settlement Officer. <i>Basti, N. W. P.</i>                                  |
| 1873 Jan. 8.      | L.M. | Houstoun, G. L., F. G. S. <i>Europe.</i>                                                         |
| 1863 Jan. 15.     | N.R. | Howell, Mortimer Sloper, c. s. <i>Mirzapur, N. W. P.</i>                                         |
| 1878 Sep. 25.     | N.R. | Hughes, G., c. s. <i>Rupar, Amballa.</i>                                                         |
| 1867 Aug. 7.      | N.R. | Hughes, T. H., A. R. S. M., F. G. S., Geol. Survey of India. <i>Kutni., E. I. R.</i>             |
| 1866 Jan. 17.     | N.S. | Hughes, Major W. G., M. S. C. <i>Europe.</i>                                                     |
| 1870 Jan. 5.      | N.R. | Hume, Allan Octavian, C. B., C. S. <i>Allahabad.</i>                                             |
| 1884 May 2.       | N.R. | Hussein, Syud, B. A., Secy. to Nizam of Hyderabad's Council.                                     |
| 1872 Dec. 4.      | N.R. | Ibbetson, Denzil Charles Jelf, C. S. <i>Lahore.</i>                                              |
| 1866 Mar. 7.      | N.R. | Irvine, William, C. S., Magistrate and Collector. <i>Ghazipur.</i>                               |
| 1884 May 2.       | N.R. | Iskander Ali Mirza, Prince. <i>Murshedabad.</i>                                                  |
| 1853 Dec. 7.      | N.R. | Isvariprasad Singh, Maharaja, G. C. S. I. <i>Benares.</i>                                        |
| 1874 Feb. 4.      | N.R. | Jackson, Surgeon Major Charles Julian J. <i>Berhampur.</i>                                       |
| 1880 Dec. 1.      | N.S. | Jackson, William Grierson, B. C. S. <i>Europe.</i>                                               |
| 1869 Aug. 4.      | R.   | Jahán Qadr Muhammad Wáhid Alí, Bahádúr, Prince. <i>Garden Reach, Calcutta.</i>                   |
| 1876 July 5.      | N.S. | Jarrad, Lieut. F. W., B. N., F. R. A. S., Marine Survey Dept. <i>Europe.</i>                     |
| 1879 Mar. 5.      | B.   | Jarrett, Lt.-Col. H. S., B. S. C., Secy. to the Board of Examiners. <i>Calcutta.</i>             |
| 1881 Feb. 2.      | N.B. | Jenkins, Capt. Thomas Morris, M. S. C., Asst. Commissioner and J. P. for Burmah. <i>Bassein.</i> |
| 1862 Mar. 5.      | N.R. | Johnstone, Lieut.-Colonel James William Hope, <i>Europe.</i>                                     |
| 1867 Dec. 4.      | N.S. | Johnstone, Lt.-Col. James, Political Agent. <i>Europe.</i>                                       |
| 1878 Aug. 7.      | N.S. | Johnstone, P. DeLacy, C. S. <i>Europe.</i>                                                       |
| 1873 Dec. 3.      | N.R. | Johore, H. H. the Maharájá of, K. C. S. I. <i>New Johore, Singapore.</i>                         |
| 1884 Aug. 6.      | N.R. | Jones, E. J., Geol. Survey of India. <i>Ohhindwara.</i>                                          |
| 1875 Nov. 3.      | N.R. | Jones, S. S., B. A., C. S. <i>Rangpur.</i>                                                       |
| 1869 April 7.     | B.   | Kabíruddín Ahmad, Maulavi. <i>Calcutta.</i>                                                      |
| 1882 Mar. 1.      | R.   | Kennedy, Pringle, M. A. <i>Calcutta.</i>                                                         |
| 1874 Dec. 2.      | N.R. | Khudábaksh, Khan Bahadur, Maulavi. <i>Bankipur.</i>                                              |
| 1884 Nov. 5.      | N.R. | Kitts, Eustace John, C. S. <i>Azamgarh, N. W. P.</i>                                             |
| 1867 Dec. 4.      | R.   | King, G., 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. <i>Peshawar.</i>                                         |



| Date of Election. |      |                                                                                                                         |
|-------------------|------|-------------------------------------------------------------------------------------------------------------------------|
| 1862 Jan. 15.     | N.R. | King, W., Jr., B. A., F. G. S., Depy. Supdt. of Madras Geol. Survey of India. <i>Kutni., E. I. R.</i>                   |
| 1880 Dec. 1.      | N.S. | Kirton, Surgeon-Major William Henry, F. L. S., Medical Store-Keeper. <i>Europe.</i>                                     |
| 1880 Jan. 7.      | R.   | Kisch, H. M., M. A., C. S. <i>Calcutta.</i>                                                                             |
| 1877 Jan. 17.     | N.R. | Kishor, Kumara Radha Dev, Juvraj of Hill Tipperah. <i>Tipperah.</i>                                                     |
| 1882 June 7.      | N.R. | Kishore Singh, Maharaja Kumar Harendra. <i>Bettiah.</i>                                                                 |
| 1884 Sept. 3.     | R.   | Kumar Indra Chandra Singh of Paikparrah. <i>Calcutta.</i>                                                               |
| 1885 Mar. 4.      | R.   | Kumar Nilkrishna. <i>Calcutta.</i>                                                                                      |
| 1885 April 1.     | R.   | Kumar Sarat Chunder Singh. <i>Calcutta.</i>                                                                             |
| 1883 Aug. 30.     | N.R. | Kuster, E. E. A. <i>Darbhanga.</i>                                                                                      |
| 1878 Oct. 4.      | N.R. | Lachman Sing, Raja. <i>Bulandshahr.</i>                                                                                 |
| 1877 Sep. 27.     | N.R. | La Touche, James John Digges, B. A., C. S. <i>Gorakhpur.</i>                                                            |
| 1881 Feb. 2.      | R.   | Laughlin, Robert Campbell, Asst. Supdt., Govt. Telegraph Department. <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>                                  |
| 1880 July 7.      | N.R. | Lewis, Rev. Arthur, B. A., Vice-Principal, St. John's Divinity School. <i>Lahore.</i>                                   |
| 1873 Feb. 5.      | N.S. | Lewis, Timothy Richards, M. B., Special Asst. to the Sanitary Commissioner with the Government of India. <i>Europe.</i> |
| 1869 July 7.      | N.R. | Lyall, Charles James, B. A., C. S. <i>Shillong.</i>                                                                     |
| 1870 April 7.     | L.M. | Lyman, B. Smith. <i>Northampton, Mass., U. S., America.</i>                                                             |
| 1884 Dec. 3.      | N.R. | McCabe, R. B., C. S. <i>Kohima, Naga Hills, Assam.</i>                                                                  |
| 1868 Dec. 2.      | N.R. | Macauliffe, Michael, B. A., C. S., Judicial Assistant. <i>Gujrat, Panjab.</i>                                           |
| 1880 June 2.      | N.R. | Macdonald, James, C. E. <i>Rurki.</i>                                                                                   |
| 1884 Mar. 5.      | R.   | Macdonnell, A. P., B. A., C. S., Offg. Secy., Govt. of Bengal. <i>Calcutta.</i>                                         |
| 1879 Feb. 5.      | N.R. | Macgregor, Major C. R., F. B. G. S., 44th N. I. <i>Dibrugarh.</i>                                                       |
| 1848 April 5.     | L.M. | Maclagan, Major-General Robert, B. E., F. E. S. E., F. R. G. S. <i>Europe.</i>                                          |
| 1873 Dec. 3.      | R.   | MacLeod, Surgeon-Major Kenneth, M. D. <i>Calcutta.</i>                                                                  |
| 1880 May 5.       | N.R. | MacLeod, Roderick Henry, B. C. S., Asst. Magte. <i>Kasia, Gorakhpur, N. W. P.</i>                                       |
| 1881 July 6.      | R.   | Mahomed Firukh Shah, Prince. <i>Calcutta.</i>                                                                           |
| 1882 Aug. 2.      | R.   | Mahomed Yusooif, Hon. Moulvie. <i>Calcutta.</i>                                                                         |
| 1867 April 3.     | R.   | Mainwaring, Major-General George Byres, S. C. <i>Serampur.</i>                                                          |

| Date of Election. |      |                                                                                                    |
|-------------------|------|----------------------------------------------------------------------------------------------------|
| 1878 April 3.     | R.   | Mallet, F. R., Geological Survey of India. <i>Calcutta.</i>                                        |
| 1864 July 6.      | R.   | Mallik, Coomar Debendra. <i>Calcutta.</i>                                                          |
| 1869 Sept. 1.     | R.   | Mallik, Yadulál. <i>Calcutta.</i>                                                                  |
| 1880 May 5.       | N.R. | Mandalik, The Hon. Rao Sahib Visvanath Narayana, c. s. i. <i>Bombay.</i>                           |
| 1869 July 7.      | N.R. | Markham, Alexander Macaulay, c. s., F. E. G. S., Collector. <i>Banda.</i>                          |
| 1873 July 2.      | N.R. | Marshall, C. W. <i>Gonatea, Synthia, Bengal.</i>                                                   |
| 1877 Feb. 7.      | N.S. | Marshall, Major George Fred. Lycester, R. E., Asst. Secy., Govt. of India, P. W. D. <i>Europe.</i> |
| 1860 Mar. 7.      | R.   | Medlicott, H. B., M. A., F. R. S., F. G. S., Supdt., Geological Survey of India. <i>Calcutta.</i>  |
| 1877 Mar. 7.      | N.R. | Medlycott, Rev. Adolphus Edwin, PH. D., Military Chaplain. <i>Ferozepur, Panjab.</i>               |
| 1884 Nov. 5.      | N.R. | Middlemiss, C. S. <i>Chakrata, N. W. P.</i>                                                        |
| 1871 Sept. 6.     | F.M. | Miles, Lieut.-Colonel S. B., s. c., Political Agent. <i>Muscat.</i>                                |
| 1884 Sept. 3.     | R.   | Miles, William Harry. <i>Calcutta.</i>                                                             |
| 1870 July 6.      | R.   | Miller, A. B., B. A., Barrister-at-law, Official Assignee. <i>Calcutta.</i>                        |
| 1874 May 6.       | N.R. | Minchin, F. J. V. <i>Aska, Ganjan.</i>                                                             |
| 1875 Aug. 4.      | N.R. | Minchin, Colonel, C. C. <i>Hissar, Panjab.</i>                                                     |
| 1884 Dec. 3.      | N.R. | Mirza Saraiya Jah Bahadur, Prince.                                                                 |
| 1856 Mar. 5.      | R.   | Mitra, Rájendralála, Rái Bahádur, LL. D., C. I. E. <i>Calcutta.</i>                                |
| 1876 Dec. 6.      | F.M. | Mockler, Major E., British Consul. <i>Basrah, Persian Gulf.</i>                                    |
| 1881 May 4.       | N.R. | Molloy, Major Edward, 5th Goorkhas. <i>Abbotabad, Hazara, Panjab.</i>                              |
| 1884 June 4.      | R.   | Moncreiffe, T. G. H. <i>Calcutta.</i>                                                              |
| 1884 Apr. 2.      | R.   | Mondy, Edmund F., Civil Engineering Coll. <i>Sibpur.</i>                                           |
| 1881 Dec. 7.      | F.M. | Monteath, J. J., M. D. <i>Silchar.</i>                                                             |
| 1864 Nov. 2.      | N.R. | Muir, J. W., M. A., C. S. <i>Mirzapore.</i>                                                        |
| 1879 May 7.       | R.   | Mukerjea, Bhudeva, c. I. E. <i>Calcutta.</i>                                                       |
| 1883 May 2.       | R.   | Mukerji, Rajkrishna, M. A., B. L., Bengali translator to Govt. <i>Calcutta.</i>                    |
| 1867 Mar. 6.      | R.   | Mukerjea, The Hon. Pearimohan, M. A. <i>Uttarpara.</i>                                             |
| 1882 Jan. 4.      | R.   | Mukerji, Girjabhushan, M. A. <i>Calcutta.</i>                                                      |
| 1885 July 1.      | R.   | Mukerjea, Nilmoney, Professor Sanskrit College. <i>Calcutta.</i>                                   |
| 1885 June 3.      | N.R. | Naemwoollah, Maulvi, Depy. Magte. <i>Bulandshahr.</i>                                              |
| 1880 Aug. 26.     | N.R. | Nag, Sib Chunder. <i>Bakarganj.</i>                                                                |
| 1880 Dec. 1.      | R.   | Napier, J. R. <i>Calcutta.</i>                                                                     |
| 1882 Aug. 2.      | N.R. | Narain Singh, Raja Ram. <i>Khyrah, Monghyr.</i>                                                    |
| 1876 May 4.       | R.   | Nash, A. M., M. A., Professor, Presidency College. <i>Calcutta.</i>                                |

| Date of Election. |      |                                                                                                            |
|-------------------|------|------------------------------------------------------------------------------------------------------------|
| 1881 Nov. 2.      | R.   | Nicéville, L. de. <i>Calcutta.</i>                                                                         |
| 1869 July 7.      | N.R. | Nursing Rao, A. V. <i>Vizagapatam.</i>                                                                     |
| 1885 Feb. 4.      | R.   | Nyaratna, Pandit Maheschandra. <i>Calcutta.</i>                                                            |
| 1871 July 5.      | N.R. | Oates, E. W., C. E., Engineer, P. W. D., Garrison Div., Sittang Canal. <i>Europe.</i>                      |
| 1879 Aug. 28.     | N.R. | Oldham, Surgeon-Major C. F., F. R. G. S. <i>Europe.</i>                                                    |
| 1883 Dec. 1.      | N.R. | Oldham, R. D., A. E. S. M., Asst., Geol. Sur. of India.                                                    |
| 1883 Aug. 30.     | N.R. | Oliver; Edw. Emmerson, M. I. C. E., Asst. Secy. to Govt. Panjab, P. W. D. <i>Lahore.</i>                   |
| 1885 Feb. 4.      | F.M. | Oliver, James William, Forest Dept. <i>Europe.</i>                                                         |
| 1880 Aug. 4.      | L.M. | Pandia, Pandit Mohanlall Vishnulall, F. T. S., Member and Secy., Royal Council of Meywar. <i>Oodeypur.</i> |
| 1880 Jan. 7.      | R.   | Pargiter, Frederick E., B. A., C. S., Officiating Commissioner of the Sundarbans. <i>Calcutta.</i>         |
| 1880 Jan. 7.      | N.R. | Parry, J. W., C. E., Assoc. M. I. C. E., Asst. Engineer. <i>Nundial via Ouddapah, Madras.</i>              |
| 1862 May 7.       | L.M. | Partridge, Surgeon-Major Samuel Bowen, M. D. <i>Europe.</i>                                                |
| 1871 Dec. 6.      | N.R. | Peal, S. E. <i>Sibsagar, Assam.</i>                                                                        |
| 1860 Feb. 1.      | F.M. | Pearse, Major-General G. G., C. B., R. H. A. <i>Europe.</i>                                                |
| 1873 Aug. 6.      | R.   | Pedler, Alexander, F. C. S., Professor of Chemistry, Presidency College. <i>Calcutta.</i>                  |
| 1864 Mar. 2.      | N.S. | Pellew, Fleetwood Hugo, C. S. <i>Europe.</i>                                                               |
| 1865 Sept. 6.     | N.R. | Peppé, T. F. <i>Arrah.</i>                                                                                 |
| 1881 Aug. 25.     | R.   | Percival, Hugh Melville, M. A., Professor, Presidency College. <i>Calcutta.</i>                            |
| 1883 Jan. 3.      | N.R. | Plowden, Major Trevor C. <i>Simla.</i>                                                                     |
| 1877 Aug. 1.      | N.R. | Peters, C. T., M. B., Surgeon-Major. <i>Bombay.</i>                                                        |
| 1868 May 6.       | R.   | Peterson, F. W., F. C. S., <i>H. M.'s Mint. Calcutta.</i>                                                  |
| 1872 Dec. 4.      | R.   | Pránáth Sarasvati, Pandit, M. A., B. L. <i>Bhowanipur.</i>                                                 |
| 1880 June 2.      | N.R. | Prasad Sinh, Thakur Garuradhawaya, Rajah of Beswan. <i>Beswan Fort, Aligarh.</i>                           |
| 1877 Aug. 30.     | N.R. | Pratapnarayan Singh, Depy. Magte. <i>Bankura.</i>                                                          |
| 1881 Feb. 2.      | R.   | Prideaux, Major William Francis, B. S. C. <i>Calcutta.</i>                                                 |
| 1880 April 7.     | N.R. | Rai, Bipina Chandra, B. L. <i>Rungpore.</i>                                                                |
| 1877 Aug. 1.      | N.R. | Rees, J. C., Asst. Engr., P. W. D. <i>Thonzai, British Burmah.</i>                                         |
| 1871 July 5.      | N.R. | Reid, James Robert, C. S., Collector. <i>Bareilly, Rohilkund.</i>                                          |
| 1881 Mar. 2.      | R.   | Reynolds, The Hon'ble Herbert John, B. A., C. S. <i>Calcutta.</i>                                          |
| 1880 Aug. 4.      | N.R. | Reynolds, Herbert William Ward, C. S. <i>Allahabad.</i>                                                    |

| Date of Election. |      |                                                                                             |                                 |
|-------------------|------|---------------------------------------------------------------------------------------------|---------------------------------|
| 1884 Mar. 5.      | N.R. | Risley, H. H., B. A., c. s., Depy. Comr.                                                    | <i>Manbhoom.</i>                |
| 1860 Jan. 3.      | N.R. | Rivett-Carnac, John Henry, C. S., C. I. E., F. S. A.,<br>Opium Agent.                       | <i>Ghasipur.</i>                |
| 1878 Sep. 25.     | N.S. | Robertson, Rev. J.                                                                          | <i>Europe.</i>                  |
| 1865 Feb. 1.      | N.S. | Robinson, S. H.                                                                             | <i>Europe.</i>                  |
| 1881 Aug. 30.     | N.R. | Roy, Nanda Kumar.                                                                           | <i>Central Provinces.</i>       |
| 1885 Mar. 4.      | R.   | Rustomjee, H. M.                                                                            | <i>Calcutta.</i>                |
| 1880 Sep. 30.     | N.R. | Sage, E. M., Asst. Engineer, P. W. D.                                                       | <i>Tavoy, British Burmah.</i>   |
| 1877 May 2.       | N.R. | Sandford, W. Rajputana-Malwa Railway.                                                       | <i>Ajmere, Rajputana.</i>       |
| 1885 Feb. 4.      | R.   | Sastri, Haraprasad, M. A.                                                                   | <i>Calcutta.</i>                |
| 1885 Mar. 4.      | R.   | Sarvádrikári, Rajakumár.                                                                    | <i>Calcutta.</i>                |
| 1870 May 4.       | R.   | Schlich, Dr. W.                                                                             | <i>Calcutta.</i>                |
| 1884 April 2.     | N.R. | Scotland, John Parry, C. E., Ex. Engineer.                                                  | <i>Buzar.</i>                   |
| 1874 July 1.      | F.M. | Scully, Dr. John.                                                                           | <i>H. M.'s Mint, Calcutta.</i>  |
| 1874 Dec. 2.      | N.R. | Sen, Dr. Rám Dás.                                                                           | <i>Berhampur.</i>               |
| 1885 April 1.     | R.   | Sen, Yadunath.                                                                              | <i>Calcutta.</i>                |
| 1885 April 1.     | R.   | Sen, Narendranath.                                                                          | <i>Calcutta.</i>                |
| 1882 June 7.      | N.S. | Senart, Emile, Membre de l'Institut de France.                                              | <i>Paris.</i>                   |
| 1882 Aug. 2.      | R.   | Serajul Islam, Maulavi.                                                                     | <i>Calcutta.</i>                |
| 1879 Jan. 8.      | N.R. | Sewell, R., M. C. S.                                                                        | <i>Madras.</i>                  |
| 1879 May 7.       | N.S. | Sheridan, C. J., C. E.                                                                      | <i>Europe.</i>                  |
| 1881 Mar. 2.      | N.R. | Shopland, E. R., Indian Marine, Port Officer.                                               | <i>Akyab.</i>                   |
| 1882 May 3.       | N.R. | Shyamaldass, Kavirája, Private Secy. to H. H. the<br>Maháráná of Udaipur.                   | <i>Udaipur.</i>                 |
| 1878 April 3.     | R.   | Simson, A.                                                                                  | <i>Calcutta.</i>                |
| 1867 April 3.     | R.   | Sirkár, Dr. Mahendralála.                                                                   | <i>Calcutta.</i>                |
| 1872 Aug. 5.      | N.R. | Skrefsrud, Rev. L. O., Indian Home Mission to the<br>Santháls.                              | <i>Europe.</i>                  |
| 1864 Sept. 7.     | N.R. | Sladen, Col. E. B., M. S. C.                                                                | <i>Akyab.</i>                   |
| 1885 Nov. 4.      | R.   | Smith, N. F. F.                                                                             | <i>Calcutta.</i>                |
| 1874 June 3.      | N.R. | Smith, Vincent Arthur, C. S., Settlement Officer.                                           | <i>Basti, N.-W. P.</i>          |
| 1872 July 3.      | N.R. | Stephen, Carr, B. L., Judl. Asst. Commr.                                                    | <i>Ludianah.</i>                |
| 1879 Oct. 2.      | N.S. | Sterndale, R. A., F. B. G. S., Asst. Commr. of Cur-<br>rency.                               | <i>Bombay.</i>                  |
| 1882 May 3.       | R.   | Stewart, H. E. Sir Donald M., Bart., G. C. B., G. C. S. I.,<br>Commander-in-Chief.          | <i>Calcutta.</i>                |
| 1878 July 3.      | N.R. | St. Barbe, H. L., C. S.                                                                     | <i>Bassein, British Burmah.</i> |
| 1876 Aug. 2.      | N.R. | St. John, Lieut.-Col. Sir Oliver Beauchamp, B. E.,<br>K. C. S. I., Officer on special duty. | <i>Kashmir.</i>                 |
| 1880 Nov. 3.      | N.R. | Sturt, Lieut. Robert Ramsay Napier, B. S. C., Panjab<br>Frontier Force.                     | <i>Kohar.</i>                   |
| 1884 Mar. 5.      | N.R. | Swinhoe, Lieut.-Col. C., B. S. C., Asst. Comy. Genl.                                        | <i>Bombay.</i>                  |

| Date of Election. |      |                                                                                                  |
|-------------------|------|--------------------------------------------------------------------------------------------------|
| 1864 Aug. 11.     | R.   | Swinhoe, W., Attorney-at-Law. <i>Calcutta.</i>                                                   |
| 1880 Nov. 3.      | N.R. | Swynnerton, Rev. Charles. <i>Naushera.</i>                                                       |
| 1885 April 1.     | N.R. | Syad Mahdi Ali Nawaz Jang, Bahadur, Maulvi. <i>Hyderabad.</i>                                    |
| 1880 June 2.      | N.S. | Sykes, John Gastrell, LL. B., Barrister-at-Law and Advocate, High Court, N. W. P. <i>Europe.</i> |
| 1868 June 3.      | R.   | Tagore, The Hon'ble Maharájâ Jotendra Mohun, K. C. S. I. <i>Calcutta.</i>                        |
| 1865 Sept. 6.     | R.   | Tawney, C. H., M. A., Principal, Presidency College. <i>Europe.</i>                              |
| 1874 Mar. 4.      | N.S. | Taylor, Commander A. D., late Indian Navy. <i>Europe.</i>                                        |
| 1884 May 5.       | N.R. | Taylor, W. C., Settlement Officer, Khudra. <i>Orissa.</i>                                        |
| 1860 May 2.       | N.S. | Temple, Sir R., Bart., K. C. S. I., C. I. E., B. C. S. <i>Europe.</i>                            |
| 1878 June 5.      | N.R. | Temple, Capt. R. C., S. C. <i>Ambala.</i>                                                        |
| 1876 Feb. 2.      | N.S. | Tennant, Major-General James Francis, B. E., F. E. S., C. I. E., Mint Master. <i>Europe.</i>     |
| 1875 June 2.      | N.R. | Thibaut, Dr. G., Professor, Sanskrit College. <i>Benares.</i>                                    |
| 1875 Nov. 3.      | N.R. | Thomson, Robert George, C. S., Asst. Comr. <i>Jhelum, Panjab.</i>                                |
| 1847 June 2.      | L.M. | Thuillier, Major-Genl. Sir Henry Edward Landor, B. A., C. S. I., F. E. S. <i>Europe.</i>         |
| 1883 June 6.      | N.R. | Toker, Lieut.-Col. Alliston Champion, B. S. C., 18th N. I. <i>Dinapoor.</i>                      |
| 1871 April 5.     | F.M. | Treffitz, Oscar. <i>Europe.</i>                                                                  |
| 1861 June 5.      | L.M. | Tremlett, James Dyer, M. B., C. S., Commissioner. <i>Delhi.</i>                                  |
| 1872 July 3.      | R.   | Trevor, Colonel William Spottiswoode, B. E., with the Supreme Govt. <i>Calcutta.</i>             |
| 1880 Mar. 3.      | N.R. | Tufnell, Lieut. R. H. C., 30th M. N. I. <i>Madras.</i>                                           |
| 1863 May 6.       | N.R. | Tyler, J. W. M. D., F. E. C. S., Supdt., Central Prison. <i>Agra.</i>                            |
| 1885 May 6.       | R.   | Veradeau, Ivan. <i>Calcutta.</i>                                                                 |
| 1865 Nov. 1.      | R.   | Waldie, David, F. C. S. <i>Calcutta.</i>                                                         |
| 1865 May 3.       | R.   | Waterhouse, Lt.-Col. James, B. S. C., Dy. Supdt., Survey of India. <i>Calcutta.</i>              |
| 1874 July 1.      | R.   | Watt, Dr. George. <i>Calcutta.</i>                                                               |
| 1876 Dec. 6.      | R.   | Webb, W. T., M. A., Professor, Presidency College. <i>Calcutta.</i>                              |
| 1869 Sept. 1.     | N.S. | Westland, James, C. S., Comptroller-General. <i>Calcutta.</i>                                    |
| 1875 Feb. 3.      | N.R. | Whiteway, Richard Stephen, C. S., Settlement Officer. <i>Ajmere and Merwara.</i>                 |

| Date of Election. |      |                                                                                                                       |
|-------------------|------|-----------------------------------------------------------------------------------------------------------------------|
| 1878 Aug. 29      | N.S. | Whittall, R., Forest Dept. <i>Europe.</i>                                                                             |
| 1873 May 7.       | N.R. | Williams, George Robert Carlisle, B. A., C. S., Depy. Commissioner. <i>Jhansi.</i>                                    |
| 1880 Feb. 4.      | N.S. | Wilson, The Hon. Arthur. <i>Europe.</i>                                                                               |
| 1870 Aug. 3.      | N.R. | Wilson, Robert Henry, B. A., C. S. <i>Calcutta.</i>                                                                   |
| 1878 Mar. 6.      | N.R. | Wilson, J., C. S. <i>Gurgaon, Punjab.</i>                                                                             |
| 1866 Mar. 7.      | L.M. | Wise, Dr. J. E. N. <i>Rostellan, County Cork, Ireland.</i>                                                            |
| 1870 Jan. 5.      | R.   | Wood-Mason, James. <i>Calcutta.</i>                                                                                   |
| 1873 Aug. 6.      | N.R. | Woodthorpe, Lieut.-Col. Robert Gossett, R. E., Asst. Supdt., Survey of India. <i>Camp via Dibrugarh, Upper Assam.</i> |



## SPECIAL HONORARY CENTENARY MEMBERS.

| Date of Election. |                                                                      |
|-------------------|----------------------------------------------------------------------|
| 1884 Jan. 15.     | James Prescott Joule, Esq., LL. D., F. R. S. <i>Manchester.</i>      |
| 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.     | Monier Williams, Esq., 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.  | Edward Thomas, F. R. S. <i>London.</i>                                                      |
| 1860 Nov. 7.  | Dr. Aloys Sprenger. <i>Heidelberg.</i>                                                      |
| 1860 Nov. 7.  | Dr. Albrecht Weber. <i>Berlin.</i>                                                          |
| 1868 Feb. 5.  | General A. Cunningham, C. S. I. <i>India.</i>                                               |
| 1868 Feb. 5.  | Professor Bápu Deva Sástri. <i>Benares.</i>                                                 |
| 1868 Sept. 2. | A. Grote. <i>London.</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. E. S., F. G. S., F. Z. S.<br>F. L. S. <i>London.</i> |
| 1875 Nov. 3.  | Dr. O. Böhtlingk. <i>Jena.</i>                                                              |
| 1875 Nov. 3.  | Prof. J. O. Westwood. <i>Oxford.</i>                                                        |
| 1876 April 5. | Col. H. Yule, R. E., C. B. <i>London.</i>                                                   |
| 1876 April 5. | Dr. Werner Siemens. <i>Berlin.</i>                                                          |
| 1879 June 4.  | Prof. E. B. Cowell, D. C. L. <i>Cambridge.</i>                                              |
| 1879 June 4.  | Dr. A. Günther, v. P. E. S. <i>London.</i>                                                  |
| 1879 June 4.  | Dr. J. Janssen. <i>Paris.</i>                                                               |
| 1870 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. F. Helmholtz. <i>Berlin.</i>                                           |
| 1881 Dec. 7.  | Dr. Rudolph v. Roth. <i>Tübingen.</i>                                                       |
| 1881 Dec. 7.  | Sir William Thomson, Knt., LL. D., F. R. S., F. R. S. E.<br><i>Glasgow.</i>                 |
| 1881 Dec. 7.  | Professor William Wright, LL. D. <i>Cambridge.</i>                                          |
| 1883 Feb. 7.  | W. T. Blanford, A. R. S. M., F. R. S., F. G. S., F. R. G. S.<br><i>London.</i>              |
| 1883 Feb. 7.  | Alfred Russell Wallace, F. L. S., F. R. G. S. <i>Godalming.</i>                             |
| 1883 Feb. 7.  | Prof. William Dwight Whitney. <i>Newhaven, Connecticut,</i><br>U. S.                        |

## 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>Damsacus.</i>            |
| 1856              | „ 2.    | Smith, Dr. E. <i>Beyroul.</i>               |
| 1856              | „ 2.    | Taylor, J., Esq. <i>Bussorah.</i>           |
| 1857              | Mar. 4. | Nietner, J., Esq. <i>Ceylon.</i>            |
| 1858              | „ 3.    | Schlagintweit, R. von. <i>Giessen.</i>      |
| 1859              | Nov. 2. | Frederick, Dr. H. <i>Batavia.</i>           |
| 1860              | Feb. 1. | Baker, The Rev. H. <i>E. Malabar.</i>       |
| 1861              | July 3. | Gösche, Dr. R.                              |
| 1862              | Mar. 3. | Murray, A., Esq. <i>London.</i>             |
| 1863              | July 4. | Barnes, R. H., Esq. <i>Ceylon.</i>          |
| 1866              | May 7.  | Schlagintweit, Prof. E. von. <i>Berlin.</i> |
| 1868              | „ 5.    | Holmböe, Prof. <i>Christian.</i>            |

## ASSOCIATE MEMBERS.

|      |          |                                                       |
|------|----------|-------------------------------------------------------|
| 1865 | May 3.   | Dall, Rev. C. H. <i>Calcutta.</i>                     |
| 1874 | Feb. 4.  | Schaumburgh, J., Esq. <i>Calcutta.</i>                |
| 1874 | April 1. | Lafont, Rev. Fr. E., s. j., c. i. e. <i>Calcutta.</i> |
| 1884 | Aug. 6.  | Moore, F. F. R. S., F. L. S. <i>London.</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>                       |
| 1885 | Dec. 2.  | Dr. A. Führer. <i>Lucknow.</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 :

The Hon'ble Sir Robert Eyles Egerton, C. S., K. C. S. I.  
W. G. Jackson, Esq., C. S.  
F. H. Pellow, Esq., C. S.



LOSS OF MEMBERS DURING 1884.

BY RETIREMENT.

E. H. Man, Esq.  
Rev. K. M. Banerjea.  
Rai Sohun Lall.  
Col. E. J. Macnair.  
E. V. Westmacott.  
W. H. R. Merk.  
Maulavi Fath Ali.  
J. F. K. Hewitt, Esq.  
J. Copley Moyle, Esq.  
R. Logan, Esq.  
G. S. Leonard, Esq.  
Col. S. T. Trevor.  
W. Lawrence, Esq.  
A. Thomson, Esq.  
A. Weekes, Esq.  
Babu Benod Behary Mullick.

BY DEATH.

*Ordinary Members.*

Babu Adharlall Sen.  
Rájá Satyanand Ghoshál.  
J. F. Browne, Esq., c. s.

BY REMOVAL.

*Under Rule 40.*

G. W. Allen, Esq., c. i. e.  
T. E. Ravenshaw, Esq., c. s.

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[APPENDIX.]

ABSTRACT STATEMENT  
OF  
RECEIPTS AND DISBURSEMENTS  
OF THE  
ASIATIC SOCIETY OF BENGAL  
FOR  
THE YEAR 1885.

# STATEMENT

## *Asiatic Society*

### Dr.

|                                                         |     |     |     |     |              |                 |                 |
|---------------------------------------------------------|-----|-----|-----|-----|--------------|-----------------|-----------------|
| <b>To ESTABLISHMENT.</b>                                |     |     |     |     |              |                 |                 |
| Salaries                                                | ... | ... | ... | Rs. | 3,819        | 0               | 8               |
| Commission                                              | ... | ... | ... |     | 342          | 12              | 11              |
| Pension                                                 | ... | ... | ... |     | 8            | 0               | 0               |
|                                                         |     |     |     |     | <u>4,169</u> | <u>13</u>       | <u>7</u>        |
| <b>To CONTINGENCIES.</b>                                |     |     |     |     |              |                 |                 |
| Stationery                                              | ... | ..  | ... |     | 216          | 13              | 6               |
| Lighting                                                | ... | ... | ... |     | 84           | 8               | 0               |
| Building                                                | ... | ... | ... |     | 19           | 0               | 0               |
| Taxes                                                   | ... | ... | ... |     | 720          | 0               | 0               |
| Postage                                                 | ... | ... | ... |     | 709          | 9               | 0               |
| Freight                                                 | ... | ... | ... |     | 22           | 4               | 0               |
| Meetings                                                | ... | ... | ... |     | 91           | 0               | 0               |
| Miscellaneous                                           | ... | ... | ... |     | 159          | 0               | 3               |
|                                                         |     |     |     |     | <u>2,022</u> | <u>2</u>        | <u>9</u>        |
| <b>To LIBRARY AND COLLECTIONS.</b>                      |     |     |     |     |              |                 |                 |
| Books                                                   | ... | ... | ... |     | 96           | 13              | 9               |
| Local Periodicals                                       | ... | ... | ... |     | 39           | 6               | 0               |
| Binding                                                 | ... | ... | ... |     | 568          | 10              | 0               |
| Bonus to the late Asst. Secretary for Library Catalogue |     |     |     |     | 600          | 0               | 0               |
|                                                         |     |     |     |     | <u>1,304</u> | <u>13</u>       | <u>9</u>        |
| <b>To PUBLICATIONS.</b>                                 |     |     |     |     |              |                 |                 |
| Centenary Review                                        | ... | ... | ... |     | 2,483        | 6               | 0               |
| Journal, Part I                                         | ... | ... | ... |     | 2,324        | 6               | 3               |
| Journal, Part II                                        | ... | ... | ... |     | 1,773        | 15              | 4               |
| Proceedings                                             | ... | ... | ... |     | 1,299        | 4               | 3               |
|                                                         |     |     |     |     | <u>7,880</u> | <u>15</u>       | <u>10</u>       |
| To Printing charges of circulars, receipts, forms, &c.  |     |     |     |     | 123          | 10              | 0               |
| To PERSONAL ACCOUNTS (Writes off and Miscellaneous)     |     |     |     |     | ...          | 1,108           | 12              |
| To Balance                                              | ... | ... | ... |     | ...          | <u>1,42,583</u> | <u>15</u>       |
|                                                         |     |     |     |     |              | <u>1,59,194</u> | <u>4</u>        |
|                                                         |     |     |     |     |              | <u>2</u>        |                 |
| Total Rs.                                               | ... |     |     |     |              |                 | <u>1,59,194</u> |
|                                                         |     |     |     |     |              |                 | <u>4</u>        |
|                                                         |     |     |     |     |              |                 | <u>2</u>        |

NO. 1.  
*of Bengal.*

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## Cr.

By Balance from last Report .. ... Rs. 1,42,957 9 5

## BY CASH RECEIPTS.

|                                |                  |        |
|--------------------------------|------------------|--------|
| Publications sold for Cash ... | Rs.              | 98 0 0 |
| Interest on Investments ...    | 6,165 8 0        |        |
| Advances recovered ...         | 8 9 0            |        |
| Miscellaneous ...              | 48 1 9           |        |
|                                | <u>6,320 2 9</u> |        |

## BY PERSONAL ACCOUNT.

|                     |                  |
|---------------------|------------------|
| Admission fees ...  | 976 0 0          |
| Subscriptions ...   | 8,459 0 0        |
| Sales on credit ... | 370 0 0          |
| Miscellaneous ...   | 111 8 0          |
|                     | <u>9,916 8 0</u> |

Total Income ... 16,236 10 9

Total Rs. ... 1,59,194 4 2

F. W. PETERSON,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Audited.  
BROWNE & LOVELOCK,  
*Chartered Accountants.*

**STATEMENT**  
*Oriental Publication Fund in Account*

---

Dr.

| To CASH EXPENDITURE.                                   |     |     |                           |
|--------------------------------------------------------|-----|-----|---------------------------|
| Printing charges ... ..                                | ... | ... | Rs. 8,332 3 0             |
| Editing charges ... ..                                 | ... | ... | 3,719 8 0                 |
| Salaries ... ..                                        | ... | ... | 1,094 5 4                 |
| Advertisizing ... ..                                   | ... | ... | 120 0 0                   |
| Binding ... ..                                         | ... | ... | 4 0 0                     |
| Freight ... ..                                         | ... | ... | 23 0 0                    |
| Stationery ... ..                                      | ... | ... | 19 13 0                   |
| Postage ... ..                                         | ... | ... | 537 13 0                  |
| Contingencies ... ..                                   | ... | ... | 19 5 6                    |
| Commission on collecting bills ... ..                  | ... | ... | 29 11 3                   |
|                                                        |     |     | 13,949 11 1               |
| To PERSONAL ACCOUNT (Writes off and Miscellaneous) ... |     |     | 48 12 0                   |
| Total Expenditure                                      |     |     | 13,998 7 1                |
| To Balance ... ..                                      |     |     | 20,071 6 7                |
|                                                        |     |     | Total Rs. ... 34,069 13 8 |

## NO. 2.

*with the Asiatic Society of Bengal.***Cr.**

|                                |     |     |       |     |             |
|--------------------------------|-----|-----|-------|-----|-------------|
| By Balance from last Report .. | ... | ... | ..... | Rs. | 21,408 13 8 |
|--------------------------------|-----|-----|-------|-----|-------------|

**BY CASH RECEIPTS.**

|                            |     |     |     |           |
|----------------------------|-----|-----|-----|-----------|
| Government allowances      | ... | ... | Rs. | 9,000 0 0 |
| Publications sold for Cash | ... | ... | ... | 811 15 3  |
| Advances recovered         | ... | ... | ... | 38 15 0   |
| Interest on Investments    | ... | ... | ... | 824 0 0   |

---

10,674 14 3

---

**BY PERSONAL ACCOUNT.**

|                 |     |     |     |            |
|-----------------|-----|-----|-----|------------|
| Sales on credit | ... | ... | ... | 1,953 10 9 |
| Miscellaneous   | ... | ... | ... | 32 7 0     |

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1,986 1 9

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12,661 0 0

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Total Rs. ... 84,069 13 8

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

Andited.

BROWNE, & LOVELOCK,  
*Chartered Accountants.*

**STATEMENT**  
*Sanskrit Manuscript Fund in Account*

---

**Dr.**

To Balance from last Report...      ...      ...      ....      Rs.      180 10 6

**TO CASH EXPENDITURE.**

|                          |     |     |     |     |           |  |            |
|--------------------------|-----|-----|-----|-----|-----------|--|------------|
| Salaries                 | ... | ... | ... | Rs. | 1,328 8 0 |  |            |
| Travelling expenses      | ... | ... | ... | ... | 86 3 0    |  |            |
| Printing                 | ... | ... | ..  | ... | 513 2 0   |  |            |
| Postage                  | ... | ... | ... | ... | 0 14 0    |  |            |
| Commission               | ... | ... | ... | ... | 4 12 0    |  |            |
| Contingencies            | ... | ... | ... | ... | 8 3 6     |  |            |
| <b>Total Expenditure</b> |     |     |     |     |           |  | 1,941 10 6 |
| To Balance ...           |     |     |     |     |           |  | 1,120 11 0 |
| <b>Total Rs. ...</b>     |     |     |     |     |           |  | 3,243 0 0  |



## NO. 3.

*with the Asiatic Society of Bengal.*

Cr.

## BY CASH RECEIPTS.

|                            |     |     |     |       |   |   |
|----------------------------|-----|-----|-----|-------|---|---|
| Government allowances      | ... | ... | Rs. | 3,200 | 0 | 0 |
| Publications sold for Cash | ... | ... | ... | 8     | 0 | 0 |
| Interest on Investments    | ... | ... | ... | 12    | 0 | 0 |
|                            |     |     |     | <hr/> |   |   |
|                            |     |     |     | 3,220 | 0 | 0 |
|                            |     |     |     | <hr/> |   |   |

## BY PERSONAL ACCOUNT.

|                             |       |     |     |           |   |   |
|-----------------------------|-------|-----|-----|-----------|---|---|
| Publications sold on credit | ...   | ... | ... | 23        | 0 | 0 |
| Total Income                | <hr/> |     |     | 3,243 0 0 |   |   |

|               |       |     |
|---------------|-------|-----|
| Total Rs. ... | <hr/> |     |
|               | 3,243 | 0 0 |
|               | <hr/> |     |

F. W. PETERSON,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

Audited.

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*Chartered Accountants.*

# STATEMENT

## *Personal*

Dr.

To Balance from last Report ... .. Rs. 3,836 0 8

TO CASH EXPENDITURE.

Advances for purchase of Sanskrit MSS., postage of Books

|                                     |     |        |   |      |
|-------------------------------------|-----|--------|---|------|
| to Members, &c. ... ..              | Rs. | 458    | 3 | 3    |
| To Asiatic Society ... ..           |     | 9,916  | 8 | 0    |
| To Oriental Publication Fund ... .. |     | 1,986  | 1 | 9    |
| To Sanskrit Manuscript Fund ... ..  |     | 23     | 0 | 0    |
|                                     |     | 12,383 |   | 13 0 |

Total Rs. ... 16,219 13 8

## NO. 4.

*Account.*

## Cr.

|                                     |                    |
|-------------------------------------|--------------------|
| By Cash receipts ... ..             | Rs. 10,978 3 6     |
| By Asiatic Society ... ..           | ... 1,108 12 5     |
| By Oriental Publication Fund ... .. | ... 48 12 0        |
|                                     | <hr/> 12,135 11 11 |

| By Balances.                       | Due to the Society. |    |    | Due by the Society. |    |     |
|------------------------------------|---------------------|----|----|---------------------|----|-----|
|                                    |                     |    |    |                     |    |     |
| Members ... ..                     | 3,773               | 12 | 9  | 167                 | 3  | 4   |
| Subscribers to publications ... .. | 65                  | 1  | 6  | 24                  | 10 | 0   |
| Employees ... ..                   | 180                 | 0  | 0  | 250                 | 0  | 0   |
| Agents ... ..                      | 395                 | 8  | 10 | ...                 | .. | ... |
| Miscellaneous... ..                | 306                 | 4  | 6  | 194                 | 12 | 6   |
|                                    | 4,720               | 11 | 7  | 636                 | 9  | 10  |

4,084 1 9

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 Total Rs. 16,219 13 8
 

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F. W. PETERSON,  
 Honorary Secretary and Treasurer,  
 Asiatic Society of Bengal.

Audited.  
 BROWNE & LOVELOCK,  
 Chartered Accountants.

## STATEMENT

### *Invest*

---

**Dr.**

|                             |        | Nominal.                   | Actual.       |
|-----------------------------|--------|----------------------------|---------------|
| To Balance from last Report | ...    | Rs. 1,58,800 0 0           | 1,58,279 12 9 |
| To Cash                     | ... .. | ... 1,000 0 0              | 991 8 11      |
|                             |        | Total Rs. ... 1,59,800 0 0 | 1,59,271 5 8  |

## STATEMENT

### *Trust*

---

**Dr.**

|                                     |        |               |             |
|-------------------------------------|--------|---------------|-------------|
| To Servants' Pension                | ... .. |               | Rs. 14 13 6 |
| To Balance (Servants' Pension Fund) | ... .. | ... ..        | 1,031 3 10  |
|                                     |        | Total Rs. ... | 1,046 1 4   |

## NO. 5.

*ments.*

---

**Cr.**

|                      | Nominal.            | Actual.             |
|----------------------|---------------------|---------------------|
| By Balance ... ..    | Rs. 1,59,800 0 0    | 1,59,271 5 8        |
| <b>Total Rs. ...</b> | <b>1,59,800 0 0</b> | <b>1,59,271 5 8</b> |

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*Chartered Accountants.*

## NO. 6.

*Funds.*

---

**Cr.**

|                                    |                  |
|------------------------------------|------------------|
| By Balance from last Report ... .. | Rs. 1,006 1 4    |
| By Interest on Investments ... ..  | 40 0 0           |
| <b>Total Rs. ...</b>               | <b>1,046 1 4</b> |

F. W. PETERSON,  
*Honorary Secretary and Treasurer,*  
*Asiatic Society of Bengal.*

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**BROWNE & LOVELOCK,**  
*Chartered Accountants.*

## STATEMENT

*Cash.*

---

| Dr.                          |     |     |                          |
|------------------------------|-----|-----|--------------------------|
| To Balance from last Report  | ... | ... | Rs. 3,076 0 6            |
| <b>RECEIPTS.</b>             |     |     |                          |
| To Asiatic Society           | ... | ... | Rs. 6,320 2 9            |
| To Oriental Publication Fund | ... | ... | ... 10,674 14 3          |
| To Sanskrit Manuscript Fund  | ... | ... | ... 3,220 0 0            |
| To Personal Account          | ... | ... | ... 10,978 3 6           |
| To Trust Funds               | ... | ... | ... 40 0 0               |
|                              |     |     | Total Rs. ... 34,309 5 0 |

## STATEMENT

*Balance*

---

| Dr.                 |     |     |                            |
|---------------------|-----|-----|----------------------------|
| To Cash             | ... | ... | Rs. 1,451 13 10            |
| To Personal Account | ... | ... | ... 4,084 1 9              |
| To Investments      | ... | ... | ... 1,59,271 5 8           |
|                     |     |     | Total Rs. ... 1,64,807 5 3 |

## NO. 7.

## Cr.

| EXPENDITURE.                 |     |            |     |                          |
|------------------------------|-----|------------|-----|--------------------------|
| By Asiatic Society           | ... | ...        | ... | Rs. 15,501 7 11          |
| By Oriental Publication Fund | ... | ...        | ... | 13,949 11 1              |
| By Sanskrit Manuscript Fund  | ... | ...        | ... | 1,941 10 6               |
| By Personal Account          | ... | ...        | ... | 458 3 3                  |
| By Investments               | ... | ...        | ... | 991 8 11                 |
| By Trust Funds               | ... | ...        | ... | 14 13 6                  |
|                              |     | By Balance | ... | 1,451 13 10              |
|                              |     |            |     | Total Rs. ... 34,309 5 0 |

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*Asiatic Society of Bengal.*

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 BROWNE & LOVELOCK,  
*Chartered Accountants.*

## NO. 8.

*Sheet.*

## Cr.

|                              |     |     |     |                        |
|------------------------------|-----|-----|-----|------------------------|
| By Asiatic Society           | ... | ... | ... | Rs. 1,42,583 15 10     |
| By Oriental Publication Fund | ... | ... | ... | 20,071 6 7             |
| By Sanskrit Manuscript Fund  | ... | ... | ... | 1,120 11 0             |
| By Trust Funds               | ... | ... | ... | 1,031 3 10             |
|                              |     |     |     | Total Rs. 1,64,807 5 3 |

F. W. PETERSON,  
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*Asiatic Society of Bengal.*

Audited.  
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*Chartered Accountants.*











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