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JOURNAL

THE ASIATIC SOCIETY

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THE ASIATIC SOCIETY

OF

BENGAL.

VOL. VI.

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EDITED BY

JAMES PRINSEP, F. R. S.

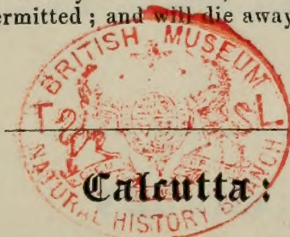
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OF NATURAL SCIENCES OF PHILADELPHIA ; OF THE
PHILOSOPHICAL SOCIETY OF GENEVA ; OF
THE ALBANY INSTITUTE, &c.

VOL. VI.

JANUARY TO DECEMBER,
1837.

“ It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science, in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta ; it will languish, if such communications shall be long intermitted ; and will die away, if they shall entirely cease.”

SIR WM. JONES.



PRINTED AT THE BAPTIST MISSION PRESS CIRCULAR ROAD.

SOLD BY THE EDITOR, AT THE SOCIETY'S OFFICE.

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VOL. VI.—PART I.

JANUARY TO JUNE,
1837.

“ It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science, in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta ; it will languish, if such communications shall be long intermitted ; and will die away, if they shall entirely cease.”

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PREFACE.

WE have the pleasure of closing this sixth volume of our Journal with an unexpected announcement:—the last steam packet has brought out instructions from the Honorable Court of Directors to the Government of India to “subscribe in their name for FORTY copies of the Journal of the Asiatic Society from the commencement of its publication !” We forbear to comment upon an act of liberality by which we shall personally be such a gainer, but which we have neither directly nor indirectly solicited. We can easily imagine to whose friendly influence we are indebted for it, and we hope he will accept our acknowledgments. Our principal difficulty will be how to meet the wishes of the court ; for of our early volumes not a volume is now to be procured ! We must seriously consider the expediency of a reprint, for we have even heard it whispered that an American edition was in contemplation, and such a thing cannot be deemed impossible when we find the Philadelphians undertaking to rival us of Calcutta in printing (and that without government support) a Cochinchinese dictionary* !

Of local support we have lost nothing by the measure we reluctantly adopted at the beginning of the year, of raising the price of the journal from one to one and a half rupee per number. Our list is fuller than ever, and our balance sheet of a much more promising aspect.

* M. P. ST. DUPONCEAU thus writes to M. JACQUET of Paris: “J’ai maintenant le plaisir de vous informer que la Société philosophique Américaine vient d’ordonner à ses frais deux dictionnaires donnés à Mr. WHITE par le R. de MORRONE, ils vont être publiés dans un volume des mémoires de son comité d’histoire et de littérature, étant trop volumineux pour faire partie de ses Transactions philosophiques.

PAYMENTS.				RECEIPTS.			
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To balance due 1st January, 1,304	2	11		By collections this year, ..	3,455	2	8
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To engravings and litho- graphs,	910	0	0	By shop sales, ..	280	13	6
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	7,933	0	8		7,933	0	8
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Add former balance, ..	2,488	10	6				

The deficiency, supposing all to be recoverable, is 1,349 13 1, or almost precisely what it was last year; so that our present price exactly pays the expenses of publication.

The bulk of the volume has gone increasing at the usual rate, and instead of eight hundred pages, we have now risen to eleven hundred, with sixty plates; too much to be conveniently bound up in one volume. We have therefore provided separate title pages to enable those, who so prefer, to divide the annual volume into two parts with an index, common to both, at the conclusion of the second part.

The prominent subject of public discussion (to imitate the order of preceding prefaces) as far as the Asiatic Society is concerned, has been THE MUSEUM,—the memorial to the local government—now under reference to the Court of Directors,—suggesting that the Society's collection of antiquities and natural history should form the nucleus of an extensive national establishment, in the present day almost “an essential engine of education, instructive alike to the uninformed, who admires the wonders of nature through the eye alone, and to the refined student who seeks in these repositories what it would be quite out of his power to procure with his own means.” It is to be hoped that this appeal to the court will not share the fate of the oriental publication memorial of 1835, which is still unacknowledged; but that we shall soon have an answer embracing the united objects of the Society's solicitude, and enabling her to advance boldly in her schemes to secure for herself, and for the British name the glory of placing ‘India physical, moral, and historical,’ upon the records of literature. What could be adduced as a more convincing ‘argumentum’ (*ad ignorantiam* dare we say?) than the fact that at this moment a French gen-

tleman of fortune well grounded in Sanskrit and other oriental studies at Paris, is come to Calcutta, 'about to retrace the steps of the French naturalists DUVAUCEL and JACQUEMONT in the interest of the antiquarian, as they travelled in that of the physical sciences.' He contemplates exploring *Gaur*, *Patiliputra*, *Magadha*, *Mithila*, *Kási*, *Ayudhya*, *Nipál*, *Kemaon*, the *Panjáb Affghanistán*, *Tibet*; then the *Jain* provinces, as they may be called, of *Márwár* and *Málwá*, and finally the cave antiquities of Western India*.

We wish M. THEROULDE every success, we proffer him every aid; yet we do so not without a blush that any thing should be left for a foreigner to explore! India, however, is large enough for us all to run over without jostling, and we cannot allow that inactivity is at the present moment a reproach against our Society or our governors. We have expeditions in *Cashmir*, *Sinde*, *Rhotán*, *Ava*, *Maulmain*, all well provided with scientific adjuncts, and contributing to our maps, our cabinets, and our commerce. Our Societies were never more vigorous. The Agricultural of Calcutta is become exceedingly active. The Geographical of Bombay has opened the field with an interesting volume and a journal of proceedings; and in science we have to boast of the brilliant progress of experiment and magnetic discovery due to one whom we should be happy at having enlisted among our own members. With his colleagues of the Medical College,

* We cannot omit to notice here another laudable demonstration of the greater honor that awaits literary merit at Paris than in London—making full allowance for the proverbial truth that a prophet must seek honor out of his own country. We have just learnt that the French Government has ordered a gold medal to be struck for, and the decoration of the Legion of Honour to be bestowed on Mr. B. H. HODGSON, in return for the valuable donation of Sanskrit manuscripts presented by him to the Asiatic Society of Paris,—and in token of their appreciation of the great services he has rendered to oriental literature. Neither in this case is the reward blindly given, nor the present disregarded; for we know that the Sanskrit scholars of Paris have already dipped profoundly into the contents of the Nipalese Buddhist volumes, and in a short time we may expect a full analysis of them. As a comment on this announcement we may add that similar donations more extensive and more valuable were long since presented by the same party to the Royal Asiatic Society and to the College of Fort William, and that (with exception of the Tibetan portion so well analysed by M. CSOMA) they remain as yet sealed books.

Professor O'SHAUGHNESSY has drawn off to their own valuable publication, the subjects of chemical and physical interest to which we should otherwise have felt ourselves blameable in not offering a conspicuous place. While far different occupations have prevented our passing in review the very promising discoveries in this novel and enticing science, to which their public exhibition has now familiarized the society of Calcutta, the sight of models of magnetic motors and explosive engines worked by gas and spark, both generated by galvanism alone, leads us to suggest that mechanics and the arts should have been included among the proper objects of our projected national museum. An Adelaide gallery would do more to improve the native mind for invention than all the English printed works we would place before them.

But we are as usual wandering from the legitimate objects of a preface. Our own attention has been principally taken up this last year with Inscriptions. Without the knowledge necessary to read and criticise them thoroughly, we have nevertheless made a fortunate acquisition in palæography which has served as the key to a large series of ancient writings hitherto concealed from our knowledge. We cannot consent to quit the pursuit until we shall have satiated our curiosity by a scrutiny of all these records—records as Dr. MILL says, “which are all but certainly established to belong to and to illustrate a most classical and important part of the history of this country.” In our hasty and undigested mode of publication, we are doubtless open to continual corrections and change of views: as a talented and amusing satire on our present predilection for old stones and old coins, in the Meerut Magazine describes it,—‘if not satisfied with one account our readers have only to wait for the next journal to find it discarded and another adopted, as in the case of the Bactro-pehlevi alphabet.’

The learned M. E. BURNOUF in a most interesting article inserted in the *Journal des Savans* for June,* says, alluding to the Burmese inscription at *Gaya* published first in the journal, and

* On the grand work of the Chinese Buddhist traveller FOE KOUÉ KI, lately published at the expense of the French Government, through the labour of three successive editors MM. REMUSAT, KLAPROTH and LANDRESSE. Alas! when shall we in India have an opportunity of seeing these works at any tolerable period after their publication?—ED.

afterwards more completely commented upon by Colonel BURNES,—“ il faut le dire à l'honneur des membres de la Société Asiatique du Bengale, le zèle qui les anime pour l'étude des antiquités de l'Inde est si soutenu et si heureusement secondé par la plus belle position dans laquelle une réunion de savants ne soit jamais trouvée, que les monuments et les textes qu'ils mettent chaque jour en lumière succèdent avec une rapidité que la critique peut à peine suivre.” While they are taken up with an object once published, we are republishing or revising or adding more matured illustration to it. Some may call this system an inconvenient waste of space and tax on readers, who are entitled to have their repast served up in the most complete style at once, and should not be tantalized with fresh yet immature morceaux from month to month. We, however, think the plan adopted is most suitable to an ephemeral journal, which collects materials and builds up the best structure for immediate accommodation, although it may be soon destined to be knocked down again and replaced by a more polished and classical edifice :—*diruit ædificat ; mutat quadrata rotundis*,—may still be said of our journal, without imputing capricious motives to our habit of demolition. We build not fanciful theories, but rather collect good stones for others to fashion, and unless we advertize them from the first, with some hint of their applicability, how should architects be invited to inspect and convert them to the “benefit and pleasure of mankind?”—*hitasukháya manusánam*,—as the stone pillars at *Delhi* and *Allahabad* quaintly express the object of their erection.

Connected with the subject of these remarks we would fain in this place give insertion (and we will do so hereafter) to a valuable series of criticisms on the matter of our last volume contained in M. JACQUET'S correspondence. It is just what we most desire. With the aid of an index, such additional information and correction is as good as if incorporated with the text, to the reader who in future days wishes to ferret out all that has been done on a particular subject ; and we would have all our contributors and readers bear in mind that our journal, though it has long changed its title, does not pretend to have changed its original character of being a mere collection of “Gleanings.”

Calcutta, 1st January, 1838.

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ERRATA.

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IN No. 26, (VOL. II.) OF THE JOURNAL.

- 89, 26, for 'the first specimens,' read 'the finest.'
 93, 29, read 'No. 17 Lymnaea,.... (mihi)—limosa?'
 523, 2, for 'knee,' read 'neck.'
 IN THE JOURNAL FOR 1836.
 733, 7, from bottom, read 'granular matter, the fovilla, and bursts if the immersion is somewhat protracted.'
 812, 21, *dele* the proposed name Cyananthus, which is already appropriated in Dr. WAL LICH's catalogue.
 829, 3, from bottom, for 'interesting,' read 'intimate.'

- 348, 6, after 'to this' insert 'day.'
 350, 44, for '2,3. Hunda,' read '2. Hunda.'
 377, 3, from below, for 'a,' read 'an.'
 384, 9, from below, for 'general,' read 'generic.'
 386, 22, after written insert semicolon.
 387, 4, from below, for 'صور' read 'صور'

- 392, 4, for 'unexpected,' read 'unsuspected.'
 391, 12, for 'Denavāgri,' read 'Devanāgari.'

- 460, 35, for '卐' read '卐'

- 467, 19, for 'Parthia,' read 'Bactria.'
 468, 21, for 'the Sanchi,' read 'at Sanchi.'

The vowel mark *e* has been broken off under the press in a great many passages of the Sanskrit readings of the Delhi inscription in the July number, particularly in the word *mé*.

- 581, 7, after 'by,' insert 'the.'
 583, 5, of notes, for 'nimitat,' read 'nimita.'
 584, 12, ditto *dele* 'm' after 'esa.'
 585, 9, ditto for 'junè,' read 'janè.'
 — 20, ditto for 'participelar,' read 'participular.'
 594, 25, ditto for 'adopting,' read 'adapting.'
 595, 12, ditto for 'nacshatras,' read 'nacshatric.'
 603, 11, ditto for 'dhara,' read 'ādhāra.'—
 604, 4, ditto for 'neat,' read 'next.'
 608, 6, ditto for 'you,' read 'thou.'
 — 19, ditto for 'Kahgur,' read 'Kahgyur.'
 676, 7, for 'this powerful,' read 'his powerful.'
 — 3, from below, for 'ayantaliyam,' read 'anantaliyam.'
 766, 29, for '24° 13½,' read '24 miles: 13½.'
 779, 2, and 5, for 'is,' read 'are.'
 791, 8, for 'Chadaguttassa,' read 'Chandaguttassa.'
 — 17, for 'leaaes,' read 'leaves.'
 794, 7, after quarter, insert full point.
 — 3, from bottom, for 'very,' read 'verb.'
 795, 30, for 'papey,' read 'paper.'
 — last line, for 'वढ' read 'वट.'

- 876, 1, for 'توفى يوم الثلاثاء' read 'توفى يوم الثلاثاء' and in the translation, line 14, for 'WAD,' read 'WALD,' (or WALR,) and for 'Monday,' read 'Tuesday.'

- 884, 7, for 'वसारि,' read 'विसारि.'
 13, for 'आयातरभ्यं,' read 'आपातरभ्यं.'
 19, for 'विशेधि,' read 'विष्माधि.'

- 976, 3, for 'स्फुट,' read 'स्फुट.'
 4, for 'हल्यु,' read 'हल्यु.'
 6, for 'तलो,' read 'तलो.'

- 13, for 'सादिकेनायेनचचो,' read 'सादिकेनायेनचचो.'
 977, 18, for 'जाद्वनेरणा,' read 'जनोद्वरण.'

942, [The extract from the Rekha Ganita differs very materially from the copy in the College here, and the following passage in page 944, after the word भवति in line 7 is required to complete the explanation of the figure:

तद्विशिनर्द्धितयोः रेखयोरन्तरम् सेचरसधिकमेव भवति यचाल्प मन्तरं
 The rest are additions to the preface which it is less necessary to correct.]

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Lt. A. Cunningham des.

J. Prinsep lith.

Actual size of the sculptured letters.

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I.—*Restoration and Translation of the Inscription on the Bhitári Lát, with critical and historical remarks. By the Rev. W. H. MILL, D. D., Principal of Bishop's College, Vice-President, &c. &c.*

The discovery in the *Ghazipur* district, of a pillar with an inscription bearing the same royal names and genealogy as No. 2 on that of *Allahabad*, and continuing the series downward by three or four generations from SAMUDRA-GUPTA, the principal subject of panegyric in both, might be expected to furnish valuable supplementary information on points which that monument left in obscurity. What was the seat and extent of the empire of this GUPTA dynasty, and what was the precise place which the acts and events there described bore in the general history of Northern India in the ages that followed the great eras of VICRAMÁDITYA and SÁLIVÁHANA,—are points on which we might hope to gain more light by a document of this length, than from any others which the progress of antiquarian discovery has yet produced.

The actual information obtained from this inscription, though not altogether destitute of new and interesting particulars relating to the state of India at the time of these kings, as I hope to shew in the few historical remarks subjoined to the reading and translation, is yet far from affording the desired satisfaction on the principal points just mentioned. Except the bare point of succession, and some adventures rather alluded to than related in verses of a somewhat obscure style of composition, the information of a directly historical nature extends little beyond what is obtained from the numismatic researches so ably and indefatigably conducted by our Secretary. Whether a more complete

transcript would much increase our information from this source, may also be doubted. Lieutenant CUNNINGHAM, to whose zeal and activity the inquirers into Indian antiquities are so deeply indebted, states that he made the transcript of this Bhitári inscription under very serious disadvantages : but I am not disposed to attribute to any imperfections arising from this cause, the whole or even the greater part of the errors discoverable in the inscription as now exhibited. Some are certainly chargeable on the sculptor who formed the letters on the pillar, unfaithfully representing the remembered or written archetype before him : and these errors are of sufficient magnitude to induce the probable belief, that others occasioning more perplexity in the deciphering, may have arisen from the same source. From whatever source, however, they proceed, they are capable of being completely detected and amended in all the earlier part of the inscription : viz. the introduction, and the laudatory verses that follow ; but when the verse suddenly ceases or changes, and that in the midst of the stanza, as it does about the middle of the 14th line on the pillar,—it is impossible to say how far errors of the same kind with those before found and corrected, (such as this sudden cessation itself seems to indicate) may have produced the general unintelligibility of the document until we come to its last line, the 19th. With the exception of those four lines and a half, the rest, notwithstanding the indistinctness of many of the letters (indicated by the frequent double readings and occasional lacunæ in Lieutenant CUNNINGHAM's pencil copy), and the more serious difficulty arising from the positive errors above mentioned, may be interpreted with sufficient confidence.

That I may not, however, seem to be gratuitously imputing error to an unknown artist more than twelve centuries dead, with a view to screen the want of skill or accuracy in his living transcribers and interpreters,—I am bound to make good the charge in question in detail, and in a manner that may bring conviction to the mind of every competent scholar. The substitution of श् for स in the word यत्तावसन्तोः (*cohibitis-affectibus-viri*) in the 6th line, is certainly the mistake of the graver, not of his copyist : as is also the equally evident substitution in the following line of the trisyllable पृथिवी *prithivī* for its synonyme पृथ्वी *prithvī* (*the earth*) ; where the latter word of two long syllables is indispensably required by the measure of the verse, indicated as it is by all the preceding and subsequent words in a manner not to be mistaken. These words in their written forms in the ancient character, are too unlike what are severally substituted for them to make this the possible error of a European copyist unacquainted with Sanscrit,—while they are pre-

cisely such mistakes as a Hindu superficially acquainted with that language might most easily commit, if uninspected, in a work like this : the former arising from an ignorant confusion of two words of similar sound, but wholly different etymology as well as meaning,—the latter from total inattention to the rules of metrical harmony. Now the existence of two such glaring errors of the sculptor, uncorrected, renders it highly probable that we should impute to him a large proportion, if not the whole, of the seven following equally manifest errors, (which might in their own nature, the first especially, be as easily committed by the European tracer of a facsimile.)

1. We have in line 8, at the close of the first metrical stanza, one न instead of two in the words ननर्त्त *nanartta* required to close the verse in the *Mánini* measure

ॐ ॐ ॐ ॐ ॐ — — — ॐ — — ॐ — —

with no room whatever in the facsimile for the missing letter.

2. We have in the beginning of line 10, the syllables ह्रिव with not the least space between them—though it is absolutely certain that a न ought to be there, no other syllable making a word with the syllables प्रणिहि preceding, viz. the word *pranikita* from the close of the 9th line.

3. Again in line 10, we have in the facsimile ददे where the measure cannot possibly admit more than the latter of these two syllables, viz. the long दे in प्रदेया.

4. We have in line 12, the syllables मुदिशिदिशि without the least interval in the facsimile between the first and second of them,—though the first is the penultimate of a connected and well defined stanza, and the four following are as evidently the beginning of another : the verse thus requiring, as does the sense independently of the verse, the syllable द्द to close the former stanza with the word *suddham*.

5. We have in line 13, the syllables यः जि in close juxtaposition, not only contrary to the rules of *sandhi*, which in verse are carefully observed, but the former appearing from the preceding syllables to be the penultimate of a *Mánini* line, while the latter appears equally from the following ones to be the *third* syllable of the next : so that there are absolutely required three syllables for which there is no space whatever in the facsimile ; viz. either प्राग्रिपु which I have supplied, or something equivalent, to close one line of the stanza and begin the next.

6. There is no adequate space for the seven syllables required to be supplied at the beginning of the 14th line on the pillar to com-

mence the second line of the stanza there, though the continuance of the same measure is so clearly marked by what precedes and what immediately follows : and

7. What is still more strange, that measure closes with the second line of the stanza ; what follows being as irreducible to metre as to good sense.

With these nine specimens of most evident error in as many lines of the inscription, the two last errors implying the skipping of several syllables at once,—and closed with the fact that there is no integral number of *Mānini* stanzas of four lines, but $5\frac{1}{2}$ only from their commencement in the 7th line of the pillar,—the grounds of conjectural emendation were too slight for its probable application, when the guide of metre was wanting. Accordingly from the 14th to the last line of the pillar, which supplied a stanza in the ordinary *Anustubh* measure, (a space constituting about one quarter of the inscription,) I have been content to groupe together those syllables which formed connected meanings, leaving the rest in which no such connexion appeared, uncopied : and abandoning, with respect to them, a task so much resembling that which the Chaldean king imposed on his magicians,—that of supplying the dream as well as the interpretation.

After this explanation, I proceed to exhibit the text, together with an English version of those three quarters of the inscription which are sufficiently intelligible, beginning with the seven lines of prose, that declare the genealogy and the succession.

Line of
the Lāt.

1. * परोर्विराजोद्धतुः पृथिव्यामप्रतिरथस्य चतुरदधिसलि
2. [ल] स्वदितयागसिद्धि चंद्रवरणेन्द्रान्तक [सेवा] * कृतद्रुम
राशः द्युयशसो २ नेकशो हिरण्यतटप्रदस्य दोराक्षन्नखमेरुहर्तु
3. म्महाराजश्रीगुप्तप्रपौत्तस्य * महाराजश्रीघटोत्कचपौत्तस्य
महाराजाधिराजश्रीचन्द्रगुप्तपुत्तस्य [लिच्छ] विदाहित्रस्य
4. महादेव्यां कुमार[देव्या] * मृत्युन्नस्य महाराजाधिराजश्री
समुद्रगुप्तस्य पुत्तस्तत्परिगृहीतो महादैव्यात्पुन्नदेव्यामु[त्पन्ने]
5. यदाप्रतिरथ * परमभागवतो महाराजाधिराजश्रीचन्द्रगुप्त
स्तस्य पुत्तस्तर्ह्यदानोद्यतो महादैव्या २ भवदैव्याप्सुच्छः परम
6. * [भागव]तमहाराजाधिराजश्रीकुमारगुप्तस्य प्रथितमृदु
7. मतेर्यतावसक्तेः पूगयशसः पृथिवीपतेरुत्तमश्री * [परि] गत
वनमरुर्वी

- [रिपु]प्रजितयशाः पृथ्वीविपत्तीः सुतीर्थं
 [दि]शति नु कमलास्यो गुप्ततन्त्रैकवीरः ।
 8. प्रथितविमल*[कीर्त्तिर्ना]मतः स्कन्दगुप्तः
 सदाश्चितचरितात्मा यो ८ भिन्दते[न]नत्तै ॥
 न विहृतमनदात्मा तान्त्रधीदर्शिकीर्त्तिं
 9. रविनम*पलसाता विक्रमेण क्रमेण ।
 प्रतिदिशमभियोगो दीप्यते येन लब्धो
 ८ नभिमतविजितात्मा प्रोद्यते सो ८ परेन्द्रैः ॥
 10. प्रणिद्धि*तव[सुनातः]संविधानप्रदेया
 विचलितकुललक्ष्मीस्तद्वनायेद्यतेन ।
 क्षितितलनयनीया [ते]न नीतास्य सीमा
 11. दुरप*चयमकाशं वाक्यमित्रं गदित्वा ॥
 क्षितिमचरणपीठ ८ स्यार्पितो वामपादः
 प्रसरमनुपमाद्रौ न्यस्तशस्तः प्ररेमे ।
 12. चिरमनुप[म]*सप्ताद्वेर्त्*पञ्चेन्निरुद्धं
 चरितममलकीर्त्तैर्गीयते यस्य शु[द्धं] ॥
 दिशि दिशि परितस्थु[स्तं]कुमारं मनुष्याः
 13. पितरि दिवमुपे[ते]*विप्रता[पा]मलक्ष्मीं ।
 भुजबलविजितारेथं पितृव्यादयः [प्राग्
 रिपु]जितिपरितोषेन्द्रांतरं साखनेत्राः ॥
 हतरिपुरिव कृष्णो देवकीं मन्यमान
 14. *इदमतदयया] रुक्मांशुरथात्प्रचित्तं ॥
 विप्रकिरूयदेहासुमवनिं बिजेतुर्निजारेर्विद्वेषं कृत्वादीर्थ्यते
 15. ह्यम्भदेवो विस्मितः प्रतिदिन * म - - - - - बद्धवीर्यस्य
 16. सुमार्गदैत्यपराक्रमितुर्म्महावर्त्मकरस्य * शत्रुपशरानन्यस्य
 दुःश्रमिणः राजाद्भुतपरमारिरुद्धिप्रख्यापितो - - - - -
 17. विश्रोत्रेऽपि शार्ङ्गध्वनि * - - - - - हतस्य शार्ङ्गिणः
 18. * सदार्चितस्कन्दरुद्र रत्नाकरार्कनेतुः महेशप्रीतगुप्तः - - - -
 19. संततं गेवते मूर्त्तिमिमां यश्चात्र भूपतिः ।
 रुद्रेणार्हाद्यदशै स मतः प्रणयपण्यधोर ॥ इति ॥

Translation.

Of the liberator of the greatest kings, incomparable on the earth,—by whom loads of forest timber are collected for the holocaustic service of INDRA, VARUNA and YAMA by the completion of sacrifices bearing the flavour of the waters of all the four circumambient oceans,—whose glory reaches to the firmament,—who on every side bestows liberally as the

golden-sided mountain (Meru),—by whom Meru himself might be borne aloft in the piercing talons of his mighty arm,—the great grandson of the great king GUPTA,—grandson of the great king GHATOTKACHA,—son of the great king, the sovereign of kings, CHANDRA-GUPTA,—maternal grandson of LIÇCHAVI,—born of the great goddess-like CUMA'RA-DE'VÍ,—the great king, the sovereign of kings, SAMUDRA-GUPTA,—

Of him, when the accepted son was pronounced to be the son of DE'VÍ, daughter of MAHA'DAITYA, the incomparable worshipper of the supreme BHAGAVAT (CRISHNA), the great king, the sovereign of kings, CHANDRA-GUPTA,—then his son, before addicted to illiberality, and a man of great parsimony, was purified by the waters of destiny. Such was the excellent blessedness of the worshipper of the supreme BHAGAVAT, the great king, the sovereign of kings, CUMA'RA-GUPTA, celebrated for his mildness of disposition, and of subdued passions united to accumulated fame,—a blessedness pervading even the forests and desert lands.

Verse.

Having well surmounted the calamities that oppressed the earth, the chief and unique hero of the Gupta race, of face like a lotus, displays the glory of conquest: even he, by name SCANDA-GUPTA of distinguished and spotless renown,—who in the spirit of his own dreadful deeds danced in the fierce dance, (SIVA-like after his vengeance for SITA's death.)

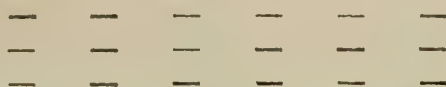
Possessed of a clear insight into the profound wisdom of the Tantras, with a spirit of unceasing silence (on their incommunicable mysteries—and in accordance with their precept and discipline) mangling the flesh of the refractory in successive victories;—he by whom their challenge to battle being accepted and answered, forms a splendid spectacle in every quarter of the earth,—is declared even by alien princes to be one whose mind could not be shaken by sudden and unexpected calamity.

For afterwards by him to whom the keeping of his treasure was committed,—the boundary which was given as a sacred deposit, and worthy to be extended to the extremities of the earth—was treacherously taken away, and the prosperity of the family removed from it,—(even by him the minister aforesaid) coveting the wealth of that family, having previously professed much attachment in words, but destitute of the light (of truth), and followed by calamitous defection.

Yet (having conquered) the land, his left foot was fixed there on a throne yet untrodden by mortals, and having obtained excellent room, and laid by his weapons, he reposed from war on his (inaccessible) mountain. His pure and noble exploits, the exploits of a man of unspotted fame, although long opposed by the kings of the excellent seven hills, are now sung even by them.

In every region did men surround that young prince, when his father had gone to heaven, as one who had attained most illustrious prosperity: whom his father's brother and the other chiefs did first (thus surround, hailing him) as their new sovereign, in the midst of the joy of conquest, with tears in their eyes.

May he who is like CRISHNA still obeying his mother DE'VAKÍ, after his foes are vanquished, he of golden rays, with mercy protect this my design.



Whatever prince in this place perpetually worships this sacred image, is considered by RUDRA (SIVA) himself as one whose understanding is ennobled and rendered praise-worthy by this affectionate devotion, even in the land of ARHA (INDRA) and the other celestials.

Remarks on the above Inscription.

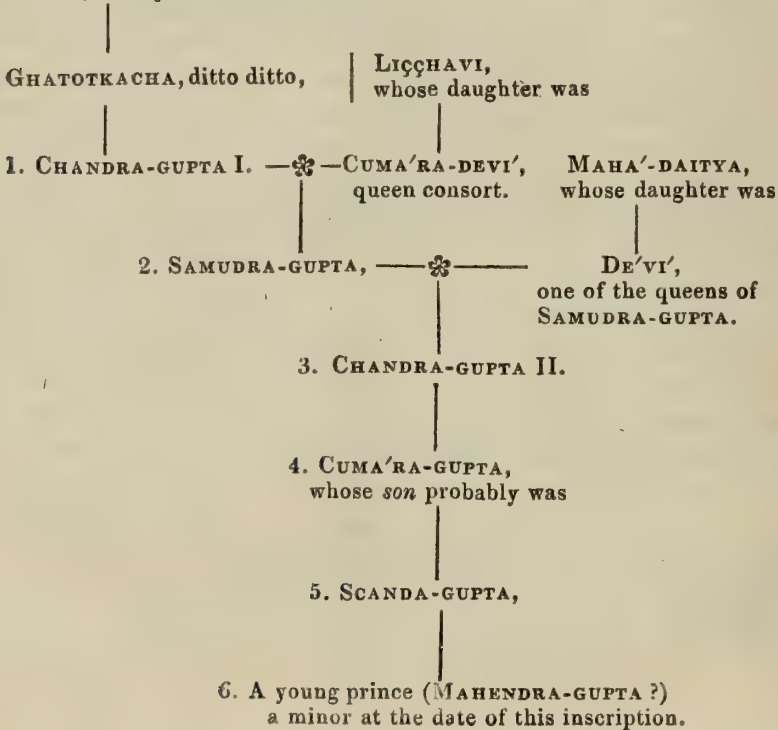
The parentage of SAMUDRA-GUPTA son of CHANDRA-GUPTA, which closed the *Allahabad* inscription, forms in nearly the same words the beginning of the present; and his panegyric which pervaded the earlier monument, is the leading subject in the prose part of this. The first new fact is the designation of his son and successor, CHANDRA-GUPTA the second: whom it seemed most obvious on the first reading of the names* to identify with the expected son and heir of the 18th line of the pillar of *Allahabad*, the offspring of SAMUDRA-GUPTA and his principal queen the daughter of the proud princess SANHÁRICÁ. This identification, however, is removed by the terms of the inscription itself: this son does not succeed by right of primogeniture, but as peculiarly selected (*parigrihita*) on account of his eminent virtues from the rest of the family or families of the polygamist king, and is the offspring not of SANHÁRICÁ's daughter, but of the daughter of a prince named MAHÁDAITYA. The son and successor of CHANDRA-GUPTA II. is CUMÁRA-GUPTA, who is represented as having been a very unprincely character at the time of his father's adoption as heir to the throne; but having been disciplined by some unnamed fortune, becomes on his own accession to the throne, an emulator of the mild virtues and the *Vaishnava* devotion of his parent. The next king is SCANDA-GUPTA, who may be most probably supposed to be the son of his immediate predecessor CUMÁRA-GUPTA: but on this point, the verse which here takes the place of the more narrative prose, is unfortunately silent. We only hear of his distinguished fame as a warrior: and that his piety, congenial with his acts, does not take the same turn with that of his two nearest predecessors, of devotion to VISHNU the Preserver, but attached itself to the opposite system now so prevalent in this part of India, the deep, mysterious and sanguinary system of the Tantras. After the conquest and slaughter of many opposing kings, we hear

* See p. 644 of volume V.

of his eventual triumph over a more formidable enemy than all, a treacherous minister, who for a time succeeds in dispossessing him of his kingdom. After vanquishing, however, the rival monarchs of the seven hills, and resting peacefully on his laurels in his inaccessible mountain throne, (localities which carry us away from the immediate vicinity of the Ganges, but whether towards the north or Central India we have no means of determining,) this worthy worshipper of SIVA and DURGA ascends to heaven: and his brother and the other chiefs, with mingled feelings of grief and affectionate allegiance, proclaim his young child the heir to his father's crown and conquests. This youth is described as obedient to the queen dowager his mother, as was CRISHNA to his mother DE'VAKI'; but the part of the inscription that proceeds to speak of him is confused and unintelligible; neither does he appear to be once named; unless we conceive some letters of line 18 to give his name thus: MAHESA-PRITA-GUPTA, (*the Gupta attached to Siva, or beloved by Siva.*) He is probably the MAHENDRA-GUPTA whose name occurs in several of the newly discovered coins of this dynasty.

The royal family of the Guptas, therefore, as adapted to the time of this inscription, stands as follows; the Arabic numerals denoting sovereigns, or those to whom the prefix *Maharāja Adhirāja* belongs, in the order of their succession.

GUPTA, a Rāja of the Solar line.



One remarkable fact, learnt solely from this inscription, is the prevalence at the time of the Gupta dynasty, of the two opposite sectarian forms of later Hindu worship: that of the exclusive devotees of VISHNU on the one hand, whose favorite authority is the celebrated poem (probably inserted among the Puránas by the comparatively recent grammarian VOPÉDEVA) called the *Srímád Bhágavata*: and that of the worshippers of SIVA and his female energies on the other, whose text books are those singular compounds of Cabalistic mystery, licentiousness and blood, the Agamas or Tantras.—The princes CHANDRA-GUPTA and CUMA'RA-GUPTA are expressly commemorated as belonging to the former class, and SCANDA-GUPTA as an adherent of the latter. And here I must recall an observation that I hazarded when commenting on the *Allahabad* inscription, (J. A. S. vol. iii. p. 268,) that the worship of the Saktis, with its existing mysteries and orgies, was most probably unknown in India at the date of that monument. The terms in which that species of devotion is spoken of about a century after, in the second* of the metrical stanzas in the present *Bhitárl* inscription, shews that the same system was even then dominant, and sufficiently powerful and seducing to enlist kings among its votaries. And while this (if I am correct in supposing the age of the Gupta dynasty to be somewhere between the 1st and 9th centuries of our era), may be among the earliest authentic notices of that mode of worshipping BHAIRAVA and CÁLI',—the mention of it at all furnishes an additional proof to my mind of the impossibility† of referring these monuments to the earlier age of CHANDRA-GUPTA MAURYA, or that of ALEXANDER the Great, and the century immediately following.

A far more plausible hypothesis is the identification of this Gupta dynasty, with that which is mentioned in the prophetic-historical part of the Vishnu-Purána, (Book iv. chap. 24,) as arising in this precise tract of country, contemporaneously with other dynasties in different parts of India, during the turbulent period that followed the extinction of the last race of Indian sovereigns that reigned in *Magadha*, and the irruption of Sacæ and other foreign tribes from the north-west. The dominion of the Guptas is there said to include the great city of *Prayága* on the confluence of the Ganges and Jumna, where their principal monument is now found, as well as the yet more sacred city of *Mathurá* on the latter river, and the less known names of *Padmávatí* and *Kánti-purí*, (probably near the site of our present *Cawnpore* :) it is also described as extending down the Ganges to

* See Note A.

† See Note B.

Magadha or *Behar*, where one *VISVA-SPHATIKA* (or *VISVA-SPHURJI*, of the old race of *Magadha* sovereigns) had extirpated the existing race of *Xattriyas*, and set up other low castes, together with *Bráhmans*, in their stead; as I read in two MSS. copies* of the *Vishnu-Purána*, the words of which are

मागधायां तु विश्वस्फटिकसंज्ञो न्यान्वर्णान्करिष्यति कैवर्त्तयदु
पलिन्द ब्राह्मणान् राज्ये स्थापयिष्यति। उत्साद्याखिलक्षत्रजातीर्नवना
गाः पद्मावत्यां कान्तिपुर्यां मथुरायामनुगंगा प्रयागं मगधा गुप्ताश्च
मागधान् भोक्ष्यन्ति।

“In the country of *Magadha*, one named *VISVA-SPHATIKA* shall form and set up in the kingdom other castes, the *Kaivarttas*, *Yadus*, *Pulindas*, and *Bráhmans*: and thus having abolished all the races of *Xattriyas*, shall the nine *Nagas*, and in *Padmávatí*, *Kánti-purí*, *Mathurá*, and on the Ganges from *Prayága*, shall the *Magadhas* and the *Guptas* rule over the people belonging to *Magadha*.”

All these new sets of kings, with the *Naishadhas* in *Calinga*, &c. and the more barbarous races elsewhere, are represented in the *Purána* as ferocious, rapacious and tyrannical men, of little knowledge and no principle, whose rise and progress and fall are to be equally sudden and extraordinary, short-lived, and only nominal observers of religion. The people under their sway, and through the contact of foreign races, will gradually fall into that neglect of caste and other religious observances, that reference of all things to worldly riches and consequent impiety and unrighteousness, that will prepare the way for the tenth and last incarnation of *VISHNU* as *KALKÍ* to restore all things. Thus, soon after the account of their *Guptas*, close the prophetic announcements of *PARÁSARA* to *MAITREYA* of what was to befall the world after him, and with them the 4th Book of the *Vishnu-Purána*.

It is true, that according to the chronology of the *Purána*, as set down minutely in that chapter, we should have the commence-

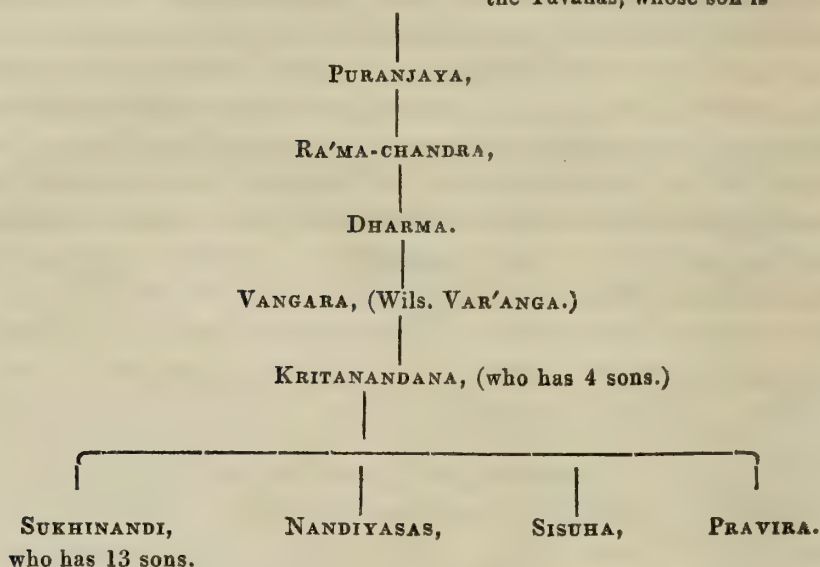
* The valuable English abstract and partial translation of this *Purána* (as of the others) deposited in the Asiatic Society's Library by Professor H. H. WILSON,—is silent on the latter point, the association of the *Guptas* with *Magadhas*, and their dominion in *Behar*: relating their possession of those four cities in the *Doáb*, *Padmávatí*, *Kánti-purí*, *Mathurá*, and *Prayága*, as altogether unconnected with the affairs of *Magadha*, and the extirpation of the *Xattriyas* from that country, with which they are distinctly blended in the Sanscrit passage as given above.

For the further testimony of the *Srímád-Bhágavata*, see Note C.

ment of the reign of these Guptas posterior to SANDRACOTTAS, and consequently to ALEXANDER the Great, by $(137 + 112 + 45 + 456 + 1399 + 300 + 186 =)$ 2635 years,—and therefore as really future to us as to the prophetic Muni and his hearer. But setting aside all other considerations, it is only the four first of the seven component periods of this sum that will appear to an attentive inspection of the Purána itself, to be entitled to the least attention : viz. the spaces assigned respectively to the Maurya, the Sanga, the Kanva and Andhra dynasties of Hindu sovereigns in *Magadha* : of which the name of each individual king is set down, their several numbers 10, 10, 4 and 30 agreeing perfectly with the durations assigned to each race*. But the fifth and sixth periods of 1399 and 300 years have no such catalogues of kings accompanying them, but only a statement that in the former there should rule in succession seven kings of the Abbhra caste, 10 Gardabhiras, 16 Saka or Scythian kings, 8 Yavana or Grecian, 14 Tushára, 13 Munda, and 11 Mauna kings : and in the latter period of three centuries, Paura and 11 other unnamed sovereigns. This enumeration, strongly indicative of the disturbed and semi-barbarous condition of affairs, which caused the suspension of all the ancient records,—and in which synchronous dynasties might easily be mis-stated as successive ones, and the sum of years readily palmed on the Hindu reader, to enhance the antiquity of the classical and heroic ages of the country,—is succeeded, in the last period immediately preceding the rise of the Guptas, by something more resembling the records of earlier times. As this list, occupying the seventh period above mentioned of 186 years, has not yet been published,—(that of HAMILTON in the corresponding period being somewhat different and much more confused,) I will here set it down from my MS. of the Vishnu-Purána.

* These may all be seen, as they stand in this and other Puránas, in p. 100 of Mr. J. PRINSEP's Useful Tables. The accuracy of these lists is strongly confirmed by the collateral testimony of the Chinese travellers in India in the 5th century, whose relation is published in the London Asiatic Journal of July last. Their king of *Kapila*, YUE-GAE, *Beloved of the Moon*, whose ambassador sent presents to China A. D. 423, is (not CHANDRA-NANDA, as the learned translator of that work suspected, but) CHANDRA-SRI', the king immediately preceding PULOMARCHIS, the last of the Andhra dynasty at *Magadha*,—who was reigning at this precise time. This removes the hope entertained by Mr. J. PRINSEP, (to whom I am indebted for the communication of this paper) and myself, that this might prove to be the CHANDRA-GUPTA of the inscription, and makes the latter posterior to him by probably three or four centuries.

VINDHYA-SACTI from Kilakila, who adopts the manners of the Yavanas, whose son is



After whom came 4 Bahukas or Bactrians, 3 Puspamitras, 13 Yadumitras, 7 Mekalas; and in *Kausala* or *Oude*, 9 Naishadhas.

Thus the account of this dynasty, which HAMILTON calls the Bahlic or Bactrian one, terminates in a confusion worse confounded than that from which it emerged. And this statement in the Vishnu-Purána is immediately followed by the passage above quoted respecting the Magadhas and Guptas.

Allowing, however, the least possible duration to the confused periods that followed the subversion of the Andhra dynasty in the middle of the fifth century after Christ, it is scarcely possible to fix the subjects of our present inquiry, the Guptas, higher than the age of CHARLEMAGNE in Europe, if we suppose them identical with the Guptas of the Purána.

NOTE A.

The insertion among the praises of the 5th king SCANDA-GUPTA, of the epithet "a mangler of the flesh of the refractory," (*avinama-palasátá*,) and that in close juxta-position with the attributes of peculiar wisdom, and adherence to a mysterious system of Cabalistic theology,—may appear surprising to persons who have either considered but slightly the genius and tendencies of idolatry, or are unacquainted with this peculiar form of it. To shew how perfectly natural is the juxta-position in the present instance, I cannot give a more generally intelligible proof than in the picture drawn in the metaphysical drama *Prabodha-chandra-udaya*, of a votary of this same Tantric discipline, under the name of SA-UMA-SIDDHÁNTA,—i. e. says the

commentator, a professor of the science of SIVA BHAIRAVA in conjunction with UMA his consort.—I will give the original Sanscrit and Pracrit (the latter spoken by the Buddhist, being his own Pálí,—the former by the other two speakers) with a different version from that of Dr. TAYLOR, distinguishing prose and verse exactly as in the original: premising, that the ingenious author does not intend to give any exaggeration or caricature, but simply to exhibit a model of an existing mode of belief and practice in his time: such as may be traced also, under certain modifications even now; after centuries of Mahomedan and Christian rule have interfered with the free exercise of such homicidal worship.

ततः प्रविशति सोमसिद्धान्तः कापालिकरूपधारी खड्गहस्तः

[परिक्रम्य] नरास्थिमालाकृतचारुभूषणः

प्रशानवासी नृकपालभाजनः ।

प्रश्यामि योगाङ्गनशुद्धदर्शनो

जगन्निधोभिन्नमभिन्नमीश्वरात् ॥

क्षपणकः । एसो काबालिअवदं पुलिसो धारेदि ताणं पुच्छिस्सं

[उपसृत्य] अले काबालिअ गलहड्डुमुण्डमालिअ केलिसे तुअः

सोखमोक्खे ।

कापालिकः । अरे क्षपणक धम्मं तावदस्माकमवधारय ।

मस्तिस्काक्तवसाभिधारितमहामांसाज्जतीर्जुङ्गतां

वज्रौ ब्रह्मकपालकल्पितसुरापानेन नः पारणा ।

सद्यः कृतकठोरकण्ठविगलत्कीलालधारोत्पन्नै

रर्थो नः पुरुषोपहारबलिभिर्देवो महान् भैरवः ॥

भिच्छुः । [कर्णौ पिधाय] बुद्ध बुद्ध अहो दारुणा ब्रह्मचर्या ।

क्षप । अलिअन्त अलिअन्त अहो घोरपावकालिना केनावि विप्पलब्धा

एसो बलाच्चो ।

कापा । [सक्रोधं] आः पाप पाषण्डापसद मुण्डितमुण्ड चण्डालवेश केशो

क्षुच्चक अरे विप्रलम्भक स किल चतुर्दंशभुवनोत्पत्तिस्थितिप्रलय

प्रवर्त्तयिता वेदान्तसिद्धान्तप्रसिद्धविभवो भगवान् भवानीपतिः ।

दर्शयामस्तर्हि धर्मस्यास्य महिमानं ।

हरिहरसुरज्येष्ठश्रेष्ठान् सुरानहमाङ्गये

वियति चरतां नक्षत्राणां रुणध्नि गतीरपि ।

सनगनगरीमम्भःपूर्णां विधाय महीमिमां

कलय सकलं भूयस्तोयं क्षणेन पिबामि तत् ॥

क्षप । अल कावालिअ अदोज्जव भणामि केणावि इन्द्रयालिना अलीअं
इन्द्रयालं दिशिअ विप्ललब्धो सित्ति ।

कापा । आः पाप पुनरपि महेश्वर ऐन्द्रजालिक इत्याक्षिपसि तन्न
मर्घणीयं ते दौरात्थं । तदहमस्य

एतत्करालकरबालनिकृत्तकण्ठ

नालोच्छलदङ्गलबुद्बुदफेणिलौघैः ।

दत्त्वा बलिं डमरुडं कृतिहृतभूत

वर्गाय भर्गमृद्धिणीं रुधिरैर्धिनेमि ॥

[इति खड्गमुद्यच्छति ।]

IN ACT III.

To them, enter SOMA-SIDDHANTA in the guise of a Kápālika (or man of skulls),
with a sword in his hand.

Soma-Sid. (walking about.)

With goodly necklace deck'd of bones of men,
Haunting the tombs, from cups of human skull
Eating and quaffing,—ever I behold
With eyes that Meditation's salve hath clear'd,
The world of diverse jarring elements
Composed, but still all one with the Supreme.

Buddhist. This man professes the rule of a Kápālika. I will ask him what it
is.—(Going up to him.) O, ho! you with the bone and skull necklace, what
are your notions of happiness and salvation?

Soma-Sid. Wretch of a Buddhist! Well; hear what is our religion.

With flesh of men, with brain and fat well smear'd,
We make our grim burnt-offering,—break our fast
From cups of holy Bráhma's skull,—and ever
With gurgling drops of blood that plenteous stream
From hard throats quickly cut, by us is worshipped
With human offerings meet, our God, dread BHAIRAVA.

Bráhma Mendicant, (stopping his ears.) Buddhist, Buddhist, what think you
of this? O horrible discipline!

Buddhist. Sacred Arhata! some awful sinner has surely deceived that man.

Soma-Siddhanta (in a rage). Aha!—sinner that thou art,—vilest of heretics,
with thy shaven crown, drest like the lowest outcasts, uncombed one, away
with thee! Is not the blessed husband of BHAVANI the sole cause of the
creation, preservation, and destruction of the fourteen worlds, and his power
established by the fullest demonstration of the Védant? Let us yet shew
even you the magnificence of this religion.

I call at will the best of gods, great HARI,
And HARA's self and BRAHMA,—I restrain
With my sole voice the course of stars that wander
In heaven's bright vault; the earth with all its load
Of mountains, fields and cities, I at will

Reduce once more to water—and behold

I drink it up.

Buddhist. Alas ! poor Kápálíka, this is just what I said. You have been deceived by some juggler, spreading out false images before you.

Soma-Siddhanta. What, again, thou sinner ! Dost thou dare to call the great MAHESVARA a juggler ? This thy malignity must not be forgiven. Lo, therefore,
 With foaming floods of gore that gush amain
 From throat well severed with this sabre's edge,
 I make my sacrifice to him that calls
 With beat of drum the hosts of creatures after him,
 Dread SIVA—and with these rich ruddy streams
 Delight his consort well, BHAVANI.

(*Draws his sword.*)

[How the hand of the Tantric zealot is arrested from smiting the unfortunate Buddhist,—how he then enters on a psychological defence of his opinions,—how he is then joined by SRADDHA' (or Faith !) in the character of a *Kapalini*, who by her blandishments leads both the Bráhma mendicant and the Buddhist, to deport themselves like Tantrists,—and how they all then join SOMA-SIDDHANTA in a *meditative* dance ;—all this and other wonders may be found by the curious in the drama above cited.]

NOTE B.

In once more expressing the opinion, that the Gupta dynasty of our present monuments is posterior to the Christian era, I am by no means insensible to the new light that Mr. TURNOUR has thrown on the history of SANDRACOTTUS in the extracts he has given from a learned commentary on the *Mahá-wanso*, pp. lxxi—lxxxii. of his very interesting preface to that great historical work. That *some* of my objections to the identity of the two CHANDRA-GUPTAS are removed, or at least greatly weakened, I freely admit : there certainly appears ancient Buddhist authority (for such is apparently the *Atta-kathá* or *Astata-kathá* of the Uttara-vihára priests alleged by the commentator) for making the Mauryas a branch of the Solar race ; utterly inadmissible as is the etymology assigned for that name in the *Tiká* (p. lxxvi.) as well as for the name of SISUNÁGA, ancestor of the Nandas, (pp. lxxii. lxxiii.) It is also very remarkable, in relation to this subject, that the latter prince is there represented as the son of a LIÇÇHAVI Rája, that being apparently the name of a distinguished family in *Magadha* : LIÇÇHAVI being also the name, in the inscriptions of *Allahabad* and *Bhitári*, of the father-in-law of our CHANDRA-GUPTA I. and maternal grand-father of SAMUDRA-GUPTA. Nevertheless, there still appear to me insurmountable objections to identifying SAMUDRA-GUPTA with VINDU-SÁRA, the son and successor of CHANDRA-GUPTA MAURYA on the *Magadha* throne. while a still more evident impossibility is now added of identifying his son, the *Vaishnava* CHANDRA-GUPTA II. of our present monument, with ASOCA, son of VINDUSÁRA, the zealous ad-

herent and propagator of Buddhism, not only in his own dominions of *Magadha*, but the north, east, and south, as far as *Ceylon*. It is needless to pursue the discrepancy of the genealogies further: the *Vaishnava* CUMÁRA-GUPTA and the *Saivya* and *Saktya* worshipper, SCANDA-GUPTA, have nothing in common with the Buddhist descendants and successors of DHARMÁSOKA. Is it not also very possible that with a view to exalt the immediate ancestry of that most revered prince, the priests of the favored religion may have introduced this account of the *Moriya* family, as an offspring of the Solar race,—so discrepant from that which other Indian accounts, as well as Greek and Roman, give of its origin? That the Buddhist priests, notwithstanding their hostility to caste, are not insensible to considerations of this kind, is evident from the care with which, in the *Mahá-wanso* and elsewhere, they inculcate the undoubted royal descent of GAUTAMA BUDDHA.

NOTE C.

The passage above quoted from the Vishnu-Purána seems to have been somewhat differently read by the more modern author of the *Srímád-Bhágavata*,—who here as elsewhere, is apparently only transferring into his own more polished and elaborate verse, the records found in the older Puránic legends. By him the term Gupta, instead of being a proper name, is made an epithet of the *earth* as ruled or *protected* (for so the scholiast SRIDHARA has explained it) by the VISVA-SPHATIKA above mentioned, who is here called VISVA-SPHURJI. The close agreement, as well as occasional discrepancy, of the two authorities, will be easily seen from the following extract (*Bhágavata*, Book xii. chap. 1.)

मागधानां च भविता विश्वस्फूर्जिः पुरंजयः
 करिष्यत्यपरान् वर्णान् पुलिन्दयदुमद्रकान् ॥ २० ॥
 प्रजाञ्चाब्रह्मभूयिष्ठाः स्थापयिष्यति दुर्मतिः ।
 वीर्यवान् क्षत्रमुत्सार्य पद्मावत्यां स वै पुरि ।
 अगुंगामाप्रयागं गुप्तां भोक्ष्यति मेदिनी ॥ २१ ॥

“VISVA-SPHURJI, another PURANJAYA, (i. e. says the scholiast, the best of the descendants of PURANJAYA or RIPUNJAYA, who was king of *Magadha*, B. C. 900,) shall create new barbarian castes, the *Pulindas*, *Yadus* and *Madras*. This ill-minded warrior shall make the greatest part of his subjects to be un-bráhmánical, (or lower than sudras)—and having exterminated the Xattriyas, he shall, in the city of *Padmávatí*, and on the Ganges, as far as *Prayága*, derive tribute from the *protected earth*.”

The words अनुगंगाप्रयाग are explained here by the scholiast to describe the situation of the king's metropolis *Padmávati*, as being situated in the Ganges *above Prayága*, or, as he words it, between *Allahabad* and *Haridvár*. But this explanation is quite inapplicable to the same words as they stand in the Vishnu-Purána, where they immediately follow the mention of *Mathurá*, and where the mention of *Magadha* following induces me to interpret the words "on the Ganges *below Prayága*" or between *Allahabad* and the sea.

II.—*Alphabets of the Tai language. By the Rev. N. BROWN, Missionary in Assam.*

[We are indebted to Capt. F. JENKINS, Political Agent in *Assam*, for kindly engaging Mr. BROWN to throw light upon the *Ahom* and *Khamtí* alphabets, of which it may be remembered Capt. JENKINS two years ago presented to the Society some manuscript volumes then undecipherable for the want of this indispensable key. The *Ahom* letters are stated to be copied from an old book in the author's possession. The brief notice of the language itself, (Mr. BROWN writes to Capt. J.) was gathered from a pandit of the *Jorhát* Rája, whom he employed as teacher for a few months. He did not seem to possess a very perfect knowledge of the *Ahom* language, and he stated that the same was true of the *Ahoms* in general, who for the most part have lost all knowledge of their original tongue.

Captain JENKINS thinks there can be little doubt that the *Ahom* rajas came into *Assam* from the eastward about the beginning of the thirteenth century; and that the immediate cause of their emigration is to be sought for in the breaking up of the Chinese empire by the Moguls,—for at the epoch when CHUKAPHA had fixed himself in *Assam*, KUBLAI KHAN had just established himself in *China*. We may confidently hope that after a little longer residence at *Sadiyá*, Mr. BROWN, who is rapidly extending his acquaintance with the different branches of the *Shyán* language will be induced to favor us with a sketch of the contents of the old *Ahom* chronicles, which, we are given to understand, certainly exist in *Assam*, and of which the volume transmitted by Capt. JENKINS may be a portion.

Capt. JENKINS alludes to a curious fact, communicated by Mr. BROWN, which should be a further inducement to examine their books; namely, that no trace of Buddhism is to be found in the religion of the *Ahoms*. This is a remarkable deviation from the circumstances

of the other *Shyán* families whose literature is but a direct translation of Burmese Buddhism, as their alphabets, the *Shyán*, *Khamtí*, *Láos*, &c., are seen to be mere modifications of the Burmese or *Páli* alphabet.

This fact would seem to argue that the emigration of the *Ahoms* from their own country *Siam*, had taken place prior to the introduction of the Buddhist religion into that country—but how can this be reconciled with the date of *CHUKAPHA*?—ED.]

The Language of the Ahoms.

The *Ahom* is a branch of the *Tai* language, which is spoken, with some variations, by the *Khamtis*, the *Shyáns*, the *Láos*, and the *Siamese*, all of whom designate themselves by the general appellation of *Tai*. Among the *Ahoms*, or that portion of the *Tai* race inhabiting *Assám*, the language is nearly extinct, being cultivated only by the priests, as the ancient language of their religion; while their vernacular and common dialect, as well as that of the people, is *Assámese*. As the *Ahoms* once ruled over *Assám*, it is somewhat surprising that more traces of their language are not to be found in the present dialect of the *Assámese*, which contains very few words of *Tai* origin.

As might naturally be expected, the *Ahoms*, from disuse of their original tongue, have lost many of its peculiar sounds. In conformity with the pronunciation of the *Assámese*, they give to *w* the sound of *b*; and *y*, they pronounce as *j* or *z*. The sound of the French *u*, which is so common in the *Tai*, they change sometimes to *ú* and sometimes to *í*. The *intonations* of their original tongue they have entirely lost; one reason of this undoubtedly is, that these *intonations* were never expressed by the *Ahoms* in writing. The same is at present the case with the *Khamtis* and *Shyáns*, who have no characters expressive of their *intonations*, having, like the *Ahoms*, adopted the *Burman* alphabet, which is inadequate to meet the wants of the *Tai* language in this respect. The *Siamese* characters, on the contrary, represent the tones with the greatest precision.

It is, however, remarkable that the language of the *Ahoms* as pronounced by the priests, corresponds to the *Siamese* with much greater exactness in some respects, than any of the *Shyán* dialects spoken between *Assám* and *Siam*.

1. The sound of *b*, frequent in the *Siamese* and *Láos*, is converted into *m* by all the *Shyáns*, while the *Ahoms* have preserved the regular *b*.

2. The *Siamese* *d* is changed by the *Shyáns* to *l*, and by the *Khamtis* to *n*, but the *Ahoms* give it its correct pronunciation.

3. The same is true of the letter *r*, which the *Shyáns* change to *h*.

4. Where double consonants, as *kl*, *pl*, *kr*, &c. occur at the commencement of a word, as they frequently do in Siamese, the Shyáns and Khamtis, as well as the Láos, soften the pronunciation by omitting the second consonant; but it is preserved by the Ahoms. I will illustrate each of these remarks by a few examples.

Siamese.	Láos.	Shyán.	Khamti.	Ahom.	
1. Bá	bá	má	má	bá	a shoulder.
Bán	bán	mán	mán	bán	a village.
Bín	bín	min	min	bín	to fly.
Bo	bo	mo	mo	bo	a well.
2. Dí	dí	lí	ní	dí	good.
Deng	deng	leng	neng	deng	red.
Doi	doi	loi	noi	doi	a mountain.
Dáu	dáu	láu	náu	dáu	a star.
Düan	dün	lün	nün	dün	the moon.
3. Rak	rak or hak	hak	hak	rak	to love.
Rái	rái	hái	hái	rái	bad.
Ron	ron	hon	hon	ron	hot.
Rú	rú	hú	hú	rú	to know.
Rüa	rü	hü	hü	rü	a boat.
Rüan	rün	hün	hün	rün	a house.
4. Plá	pá	pá	pá	plá	a fish.
Klai	kai	kai	kai	klai	distant.
Klúa	kü	kü	kü	klú	salt.
Plüak	pük	pük	pük	plúk	a husk.

From these circumstances we may conclude that the Siamese and Ahom dialects afford a more correct specimen of the original Tai language, than either the Láos, Khamti, or Shyán; for it is improbable, if the original forms had been simple and easy of enunciation, that they would have been exchanged for others more difficult; but it is perfectly natural that difficult forms should be exchanged for others more simple.

Explanation of the Table.

It is probable that all the alphabets of the Tai, (if we except the Siamese,) were formed from the Burman. The column of Burman letters is merely added for the purpose of comparison. The Ahom, Khamti, and Shyán alphabets each contain eighteen letters, but this number is quite inadequate to express the various sounds of these languages. The Láos alphabet is more perfect: it contains fewer letters, however, than the Siamese. In the above table we observe that the Láos alphabet contains, to some extent, two distinct characters for each letter of the Ahom and Shyán; one denoting the rising, and the other the falling tone*. The rising-toned letters are set first

* The second column of the Láos consonants embrace the second order or the softer sound of each class of the Indian alphabets, *g gh*; *jjh*; *d dh*; *b bh*, &c.: the *gh* only is formed differently from the same letter of the Burman alphabet. We have inserted these letters in the Roman column on the above

in the column ; those on the right hand have the falling tone. Several of the falling-toned letters have no corresponding character for the opposite intonation ; when it is required to express this, an *h* is written above the letter, which raises its tone ; thus,  *ng*,  *n*,  *m*,  *l*, &c. A similar plan is adopted in the Siamese, where the high-toned *h*, is prefixed to other consonants for the purpose of raising their tone.

The pronunciation of the fourth letter in the table is not uniform ; the Siamese give it the sound of *ch*, the Láos nearly the same, while all the Shyáns pronounce it as *st*. The next letter, *chh*, is confounded by the Shyáns with *s*. The character for *ph* is used, by the Ahoms and Shyáns, to express both the aspirated *p* and the sound of *f* ; the Khamtis for the most part confound these two sounds. The Ahoms use the same character for both *d* and *n* ; and also for *b* and *w* ; but the latter sound is changed to that of *b*, whenever it occurs at the beginning of a word.

In the table of vowels we also find the sounds represented more fully by the Láos than by the northern tribes ; though the Láos are still behind the Siamese in expressing the niceties of the language. The sounds resembling the French *u* and *eu*, or the German *ü* and *ö*, are written alike by the Shyáns, though they are perfectly distinguished in pronunciation ; as also the sounds of *ai* and *ái* ; *au* and *áu* ; *eu* and *iü*. The sound *aiü*, which is very common among the Shyáns and Khamtis, does not occur in the Láos. Its place is supplied by *ai*. The long *ó* final of the Shyáns is generally pronounced *óa* or *úa* by the Láos and Siamese. The Shyán character given in the table is that used in the neighborhood of *Ava* ; it is the same, with very slight variations, as that used by the Shyáns of *Mógaung*.

NOTE. At the foot of the alphabetical scheme, lithographed from Mr. BROWN's manuscript, we have inserted the Ahom legend of an Assamese rupee, said to be of CHAKRADWAJA SINHA, who repulsed AURANGZEB's general, and whose reign commenced in 1621*. The sculptured letters differ considerably in form from the written ones, and there is too much uncertainty for us to attempt applying the Roman character to it, without a native at hand to correct the reading.

We have also given in the two following plates, facsimiles on a reduced scale of the commencement of the manuscript volumes in the grounds ; but the pronunciation must of course, under the author's explanation, be restricted to the sounds of the first column *k kh* ; *ch chh* ; *t th* ; *p pñ*, &c. ; with the rising or falling intonations respectively.—ED.

* See page 118 of Chronological Appendix.

from a manuscript of 10 pages, in the Asiatic Societys library.

[illegible]

full size.

Full size.

f o o o o o o o o o o o .

from a manuscript volume presented to the Society by Capt. F. Jenkins.

1835

[illegible]

Thom Alphabet prefixed to the same volume.

၆ က: ka စ khá ဂ gá ခ ghá င ngá တ tá ထ thá
 နှာ da ဇာ shá နာ ná ပ há ဖာ fhá ဗာ bá ဖာ bhá
 ဗာ má ဇာ chá နာ sá ပာ yá ဖာ já နာ nya ဇာ rá
 နာ lá နာ á နာ há

◉ကန် ကိန် ကုန် ကွန် ကုန်◉ ဖိပ် ဖိပ် ဖျပ် ဖျပ် ဖို့ပ်◉

ken kin kun kōn keun rap ri/p ru/p rō/p reu/p

က ကံ ကိ ကို ကု ကွ ကျ ကို ကံ ကံ ကံ ကံ ကံ ကံ
a á i é u ú ò eu è ě ̄ ai au ä iw oi ang

The first line in roman letters :

(AUM?) pin-nga-yi-mew-ran-kō-taū-phá-pai mí nin : paímí leup

Khamtí and Ahom characters, above alluded to as presented by Captain JENKINS. The former commences with an invocation to *Buddha* in the Páli language and Burmese character, but there are several grammatical errors committed by the Khamtí copyist—the line should run

နမောတဿ ဘဂဝတော အရဟတော သမ္မာသမ္ဗုဒ္ဓဿာဝိ
ဇယတုသဗ္ဗမဂ္ဂလံ

Namotassa bhagavato arahato sammá sambuddhassa ití jayatu sabba mangalam.

Praise to the divine object of worship, the omniscient Buddha; through whom may all happiness conquer.

We hope that Mr. BROWN will enable us to insert a translation of the Khamtí and Ahom texts in a future page.—ED.

III.—*Remarks on the Silk Worms and Silks of Assam.* By Mr. THOMAS HUGON, Sub. Asst. Nowgong.

[Communicated by Capt. F. JENKINS, Pol. Agent in Assam.]

The following worms producing silk are found in *Assam*. The mulberry worm (large and small), the *eria*, the *mooga*, or *moonga*, the *kontkuri*, the *deo mooga*, and the *haumpottonee*. The five last are indigenous to the country, but there are no reasons to suppose that the first is likewise so. The mulberry is scarce, and none is found in the wild state. The time of the introduction could be, perhaps, ascertained in some of the Assamese *booronjees* or chronicles—(which I was unable to procure immediately to ascertain the point); some of them extending several centuries back—as the Assamese got religious instructors from *Bengal*, it is very probable they also got from there the mulberry tree and worm. The use of the silk being confined to the *rāja* and *grandees*, and the rearing of the worm to one caste, are additional proofs that its introduction did not precede that of Hinduism—the *joogeas* (the caste alluded to) must evidently have come up with it; the Assamese refuse to rear the silk worm, but not having this objection to the other worms would be one proof of the latter being indigenous, were it doubtful.

Mulberry worm.—The management of these worms in *Assam* is nearly similar to what it is in *Bengal*. They are reared within doors, and require the same care and attention as are bestowed on them there; a separate hut is used, which is fitted with bamboo stages with a passage between them and the outer wall—these huts are built north and south with a single door on the east side; this is generally the case, but by no means a fixed rule amongst the Assamese; only one female of the family goes into the house, and previous to doing

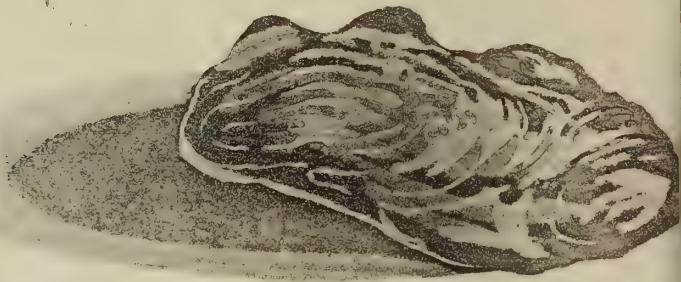
it alway washes her hands and feet. With the Assamese the idea prevails as in other parts, that the eye of the stranger is hurtful—their account of this is, that the worms, fancying the stranger is criticising them, get sulky, abstain from food and die.

The large and small mulberry worms are reared in *Assam*. I will describe the rearing of those which produce only one bund a year, (the larger,) they being more in use than the others in this district. It will be sufficient to shew how far the process assimilates to that followed in *Bengal* and other parts. The moths are made to deposit their eggs on pieces of cloth—these are packed up with the household clothing; when the time of hatching approaches (December), they are taken out and exposed to the air; when the worms are hatched they are fed the first three or four days on the tender leaves cut up, in new earthen pots; then on a bamboo tray. After the first moulting they are removed to the *mutchang* (*machán*) or stages. When they are about beginning to spin, they are put on bamboo trays fitted up with pieces of matting fixed perpendicularly at intervals of two inches: these in the first afternoon are exposed for half an hour to the side where the sun is shining, and afterwards hung up in the house. After leaving as many as are required for breeding, those that are to be wound off, after having been exposed to the sun for three or four days, are put over a slow fire in an earthen vase full of water. One person winds off the silk with an instrument made of three pieces of stick joined together thus, the perpendicular one is held at one end with the right hand, and the left directs the thread over the cross bars—taking care in doing this to make it rub against the fore-arm to twist it—whilst another person attends to the fire and the putting on new cocoons. When a sufficient quantity for a skein has thus accumulated it is taken off the cross bars.

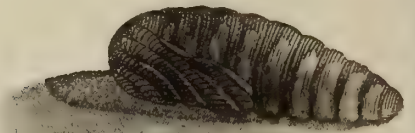
There are hardly any plantations of mulberry in *Assam*, on such a scale as to be worth mentioning; a few men of rank have small patches of it, sufficient to produce silk for their own use;—the few ryuts that sell the silk generally have not more than a seer to dispose of in the year,—the produce of a few plants round their huts or in the hedges of their fields. The leaves are not sold as in *Bengal*, and when a ryut's own supply fails, he obtains it from neighbors who have a few trees merely for the fruit. The worms are reared by *joogees* alone, people of an inferior caste:—those of the highest can cultivate the plant and do all the out-of-door work—but none but a *joogee* can, without degradation, attend to the worms or touch the silk whilst reeling. As the same prejudice does not exist in *Ben-*



Cocoon



Chrysalis



gal, it must have been kept up purposely by the despotic rulers of the country, after mulberry cultivators were introduced, to ensure the use of the silk being confined to themselves and their courtiers—a selfishness which may be observed in many of their rules and prohibitions: this alone would have been a bar to the extension of the cultivation of the mulberry in *Assam*, were there not already greater facilities of obtaining silk from the *mooga* and *eria* worms. No mention is made of silk in the returns of the Hydra chowkey, I do not think half a maund of it altogether is exported in any shape—the price of it is eight or ten rupees a seer, but it is not readily procurable. Mr. Scott, a few years ago, introduced from *Rungpoor*, reelers, reels and plants of the *morus alba*, and established a factory at *Darang*, with a view to extend the culture of mulberry silk, and improve the reeling of the *mooga*. Several causes rendered the experiment abortive, the want of European superintendence and Mr. Scott's untimely death being the principal ones*.

Eria silk.—The *eria* worm and moth differ from the mulberry worm and moth in every respect, as will be better understood by the accompanying drawings and insects: like it, however, it goes through four different moultings, but its sickness in doing it lasts only twenty-four hours; the last stage takes eight days, the others four. The duration of its life varies according to seasons: in summer it is shorter, and the produce both greater and better; at this season, from its birth to the time it begins its cocoon, twenty to twenty-four days expire, in fifteen more the moth comes forth, the eggs are laid in three days, and in five they are hatched, making the total duration of a breed forty-three to forty-seven days: in winter it is nearly two months; the number of breeds in the year are reckoned at seven.

This worm is, like the mulberry worm, reared entirely within doors: it is fed principally on the *hera* or palma-christi leaves, it eats the mulberry leaf also but is said to prefer the former; when the palma-christi leaves fail, they are also fed on those of several other trees known in this part of *Assam* by the following names:—

1. Kossool.
2. Hindoo gass.
3. Meekeerdal.

* From the opinions given by several merchants of *Calcutta* on samples of *Assam* mulberry silk, reeled on Italian reels from worms properly fed and attended to, I am led to believe this province exceedingly favorable to the production of very superior silk.—The samples sent down would have fetched the highest prices in the *Calcutta* market, and they were got up under the unfavorable circumstances of a rude experiment.—F. JENKINS.

4. Okonnee.
5. Gomarree.
6. Litta Pakoree.
7. Borzonolly.

The worms thrive best and produce most when entirely fed on the palma-christi—it is the only plant which is cultivated purposely for it, there is hardly one ryut who has not a small patch of it near his house or on the hedges of his fields—it requires little or no culture—the ground is turned up a little with the hoe and the seeds thrown in without ploughing; whilst the plant is young it is weeded once or twice, but it is afterwards left to itself. The plant is renewed every three years. On the leaves of Nos. 1 and 2, worms can be reared entirely, but they do not thrive well upon it, many die even after having begun the cocoons, and the few of these that are got are small and yield but little. These and the others are only used in the fourth or fifth stage when they are considered to answer quite as well as the palma-christi leaves. The *kossool* (No. 1) alone can be given alternately with the palma-christi. The whole of these trees are found in the forests, but not cultivated.

To breed from, the Assamese select cocoons from those which have been begun in the largest number on the same day—generally the second or third day after cocoons have begun to be formed—those that contain males being distinguished by a more pointed end. These cocoons are put in a closed basket and hung up in the house out of reach of rats and insects. When the moths come forth they are allowed to move about in the basket for twenty-four hours; after which the females, (known only by the larger body) are tied to long reeds or canes, twenty or twenty-five to each, and these are hung up in the house. The eggs that have been laid the first three days amounting to about two hundred are alone kept, they are tied in a piece of cloth and suspended to the roof until a few begin to hatch—these eggs are white, and the size of turnip seed; when a few of the worms are hatched, the cloths are put on small bamboo platters hung up in the house, in which they are fed with tender leaves; after the second moulting they are removed to bunches of leaves suspended above the ground, under them upon the ground a mat is laid to receive them when they fall; when they have ceased feeding they are thrown into baskets full of dry leaves, amongst which they form their cocoons, two or three being often found joined together.

The caterpillar is at first about a quarter of an inch in length, and appears nearly black; as it increases in size it becomes of an orange color, with six black spots on each of the twelve rings which form its body.

The head, claws and holders are black ; after the second moulting they change to an orange color, that of the body gradually becomes lighter, in some approaching to white, in others to green, and the black spots gradually become the color of the body ; after the fourth and last moulting the color is a dirty white or a dark green : the white caterpillars invariably spin red silk, the green ones white. On attaining its full size the worm is about three and half inches long : unlike the *mooga* caterpillar, its colors are uniform and dull, the breathing holes are marked by a black mark—the moles have become the color of the body, they have increased to long fleshy points, without the sharp prickles the *Mooga* worm has ; the body has a few short hairs, hardly perceptible.

In four days the cocoons are complete ; after the selection for the next breed is made, they are exposed to the sun for two or three days to destroy the vitality of the chrysalis. The hill tribes settled in the plains are very fond of eating the chrysalis—they perforate the cocoons the third day to get them, they do the same with the *mooga* and sell few cocoons imperforated.

The cocoons are put over a slow fire in a solution of potash, when the silk comes easily off : they are taken out and the water slightly pressed out : they are then taken one by one, loosened at one end and the cocoon put over the thumb of the left hand, with the right they draw it out nearly the thickness of twine, reducing any inequality by rubbing it between the index and thumb ; in this way new cocoons are joined on. The thread is allowed to accumulate in heaps of a quarter of a seer : it is afterwards exposed to the sun or near the fire to dry ; it is then made into skeins with two sticks tied at one end and opening like a pair of compasses : it is then ready to be wove unless it has to be dyed.

The dyes used are lac, munjeet and indigo, and the process of dying is as follows.

Red Dye.—The lac after having been exposed to the sun to render it brittle, is ground and sieved as fine as possible : it is steeped twelve hours in water, after which the thread is thrown in with the leaves of a tree, called by the Assamese *Litakoo*—(*Pierardia sapida* ? F. J.) When it has absorbed most of this mixture, it is taken out, put over two cross sticks, and shaken a short time to detach the threads well from each other : it is dried in the sun and the same process again gone through twice. When it is wished to increase the brightness of the color, it is again dyed with munjeet : the latter is dried in the sun and ground in the same way, it is steeped for forty-eight hours ; the threads are put in and boiled in the same way, but with the leaves of a

different tree (the *Koh*) : the thread is dried in the sun, and is ready for use. Nearly the same process is gone through for the blue : instead of the common indigo, they sometimes use the *Room*, which plant is, I believe, *Ruellia callosa*—also the leaves of a very large tree found in the forests, called by them *Ooriam*. The thread is wove as cotton. The different prices of the cloths and their use will be found in an annexed table ; their clothes are mostly used for house consumption, a few are bartered with the Bhotias and other hill tribes. Large quantities were formerly exported to *Lassa* by merchants, known in *Derung* as the “ Kampa Bhotias,”—the quantity they used to take away, was very considerable, but in the latter years of the *Assam* rája’s rule, from the disorganized state of the country, the number of merchants gradually decreased ; three years ago only two came after a long interval, one of them died, and I believe the trade has not again been revived : those two merchants complained that they could no more procure the cloths suited to their markets. No exports of it are mentioned in the returns of the Hydra-chowkey. The quantity the country is capable of exporting under an improved management would be very large, for it forms at present the dress of the poorer classes at all seasons, and is used by the highest for winter wear.

I have been unable yet to ascertain the quantity of this silk obtainable from one acre of land, no man can tell me the extent of his plantation, or even the quantity of *Eria* thread he got in a year beyond this, that he had enough for the use of his family ; every ryut has a few plants round his house or farming hedges—which would at most amount to the twentieth part of an acre ; so that for this to afford clothing for a family the produce must be very large indeed.

Mooga Silk.—Although the *mooga* moth can be reared in houses, it is fed and thrives best in the open air and on the trees. The trees which afford it food are known in *Assam* by the following names :—

1. Addakoory.
2. Champa, (*Michelia*.)
3. Soom.
4. Kontooloa.
5. Digluttee, (*Tetranthera diglottica*, HAM.)
6. Pattee shoonda, (*Laurus obtusifolia*, “ ROXB.”)
7. Sonhalloo, (*Tetranthera macrophylla*, “ ROXB.”)

Silk from No. 1. Addakoory.—The Addakoory, the worms fed on which produce the *Mazankoory mooga*, is a middle-sized tree, used for rearing worms only when under four years. It sprouts up where forests have been cleared up for the cultivation of rice or cotton. The worms that are put on the tree on the first year of their appearance

above the ground produce the best silk. The second year the crops are inferior in quality and quantity, and the third it is little if at all superior to the common *mooga*. The *Mazankoory* silk is nearly white, and its value fifty per cent. above that of the common fawn-colored.

The tending of the worms on this tree is much more laborious than on any of the others: young trees only being used, they have to be constantly removed to fresh ones: the smoothness of the bark also renders it necessary to help them in moving from branch to branch. This tree is more abundant in *Upper* than in *Lower Assam*—last year it was for the first time found to exist in the forests of the *Morung*, on the eastern boundary of this district: the Upper Assamese who are settled throughout this district (they form one-fourth or one-fifth of our population here), have never met with it in any other place.

No. 2. Champa.—The *Champa* is found, as the *Addakoory*, where forests have been cleared: the silk of the worms fed on it is called "*Champa pootia mooga*." It is held in the same estimation as the "*Mazankoory*;" I do not know whether it is also used when young—the tree is not met with in *Lower Assam*.

No. 3. Soom.—The *Soom* is found principally in the forests of the plains and in the villages, where the plantations of this tree are very extensive. It attains a large size and yields three crops of leaves in the year: the silk produced by it is of a light fawn color, and estimated next to the *Mazankoory*: the plantations are most abundant in the eastern half of this district.

No. 4. Kontooloa.—This is a large tree found both in the hills and the plains—also a few in the villages: the leaves are too hard for young worms: they are reared on the preceding (*No. 3*), till the third moulting, and then put on this tree; by which process the silk obtained is stronger than that from worms reared entirely on the *Soom*.

No. 5. Digluttee.—A tree of a small size not much used on that account: the silk equal to that obtained from *No. 3*.

No. 6. Pattee shoonda.—Middle-sized tree, found principally in forests—few to be met with in the villages of *Lower Assam*—used when the leaves of *No. 3* are done.

No. 7. Sonhalloo.—The *Sonhalloo* is found in the forests of the hills and plains, where it attains a very large size: it is also found in the villages, where in six years it attains its full growth (thirty feet); it is very abundant in the western portion of this district. *Rara, Jumna, Mookh, Jyntea*, and the valley of *Dhurmpoor*—at the latter place, where the hill tribes of *Mikirs* and *Kacháris* clear dense forests for the cultivation of rice and cotton, numbers of the plants spring up

spontaneously. After three or four years when the land getting poorer requires more tillage and the use of the plough, these tribes who only use the *kar*, or hoe, remove to new forests and leave behind them plantations of these trees, which they have used during the short period they have remained. To them, the ryuts of the more settled parts resort in the spring to rear up worms: the silk of the Sonhalloo-fed worm is considered inferior to the preceding—more I believe from its darker color than any other cause.

There are generally five breeds of *mooga* worms in the year, they are named after the months at which they generally occur.

1. *Jarooa*, in January and February.
2. *Jeytooa*, in May and June.
3. *Aharooa*, in June and July.
4. *Bhodia*, in August and September.
5. *Khotia*, in October and November.

The first and last are the best crops as to quality and quantity. Nos. 3 and 4 yield so little and so inferior a silk, that they may be said to be merely for the purpose of continuing the breed. Were the Assamese acquainted with the process of retarding the hatching of the eggs as is practised in *China*, in regard to the mulberry silk-worm, they would, I think, find it more advantageous to have only three or four crops.

The same rule is followed in the selection of cocoons to breed from as in the *Eria*. They are put in a closed basket suspended from the roof: the moths as they come forth having room to move about, after a day the females (known only by their larger body) are taken out and tied to small wisps of thatching grass, taken always from over the hearth—its darkened color being thought more acceptable to the moth. If out of a batch there should be but few males, the wisps with the females tied to them are exposed outside at night: the males thrown away in the neighbourhood find their way to them: these wisps are hung on a string tied across the house to keep them from the lizards and rats. The eggs laid during the first three days (about 250) are the only ones thought worth the keeping: those laid on the two or three subsequent days are said to produce weak worms. The wisps are taken out morning and evening, and exposed to the side where the sun is shining: ten days after the laying of the eggs, a few of them are hatched: the wisps are then hung up to the tree, the young worms finding their way to the leaves—care must be taken that the ants have been destroyed, their bite proving fatal to the worm in its early stages. To effect this they rub the trunk of the tree with molasses and tie to it fish and dead toads. When large

numbers have been attracted to one place they destroy them with fire ; this they do several times previously to the worms being put on ; the ground under the trees must be kept clear of jungle to make it easy to find the worms that fall down—young trees are preferable until the second moulting.

To prevent the worms coming to the ground, fresh plantain leaves are tied round the trunk, over the slippery surface of which they cannot crawl. They are removed to fresh trees on bamboo platters tied to long poles.

Bats, owls, rats, are very destructive at night : in the day the worms require to be constantly watched—crows and other birds being so fond of them, that they lie in wait in the neighbouring trees. An old lady's doze over her morning " canee " (opium), however short, is sure to be fatal to several worms—the *goolail* which is always at hand often punishes the thief, but the mischief is done.

Numbers are destroyed in the more advanced stages by the sting of wasps—and by the ichneumon insect which deposits its eggs in their body. These are hatched when the cocoon is half formed : they perforate it at the side and the chrysalis is found dead : the worms which have thus been stung are known by black marks on their body. Were the people more careful in their management, this would be of little consequence : by making these worms spin apart, the cocoon being formed before the chrysalis is killed, the silk could be saved.

The worms thrive best in dry weather : but a very hot sunny day proves fatal to many at the time of moulting. At these periods rain is very favorable, thunder storms do not injure them as they do the mulberry worm ; continual heavy-rains, (which are rarer in *Assam* than in *Bengal*) are hurtful by throwing them down—showers, however heavy, cause no great damage, they taking shelter under the leaves with perfect safety. The worms during their moultings remain on the branches, but when about beginning to spin they come down the trunk, the plantain leaves preventing their going further down they are collected in baskets, which are afterwards put under bunches of dry leaves suspended from the roof—they crawl up into these and form their cocoons—as with the *Eria* several are often joined together. The silk of these they spin instead of winding : above the plantain leaf a roll of grass is tied for those that come down during the night to begin spinning in—after four days the selection of cocoons for the next breed is made and the rest wound off.

The total duration of a breed varies from sixty to seventy days. The period is thus divided—four moultings, with one day's illness attending each, 20

From fourth moulting to beginning of cocoon,	10
In the cocoon,	20
As a moth,	6
Hatching of the eggs,	10

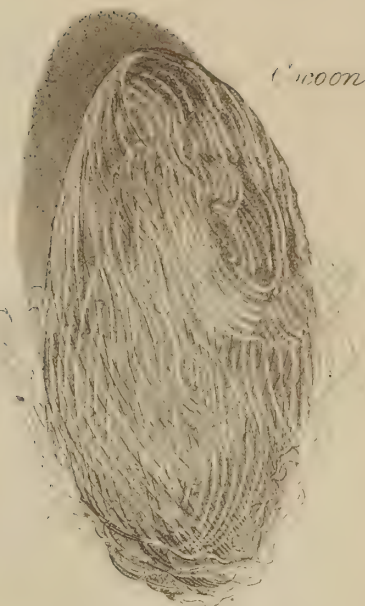
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On being hatched the worm is about a quarter of an inch long, it appears composed of alternate black and yellow rings; as it increases in size the former are distinguished, as six black moles, in regular lines on each of the twelve rings which form its body. The colors gradually alter as it progresses, that of the body becoming lighter, the moles sky-blue, then red with a bright gold-colored ring round each. When full grown the worm is above four inches long; its colors are most brilliant and varied in shades: the body appears transparent and is of a very light yellow or dark green color, with a brown and a yellow streak at the sides; in the latter the breathing holes are distinguished by a black speck: the moles are red and have each four sharp prickles and a few black hairs: the head and claws are of a light brown, the holders green and covered with short black hair; the last pair have a black ring on the outside. On being tapped with the finger the body renders a hollow sound; by the sound it is ascertained whether they have come down for want of leaves on the tree, or from their having ceased feeding.

The chrysalis not being soon killed by exposure to the sun, when they have many cocoons they put them on stages, cover them up with leaves and burn grass under them; the cocoons are then boiled for about an hour in a solution of the potash made from the dried stalks of rice, they are then taken out and laid on cloth folded over to keep them warm; from this they are taken as required and thrown in hot water (not over the fire) after the floss has been removed with the hand. The instrument used for winding off the silk is the coarsest imaginable: a thick bamboo about three feet long is split in two, and the pieces driven equally in the ground two feet apart: over the interior projection of one of the knots is laid a stick, to which is fixed, a little on one side, a round piece of plank about one foot in diameter—the rotary motion is given by jerking this axle, on which the thread rolls itself: in front of the vessel holding the cocoons a stick is fixed horizontally for the thread to travel upon. Two persons are employed—one attending the cocoons, the other jerks the axle with the right hand and with the same hand directs the thread up the left forearm, so that it is twisted in coming down again towards the hand; the left hand directs the thread over the axle. Fifteen cocoons is the

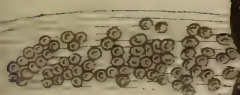


The Torea Silk moth
Bombyx religiosa



Cocoon

Moonga Silk-worm
and moth



3rd Stage



Chrysalis

5th Stage



smallest number they can wind off in one thread, twenty the number generally; even the last is often broken from the coarseness of the instrument used, although the fibre is much stouter than that of the mulberry silk. When nearly a quarter of a seer has accumulated on the axle, it is dried in the sun and made into skeins of one or two rupees weight. This is done with a small bamboo frame set in motion by the common spinning machine of the country: if it has to be dyed the same process is followed as with the *Eria*. The cloths usually made of *mooga* and their use will be found in the annexed table: besides those, I have seen it used as the warp with cotton, and the cloth so made is a little lighter color than nankin and much stronger; but this is seldom done, from the trouble of spinning the cotton fine enough. Cotton twist adapted to that purpose would, I think, meet a ready market.

The exact quantity of silk which an acre of *mooga* trees can produce could not be ascertained without a trial. Fifty thousand cocoons per acre*, which makes upwards of twelve seers, are considered by the Assamese a good yearly return. Sixty rupees the value of twelve seers must be a very profitable one, for there is little labor or expense to the ryut in making or keeping up a plantation: whilst the trees are young, the ground is available for cultivation besides rearing worms; sugar-cane, rice, pulse, &c. are cultivated with benefit rather than injury to the young trees. The tax is fourteen annas the acre in this district. The great value of the *mooga* is, that it enables the weaker members of a family to contribute as much as the most robust to the welfare of the whole. Besides attending to the worms most of them weave, spin or make baskets, while watching them.

From causes which I have been unable to ascertain, and of which the natives are ignorant, the *mooga* some years failed so completely in particular districts that none was left to continue the breed. There being very few weekly *hauts* or markets to resort to, to procure cocoons for breeding from the more fortunate people of other districts, a failure of this kind in one place is sensibly felt for two or three years after in the production. The time of the ryut, who has at most half or a quarter of an acre of *mooga* trees, is too valuable to allow of his being absent for a month and more, going from village to village, and house to house to find out the people who have cocoons for sale. This last season in our *Jumna-múkh* (*Cachar*) pergunnah the *mooga*

* An Assamese Poorah of land is a little more than an English statute acre, and such lands hitherto have not been taxed, or at a very low rate, if cultivated with other crops besides the *mooga*.

was a complete failure; there are no worms on the trees now, from inability to procure cocoons, although there was a very abundant crop in two pergunnahs at the opposite end of the district.

The *mooga* plantations are principally round the ryuts' houses, and are included in house-lands. By this year's measurement of the Barree lands in the three divisions of the *Nowgong* zillah where the land tax obtains, the quantity in actual occupation (exclusive of those which being unclaimed have reverted to the state) amounts to 5350 acres: the proportion of *mooga* plantations is upwards of one-fourth or 1337 acres. In the five other divisions of the same zillah, which are three times the area, and have more than double the population, but of which we have no accurate measurements, I will only venture to estimate the quantity of *mooga* plantations at half that of the other three or about 600 acres, but on this low calculation there would be a total of 2000 acres for *Nowgong*. Estimating the plantations of the *Derung* and *Kamráp* zillahs at only 1500 acres each, there would be a total of 5000 acres of those plantations in *Lower Assam*, exclusive of what the forests contain of them: this quantity is capable of producing in one year 1500 maunds. In *Upper Assam* I understand the plantations are more extensive than ours.

4. *Kontkúrí Mooga*.—This worm feeds on many trees besides the “*mooga* trees;” it is found oftener on the *bair*, (*Zizyphus jujuba*,) and the *seemul*, (*Bombax heptaphyllum*,) but not in great quantities. The worms, moths and cocoons are considerably larger than any of the others; indeed the cocoon is the size of a fowl's egg. Several Assamese told me they had vainly attempted to domesticate them; the eggs have been hatched, but after observing the worms for a few days on the trees they have at once disappeared. They attributed this to its being a “dewang” or spirit; the real cause may probably be its being fond of changing its food, and gifted with greater locomotive powers than the generality of the silk-worms. I have been told by some Bengalees that it is found in *Bengal* in the wild state on the “*bair*” as in *Assam*, and called “Gootee-poka;” it is there reeled off like the mulberry silk and much valued for fishing lines, but not wove, probably from its scarcity. The fibre is stronger than that of the *mooga* and of a lighter color.

5. *Deo Mooga*.—I accidentally became acquainted with this worm, which is very little known to the natives and entirely in the wild state. Three years ago being employed in *Jumna-múkh* (*Cachar*), I had occasion to take some bearings, for which purpose I had a white cloth put up on a large “*Bur*” tree, (*Ficus Indica*;) the year after, being near the same spot, the ryuts came and told me that two months after

I left (April), they observed that the tree had lost all its foliage, they went to it and found in the surrounding grass and dry leaves, a large number of small cocoons; these they spun like the *eria* out of curiosity and used it with the latter. They took no further notice of succeeding breeds, finding the thing of little present use. I lost a few cocoons which I procured at the time, but have lately seen both the worm and the cocoon, the former is quite different from any other; it is more active, its length is under $2\frac{1}{2}$ inches, the body very slender in proportion to its length, the color reddish and glazed. I could not observe them more particularly, as they were brought to me one evening at dusk: I put them in a box, with the intention of examining them the next morning, but they disappeared during the night, although it was open very little to admit the air. The moth is very much like that of the mulberry, so is the cocoon also in appearance, color and size; I have questioned many of the natives about this worm, but none had ever seen it before—their opinion of it is that it is a “dewang” (spirit) brought there by the prismater compass and the white flay—this made them call it *deo mooga*.

The *haumpottenee*, a caterpillar very common in *Assam* (and elsewhere perhaps), may also be mentioned as one of the varieties of the species, although it forms but a very imperfect cocoon: it feeds on most leaves. I have had no opportunity yet of observing it myself; but am told by the natives that it goes through similar stages to the others; the worm is about two inches long, of a brown color and covered with hair, the moth of the same color as the *mooga* moth but only half the size; the cocoon has this peculiarity, that it is quite transparent, so that the chrysalis can be seen inside; at one end of it a small opening is left—the cocoon is of a yellow color—it can be spun like the *eria* cocoon, but the Assamese do not use it, on account of its silk causing a severe itching in wearing.

I have questioned several Bengalees settled in *Assam* and who have been at *Midnapur*, regarding the identity of the *mooga* and *tussur*; they say that the worm is the same, but that at the latter place they are fed on a different tree: the point could be better ascertained by a comparison with the drawings and preserved worms which accompany these remarks. The Burmese envoys who have just left *Assam* told me that the *mooga* was unknown in their country previous to the conquest of *Assam*; but that it had since been introduced by the Assamese who were carried off and settled in the Burmese territory: the *Cacharis* also admit that it is not many years since it was introduced into *Cachar*, (south of the hills.) In *Cooch Behar* both it and the *eria* are almost unknown to this day; the prevailing opinion amongst the natives of

these parts is, that both species (*mooga* and *eria*) are indigenous to *Upper Assam* and were introduced from thence. It has always appeared to me that the production of these silks is greater as one advances to the east—it is to this day procurable more abundantly in *Upper Assam* than any where else, especially in the district of *Lukinpoor* on the north bank of the *Burhampootur*.

Little *eria* is exported, but the *mooga* forms one of the principal exports of *Assam*; the average of the quantity passed at *Gowalpara* during the two last years that duties were levied, was two hundred and fifty-seven maunds, valued at fifty-six thousand and fifty-four rupees: it leaves the country principally in the shape of thread. Most of it going to *Berhampoor*, it is probable that the cloths made from it pass under the name of *tussur*; the latter as far as I recollect, appears to have less gloss. The *Hydra chowkey* returns comprise only the products exported by water. The total quantity that leaves the province may, I think, be estimated at upwards of three hundred maunds, for *mooga* forms also a portion of the traffic with *Silhet* (across the hills) the *Cassyas*, *Bhotias*, and other hill tribes. The Assamese generally keeping more for their own use than they sell, the total quantity produced in the province may be reckoned at six or seven hundred maunds. It has been in great demand in *Bengal*, for within the last few years, although the production has been greater from the more settled state of the country, the price has risen 20 per cent. When I first arrived in this district, it could be obtained without difficulty from the ryuts at three and a half to four rupees the seer; now it is difficult to procure it at five rupees. The competition is so great, that the traders pay for it in advance, not as with other products, to get it at a lower rate, but merely to secure their getting it. This competition is also owing to the greater number of small traders who resort to the province since the abolition of chowkeys—which may have caused a rise on the price of the product in *Assam* without a corresponding increase in the exports.

No gradual improvement can be traced in the mode of rearing the several worms or winding their silk—it is now what it was a century ago, there being no European speculators in *Assam*, nor it being probable that when any venture so far they would readily risk the capital in quite a new branch of industry. This important product of the country is likely to remain for years unimproved, unless the subject should again be taken up by Government. The small factory set up by the late Mr. SCOTT, to which I have before alluded, was kept up too short a time to have had any perceptible effect. Mr. SCOTT's declining health and numerous duties never allowed him to give it a

moment's personal attention, nor could his assistant do it, having then the same work to do which now employs several officers; the factory was therefore left entirely under the direction of natives. These, to add to their own importance, rather increased, than alleviated the fears that the Assamese, (who had labored under so many restrictions,) naturally entertained of imitating or using any thing pertaining or appropriated to the "Rája;" such a presumption in the good old times might have cost a man his ears or his nose. The residence of European officers in different parts of the country having undeceived the people as to those restrictions, there would be now great facilities in introducing improvements—although the ryuts individually have not the means of getting reeling machines, however simple and cheap, they would, as with sugar-mills, club together to obtain them, were it only shewn to them that there was any advantage, in the use of them. *Mooga* thread is every day increasing in value; I have marked its rise from three rupees eight annas, to five rupees in the short space of three years; in *Gowalpara* it sells at six rupees eight annas or seven rupees; in *Dacca* and *Moorshedabad* at eight rupees. This is, I believe, not more than thirty per cent. below mulberry silk in *Calcutta*; the primitive process of the Assamese which I have described will, perhaps, shew a possibility of this difference being made up by superior management. The *mooga* silk could be used in colored fabrics, being easily dyed. In its natural fawn color it stands washing much better than silk, keeping gloss and color to the last; the natives bleach it with a solution of the potash made from plantain trees, this they also use in washing their cloths, both cotton and silk: soap was unknown previous to the British occupation of the country.

Another object of great interest, which might become of great importance to this province, is, to ascertain the possibility of rendering the *eria* marketable in some shape or other; the way of preparing it (already described,) is such that the cloth made of it when new looks as rough as "taut" (or gunny); it is only by repeated washings that it attains a softness of feel and gloss which approach that of silk. It is highly improbable that amongst the natives, repeated trials should not have been made of reeling instead of spinning these cocoons, but from their failing it would be wrong to lay it down as an impossibility: they have merely tried it as other cocoons and given it up when they found that the fibre "did not come," as one of them told me. I had it tried before me with a few cocoons, but with the greatest care the fibre could not be drawn off beyond a few yards without breaking, the cause of this appeared to me to be a greater adhesiveness in the fibre than with other cocoons, it was drawn off with diffi-

culty and with a crackling noise—until it brought several layers with it, from which it could not be detached without breaking, some thing may perhaps be hereafter found to reduce that adhesiveness. It is, I think, unlikely that the worm should spin in a different way from all others, allowing this to be the case, great improvements could be made in the spinning, by, no doubt, the introduction of the process in practice in Europe to spin perforated cocoons, from its cheapness it would perhaps be advantageously used with wool—especially in stockings, it would add softness and gloss without taking from the warmth, the cocoons costing only one rupee, the thread two rupees per seer.

Although I have been unable to form an estimate of the land taken up on the cultivation of the “*hera*” or palma-christi, a very rough one could be made of the total quantity of *eria* silk produced by referring to the population; it being the daily wear of the poor, and besides, being used by every class in winter. The population is reckoned at 455,000*, therefore estimating the yearly consumption of each individual at the lowest, the total quantity produced would be upwards of 1000 maunds, most of this could be exported if it acquired the least additional value by better management, and be replaced by other manufactures and by an increase in the growth of cotton. The product would keep pace with any increase of demand, for there is hardly a house in the country where these worms are not reared.

Being acquainted only with central *Assam* and this district in particular, *Upper Assam*, the Moamariya country, the Bhotan territories in the plains are left out of these remarks and estimates†. Although the population assimilates, in many respects they may differ in their different processes. I have used as few local terms as I could except with regard to the tree and plants whose botanical name I have not been able to ascertain.

P. S. In the within Mr. HUGON has said nothing of another silk worm which was lately discovered on a pipul tree (*F. religiosa*)—and of the moth of which a drawing accompanies with three or four cocoons, a chrysalis and two moths. This looks very like the mulberry moth, but I am not able to say whether it is or not. The silk looks very fine

* By the statistical report of 1835,—Kamroop district,	280,000
Dorung ditto,	95,000
Nowgong ditto,	80,000

† The population of <i>Upper Assam</i> is estimated at,	220,000
Moamariya,	50,000

270,000

Toolaram's country, Jyntia,	} no estimate is ever made.
Bhotan territory in the plains,	

and it may be considered a curiosity even if it be the produce of a mulberry worm, for the question arises on what was the worm fed?—if on the *F. religiosa*, it is, I believe, a discovery, that the silk worm would feed on the leaf of any tree but the mulberry; if the worm is distinct from the *Bombyx mori* it is a still greater curiosity.

Mr. HUGON has been unable to determine whether the worm now alluded to, is the same as the *deo mooga* mentioned within: he is inclined to think not from the color of the cocoons and the slight observations he was able to make on the latter; but from both feeding on the leaves of two trees so nearly allied, I should suppose it likely that the worms were identical. It would be a discovery of some importance to find worms affording any tolerable silk that fed on these species of *Ficus* which are so abundant here.—F. JENKINS.

List of the Cloths made in Assam of Mooga and Eria Silks.

Names of Cloth.	Size in Cubits.	Weight.		Price of Thread.	Cost of Weaving	Total.	Remarks.
		Seer.	Chk.	R. A. P.	R. A. P.	R. A. P.	
<i>Mooga.</i>							
Soorias,....	7 by $1\frac{1}{2}$	0	6	1 14 0	0 3 0	2 1 0	} Dhoties.
Ditto,.....	16 ,, 2	1	0	5 0 0	0 8 0	5 8 0	
Mekla,	5 ,, $1\frac{3}{4}$	0	4	1 4 0	0 2 0	1 6 0	} Petticoats.
Rhia,	12 ,, $1\frac{1}{4}$	0	8	2 8 0	0 4 0	2 12 0	
Gaursha, ..	8 ,, 1	0	2	0 10 0	0 1 0	0 11 0	} Worn as turbans or round the waist.
Joonta Bor Cappor,..	12 ,, $2\frac{1}{2}$	1	0	2 0 0	0 6 0	2 6 0	
<i>Eria.</i>							
Bor Cappor,	16 by 3	1	8	3 0 0	0 8 0	3 8 0	} Worn in winter and used as a blanket, also made into coats.
Meklas,....	5 ,, 2	0	6	0 12 0	0 2 0	0 14 0	
Rhia,	10 ,, $1\frac{1}{2}$	0	8	1 0 0	0 2 0	1 2 0	} Used only by the poorer class.
Gaursha, ..	8 ,, $\frac{1}{2}$	0	4	0 8 0	0 2 0	0 10 0	

Memorandum upon the specimens of Silk, and Silkworm from Assam, by W. PRINSEP, Esq.

The *mooga* or *tussur* cocoons, are very fine, particularly those fed from the *soom* and the *sohaloo* trees which are superior to the produce of the jungles about *Bankoora*.

The thread from these worms, is quite equal to that which is used in the best *China* *tussur* cloths.

The specimens of cloth wove from these threads, are not equal, however, either to the *Bengal* *tussur* cloth, nor to the *China* cloth of the same description.

The *eria* cocoon, thread, and cloth are all new to us: I have never seen them in *Bengal*, except now and then a few pieces of the cloth

imported from *Rungpur*; it appears to be more cottony than the tussur, and to make a web warmer and softer than the tussur cloth, but it is not so strong.

The cocoons called *haumpottonee* are unknown to us in *Bengal*, and appear to be of small value both as to quantity and texture: moreover I imagine it would be very difficult to reel them into thread.

The *deo mooga* cocoons are very small but are fine and soft, and when fresh would yield, I doubt not, a very delicate white thread: they are smaller than our *dèsee* (country) cocoon.

The specimen of country worm silk is very fair, and if dressed would be quite equal to our *Patna* thread, from which korahs and other silk piece goods are made.

The specimen of iron reel (or station method) is very good, indeed, equal to our best native filature letter A: the thread is even, soft, sound and remarkably strong, so that it may be well ranked with our best second quality from the filatures of *Bengal*.

IV.—*On the indigenous Silkworms of India.* By T. W. HELFER, M. D. Member of the Medical Faculties at the Universities in Prague and Pavia, Member of the Entom. Society in Paris, &c.

[Read at the Meeting of the 4th December.]

Silk was in all times an article of the greatest importance throughout the ancient world.

China gained its celebrity in the classical time of the ancients, as the mother-country of that mysterious texture, which it manufactured from time immemorial, with a high degree of perfection, and called *se* or *ser*; whence all India and its eastern unknown boundaries derived the name *Serira*.

It made the satraps of the western world, the rulers of *Rome* and the emperors of *Byzant*, envious of its possession, and the home brought golden fleece of the fabulous Argonauts, was perhaps nothing else than the precious web of the *Bombykia*.

The emperor JUSTINIANUS got an insight into the secret by two adventurous Persian monks, who brought the eggs of the Chinese silkworm in a hollow bamboo cane, safe over the icy chains of the *Himálaya*, the barren plains of *Bokhara*, and the rugged mountains of *Persia*, to the distant eastern capital. He considered it a point of great importance to reserve to himself the monopoly of such a precious article, though master of the riches of his vast empire.

The Sicilians in the time of ROGER the first, became a wealthy people by its introduction into *Palermo*—the Venetians were enabled by the trade of silk chiefly, to build their immortal maritime bulwark, and in our days the introduction and manufacture of silkworms is a source of unlimited riches to the countries of *Europe*, where it is cultivated on a large scale.

To elucidate this it may be observed, that *France* alone exported in the year 1820, wrought silk to the value of more than 123 millions of francs.

The importation of raw and worked silk into *England*, amounted to 4,547,812 pounds in the year 1828, of which about 1,500,000 pounds were brought from *Bengal*, 3,047,000 pounds were, therefore, brought from foreign countries, chiefly *Italy* and *Turkey*.

The northern parts of *Europe* and chiefly *England* are less suited for its cultivation on account of climate.

Great Britain, *France* and *Germany*, finding by experience, that the demand is constantly greater than the supply, resorted to different substitutes.

Different substances presenting analogies to that beautiful filament were examined. The spider's web was tried in *France*, first by Mr. BON : but Mr. REAUMUR found that the war-like propensities of the *Arachnidæ* hindered their being reared in great numbers, and this enterprize has been in our days entirely abandoned.

Men resorted to the *Mollusca* and found that the maritime *pinna* gives a filament like silk, having the power to produce a viscid matter which it spins round the body. A beautiful and very durable silk was produced from it, the Byssus of the ancients, but it was always dearer than the common silk of the *Bombyx mori*, and though to this day caps, gloves and stockings are woven from it in *Calabria* in *Sicily* (I saw myself a considerable manufacture of it in *Palermo*), it will probably remain for ever a matter of curiosity rather than an article of general use.

In *Germany* endeavours have been made in the time of ROESER, and recently in *Styria*, to make silk from the cocoons of the *Saturnia pyri*, a moth which is common in *Austria* and in the subalpine parts of the *Tyrol* and *Switzerland* : but hitherto the experiments have been too few ; more particularly, as I heard, on account of the delicate caterpillar, which dies if not fed with the greatest promptitude with the under leaves of different kinds of pear trees.

A discovery, therefore, which promises to prove not so abortive as those now quoted, must be of the greatest importance.

The vast provinces of *India* are rivalled in variety, preciousness

and perfection of their productions, only by those of the celestial empire. Now in the hands of an enlightened benevolent government, they will probably surpass it in a short time, when its natural resources, daily more conspicuous, shall be discovered, examined, and brought in to general use.

As in *China*, so in India, silk has been produced since time immemorial; not the silk of the later introduced mulberry caterpillar, but the silk from various indigenous cocoons, which are found only and exclusively here.

The first notice of these, but only in a cursory way, has been given by the father of Indian botany, Dr. ROXBURGH, in the Transactions of the Linnæan Society, vol. vii.

He there mentioned only two species, the *Phalena (Attacus) (Saturnia) paphia* and *Phalena cynthia*. Since that time no further attention has been paid to this subject except that Dr. BUCHANAN, in his description of the district of *Dinajpur*, says, that another silkworm is reared on the castor oil plant for the domestic use of the natives.

From the moment of my arrival in India, I had paid an unremitted zealous attention to the productions of Botany and Zoology, and had been so happy to identify in the course of two months, two other species of the genus *Saturnia* which yield silk, one from *Silhet* the other from *Bankoora*. Just at this time Mr. JAMES PRINSEP received from Captain JENKINS in *Assam*, a memoir by Mr. HUGON on the silkworms of that newly acquired, remarkable province, establishing six different kinds of silkworm: the cocoons of four of which are now transformed into silk by the inhabitants of *Assam*, and to my great joy and surprise, I found that three of them are different from the well-known *Bombyx mori*, and from the two other indigenous which are worked in Bengal.

These recent discoveries merit particular attention. India has thus the internal means of providing the whole of *Europe* with a material which would rival cotton and woollen cloth, and would be preferred in many cases to both, if brought within the reach of every one by a lower price: and an unlimited resource of riches and revenue might be opened under proper management.

May it be now permitted to me to go through the numerous different species of India which actually produce silk of which seven kinds have never been mentioned before.

1. *Bombyx mori*, the mulberry silkworm, which has been probably introduced as the mulberry seems to be an acclimated plant, is too well known to deserve a particular mention.

2. The wild silkworm of the Central provinces, being described

as a moth not larger than the *Bombyx mori*. I could not yet procure specimens of it : probably there are several species of *Bombyx* confused, as the silk, which sometimes comes in trade, varies considerably.

3. The Joree silkworm, *Bombyx religiosæ*, mihi.—I am sorry to say that the specimens of this interesting moth have been destroyed on their way from *Assam* to *Calcutta*, so that I am obliged to make a superficial description from the accompanying drawing. (Pl. VI.) excluding a diagnostical analysis.

Genus, Bombyx.

Length about $1\frac{1}{4}$ of an inch.

Antennæ, pectinated.

Head, small, covered.

Eyes, very large, brownish black.

Palpi, unknown.

Thorax, subquadrate, covered with thick brownish grey hair, with a black band separating the abdomen from the thorax.

Abdomen, represented as having eight segments?

Legs, unknown.

Wings, upper wings very short (in ♀ imperfect) triangular, with the acute angle outward. The interior side emarginated. Of a light grey color which darkens towards the extremity.

An interrupted whitish band on the lower margin with a large whitish speck towards the ends.

Lower wings uniformly brown.

The cocoon of this silkworm shows the finest filament, and has very much silky lustre. It is exceedingly smooth to the touch and very different from the cocoon of the mulberry tree.

This discovery of Capt. JENKINS is very interesting, as it yields a silk if not superior yet certainly equal to that of *Bombyx mori*.

It lives upon the pipul tree, (*Ficus religiosa*.) Its general introduction would be very easy, as the pipul tree grows abundantly over all India.

Specimens of cocoons sent a second time by Captain JENKINS, convince me that the *Joree* and *Deo-mooga* are the same species.

4. *Saturnia Silhetica*, mihi. (Longitudo pollices novem, sive lineas 108 alarum superiorum expansarum.)

Diagnosis. Pectinicornis, alis superioribus apice recurvata falcatis, inferioribus oblongis. Alis superioribus maculis duabus fenestralibus, internâ triangulari magnâ alterâ externâ multo minori oblongâ, inferioribus maculâ eâdem unâ versus corpus triangulari magnâ. Colore cinamomeis lineis variegater albidis in medio ad marginem externam flavis.

Eggs, larva, and chrysalis, unknown.

Imago. Description.

Head, projecting with a crest of yellow hairs.

Eyes, middle-sized, light brown.

Antennæ, pectinated, about five lines broad, yellow.

Palpi, four, not covering the inner vermilar, brownish colored.

Mouth, hidden, without proboscis.

Thorax, obovate, clothed in a velvet-like purplish fine hair of the same color as the wings.

Abdomen, very short, clothed with much finer and lighter hair than the thorax.

Legs, hairy, yellow, equal.

Tarsi, moderately incurved.

Wings, horizontal expanded, with strong ramifications of the central muscles and tendons.—*Superior pair* of a cinnamon color. The end much curved, the upper margin with a beautiful velvet-like grey belt. Fan edges very much concave, the exterior extremity of a beautiful rose color. The inferior margin darker yellow, with an undulating narrow thread-like black line, losing itself towards the exterior extremity. In the centre is the eye, peculiar to all saturniæ, with micaceous transparency, triangular, with the sharp angle towards the body, another small oblong transparent point behind it, both with a dark brownish margin round it. *Inferior or second pair*, in point of distribution of colors the same; in form, much more convex, oblong. The hair very thick and long towards the body, and more particularly towards the point of insertion. The black line is not undulated, but follows the shape of the wing, and has at each side of the projecting tendons two black oblong spots, circumscribed with light yellow.

Habitat in the Cassia mountains in *Silhet* and *Dacca*, where its large cocoons are spun to silk. A particular description of the process is wanted.

5. A still larger *Saturnia*, one of the greatest moths in existence, measuring ten inches from the end of one wing to the other, observed by J. W. GRANT, Esq. in *Chirra Punjee*, seen in the possession of the late Dr. JAMES CLARK. I have not yet seen the animal.

6. *Saturnia Paphia*, Linn. Syst. Nat. 2, p. 809, 4. *Phalæna Mylitta*, DRURY, vol. ii. t. 5, f. 1, Mar. ROXB. Trans. Linn. Soc. vol. vii. p. 33.

The Tusseh Silkworm.

It is the most common in use of the native silkworms. The cloth so commonly worn by Europeans also in this country, comes from this species; J. W. GRANT, Esq. had the kindness to procure me, in

the month of September, more than 3000 cocoons, which I permitted to slip out, and had ample opportunity of studying them.

MICHAEL ATKINSON, Esq. from *Jangypur* says, that this species cannot be domesticated, because the moths take flight, before the females are fecundated. This is against my experience : I kept them under a musquito curtain to prevent their evasion, there they were impregnated readily by the males, and deposited every where many thousand eggs, and the young caterpillars issued the tenth day. Therefore the fear entertained of the difficulty in this respect seems to be easily overcome.

Hitherto has this silkworm never been reared, but millions of cocoons are annually collected in the jungles and brought to the silk factories near *Calcutta*, for instance *Dhaniakhali* ; but the principal place of their manufacture is at *Bhagelpur*. In other parts as at *Jangypur* the people gather them from the trees and transplant them on the Assem tree, (*Terminalia alata*, Roxb.) which growing near the houses enables them easily to watch the caterpillars, which are eagerly searched out and devoured in the day time by crows, and at night by bats, &c.

The natives distinguish two varieties, the bughy and the jaroo, but they are the same species.

They feed most commonly in the wild state on the bair tree, (*Zizyphus jujuba*,) but like also and indeed prefer the *Terminalia alata* and *Bombax heptaphyllum*.

This is the same moth which is also found sometimes in *Assam* and which Mr. HUGON calls *Kontkurí mooga*.

Though it was known in *Europe* by the publications of Dr. ROXBURGH and Dr. BUCHANAN, that the *Tusseh* and *Arrindy* silkworms are existing and indigenous, yet, strange enough, it was hitherto unknown, (at least with us on the continent,) that for some years past, their silk was only in small quantity exported to *England* ; this silk having been considered as an inferior quality to that produced by *Bombyx mori*. The question of the possibility of acclimation of these larvæ in other congenial climates has ex ipso never been raised.

7. Another *Saturnia* distinct from all others (alis inferioribus in caudam desinentibus) ; it resembles some species which I saw brought from *Seva*, ? *Java*.

I could only procure the wings of this remarkable insect.

The moth comes from the neighborhood of *Comercolly*.

8. *Saturnia Assamensis*, (mihi.)—Long. alar. sup. extensarum 60—65 linear.

Diagn. Pectinicornis, alis superioribus apice acutis subfalcatis, in inferioribus subtriangularibus maculis duabus subcircularibus non diaphanis luteis. Color lateritis—luteus, nebulis sparsis obscuris lineis semicircularibus versus corpus duabus albis fasciâ albidâ brunneâ versus marginem inferiorem.

Eggs, larva, and chrysalis, not seen living, but recognizable in the accompanying drawing. (See *Moonga moth*, Plate VI.)

Head, not projecting, with a tuft of reddish yellow hair.

Eyes, ordinary dark-brown.

Antennæ, pectinated in ♀, broader than usual in Saturniæ.

Palpi, four, covering the mouth which is invisible.

Thorax, square, half oblong, clothed near the head in a silverish grey color, forming a continuity of that in the upper margin of the superior wings, the behind part of the color of the wings.

Abdomen, more than two-thirds of the breadth of both wings in their natural position, likewise of the color of the wings.

Legs, slender, hairy, yellow, short.

Tarsi, slight and incurved.

Wings, horizontally expanded, with a strong tendon directing the membrane of the upper wings in their upper margin.

Both pairs of a dark yellow somewhat reddish color. The end in the male much curved, the upper margin half from the body, of a silver grey color. The exterior extremity scarcely differently marked; a brown slightly undulated band, accompanied on both sides by a white line, extends across the wings more than two-thirds below their insertion on the thorax. Several brown nuberculæ are to be observed between the divisions of each tendon. Two semilunar white lines are to be observed on the upper wings, and are absolutely on the lower ones towards the abdomen; the interior larger, inwards curved; the other shorter, outward bound. The two specks on the wings, peculiar to *Saturnia*, are almost semicircular, but not micaceous, diaphanous; but likewise clothed with yellow squamæ of a darker line (more in ♀) with a brown margin on the inner side. Through this distinguishing peculiarity this insect seems to make a transit to a next genus, though the drawing of the larva represents completely a *saturnia* caterpillar.

The cocoon of a yellow brown color differs in appearance from all the others.

We are indebted for the discovery of this very interesting insect to Captain JENKINS and Mr. HUGON. Its particulars are extensively described in Mr. HUGON's memorandum. This species has never been mentioned before, though the fabrication of silk from it seems to be very common amongst the Assamese.

9. *Phalæna Cynthia*, DRURY, 2, t. 6, f. 2. Cram. 4, t. 39, f. 4.

ROXB. Linn. Trans. vol. vii. p. 42. BUCHANAN,
Desc. Dinájpur, p. 214.

(BUCHANAN quotes it as *Phalæna Penelope* unde?)

The *Arrindy Arria*, or *Eria* silkworm (Pl. V.) is reared over a great part of Hindustan, but more extensively in the districts of *Dinájpur* and *Rangpur*, in houses, in a domesticated state, and feeds chiefly on the leaves of *Ricinus communis*.

The silk of this species has hitherto never been wound off, but people were obliged to spin it like cotton.

"It gives a cloth of seemingly loose coarse texture, but of incredible durability; the life of one person being seldom sufficient to wear out a garment made of it, so that the same piece descends from mother to daughter."—(*Atkinson's letter to Roxburgh.*)

It is so productive as to give sometimes 12 broods of spun silk in the course of the year. The worm grows rapidly, and offers no difficulty whatever for an extensive speculation.

On account of the double profit which would be derived from the same area of land cultivating it with castor-oil plant, which produces oil and feeds the worm, an extensive cultivation of this species would be highly recommendable; and if also the cloth is of the coarsest nature, it is, on the other hand, very valuable on account of its durability. May it not be particularly well adapted to mix it in certain textures with cotton?

It is likewise an inhabitant of *Assam*, and Mr. HUGON's observations about this species form an interesting paragraph in his memorandum.

10. *Saturnia* (?) *trifenestrata*, mihi.—Longitudo lineas 24—28.

Diagnosis. ♀ obscure castaneo brunneâ versus finem albedo adpersâ, lineâ transversali albidâ, alis superioribus ad marginem externam fenestris tribus transparentibus lineâ diagonali versus corpus currentibus.

♂ luteus lineâ brunneâ transversali transversè super alas currente, alæ superiores margine externo fuscæ.

Eggs, whitish-yellow; indented 1 line on the longer circumference.

Larva, unknown.

Chrysalis, unknown, (damaged.)

Cocoon, yellow, in a network, transparent, so that the cocoon in the inside is to be seen, of a remarkable silky lustre.

Imago. ♀ of an uniform brown color; towards the end of the wings the like with white flower powdered. An obsolete whitish line runs transversely. The most remarkable in this insect are three glass eyes on the upper wings, beginning from the tendon of the insertion lower than the middle of the wing, and running one behind the other inwards

towards the extremity of the body. The first looks like two, which run together, the second is the smallest.

† of a uniform yellow color, only the outward margin of the wings is brownish, and a transversal line turns over the wings. The glass eyes are wanted, one of the three is a vestige, instead of the two others are two brown spots to be observed.

In those specimens which I saw were gradual transitions from dark brown to light yellow in different individuals to be observed, but always were the females much darker.

This is likewise a valuable discovery of Captain JENKINS in *Assam*, where it lives on the soon tree, but seems to be not much used.

11. HENRY CREIGHTON, Esq. of *Malda*, mentions another silkworm :—

“There is a cocoon produced wild upon the mango tree, which the people of *Malda* gather and mix with *Arrindy* cocoons in spinning.” This species seems to have remained hitherto unobserved.

There is no doubt, that in India exist some more insects, which furnish this precious material. The repeated and so often frustrated endeavours of ingenious men in *Europe* would certainly find in India an ample and highly remunerating field in this branch of speculation.

It would be very interesting to collect all moths which form cocoons, amounting, to judge by analogy, probably to upward of 150 species, to watch their natural economy, and to send specimens of each cocoon to *Europe*, to be there attentively examined.

Many have made the objection that the silk of the Indian species is much inferior.

This is yet an undecided question. The mulberry silkworm degenerates if not properly attended to. What has been done to raise the indigenous species from the state of their natural inferiority? Very much depends upon the cultivation of the worms in houses; 2, the method of feeding them, selecting that vegetable substance, not which gratifies the best their taste, but which contributes to form a finer cocoon; and 3, from the first chemical operations employed before the working of the rough material. But even if the raw material would not be capable of a higher degree of cultivation, the demand for it would, notwithstanding, never cease in *Europe*. All silk produced in Hindustan has hitherto found a ready and profitable market in *Calcutta*, and the demand is always greater than the supply. And that really the roughest stuff of the *Arrindy* silkworm is appreciated in *England*, may I be permitted to conclude the present article with the following fact.

Mr. JOHN GLASS, the Surgeon of *Baglipur*, sent, in the beginning of this century, some of the *Arrindy* silk home, and he wrote :

“ I understand that some manufacturers to whom it was shown seemed to think that we had been deceiving them by our accounts of the shawls being made from the wool of a goat, and that this silk if sent home would be made into shawls equal to any manufactured in India.”

This will be sufficient to show the importance of this article, and that it merits highly the attention of the paternal Government of India, and of all patriotic institutions, particularly of the Asiatic Society in *Calcutta*, which has done hitherto so much for the promotion of science and knowledge, and consequently for the welfare of all nations.

V.—Concerning certain interesting Phenomena manifested in individuals born blind, and in those having little or no recollection of that sense, on their being restored to sight at various periods of life. By F. H. BRETT, *Esq. Med. Serv.*

When the profound and discerning Mr. LOCKE in his Essay on the Human Understanding asserted that ideas were not innate, he meant, no doubt, that so far as the mind's intercourse, in its present condition, with all objects submitted to it was concerned, its noble faculties were destined to be educated only by its legitimate objects of excitation through the medium of the senses appointed for that purpose. His eccentric comparisons of the mind to a dark room, a blank sheet of paper, &c., meant in reality nothing further.

It occasionally happens that in the course of very extensive practice we have opportunities of illustrating this, in cases of restoration to sight of persons born blind, and also in cases of individuals who have known and distinguished colors ; and “ then (as Mr. LOCKE expresses it) cataracts shut the windows,” and if restored to sight many years afterwards, they are in precisely the same situation as though they had never seen before, having not the slightest recollection or idea of colors any more than the individuals born blind. All is to be acquired “ *de novo*.”

I will particularize the following from amongst several which have occurred to me, as they may probably appear interesting to the Society when divested of all purely professional or surgical detail, which have already indeed been communicated to the profession.

No. 1.—The following is illustrative of the fact of all ideas of objects and colors having to be acquired, as well as a verification of the problem

contained in the 8th Section of the 2nd Book of Mr. LOCKE in his chapter on Perception. “ Suppose a man born blind, and now adult, and taught by the touch to distinguish between a cube and a sphere of the same metal, and suppose the cube and the sphere placed on a table, and the blind man be made to see ; (quære: whether by his sight before he touched them he could now distinguish and tell which is the globe and which the cube ?) to which the acute and judicious proposer answered—No.”

A pandit, 18 years of age, native of Saugor, was born blind ; his mother states that she had kept him in a dark room until the 10th day of her confinement, when on taking him to the door and exposing his eyes to the light, she discovered the pearly appearance of the pupils peculiar to cataract, and that he has always been blind. He is intelligent and cheerful, and has been in the habit of finding his way about Saugor and the adjoining country for many years, frequently singing, of which he is very fond. He had little or no inclination to undergo the operation,—at least not sufficient to overcome the fear which he entertained. He could perceive the light, and had acquired the habit of rotating the head constantly in progression in a regular and curious manner to the right and left, with a view, I imagine, of admitting the light to the retina obliquely between the circumference of the cataract and the under edge of his iris. It was a long time before his relations could persuade him to submit to an operation. He had requested to be taken to me some months previous ; was gratified at being told that he might be made to see like other people ; but the slight inconvenience attending the introduction of a few drops of the solution of belladonna into the lids, and my holding the lids to try how they should be supported, annoyed him—and he said he would much sooner go home and eat his dinner. “ What do I want with being restored to sight ?” His mother likewise expressed her disbelief as to a person born blind being made to see. The principal pandit of the *muhallah* at length overruled the objections. The operation was performed on the 28th of August. He complained of but little pain, and indeed there was scarcely any inflammation whatever produced by the operation. He immediately became conscious of a considerable increase of light.

The eye-balls, as in all cases of congenital cataract, moved about without any control, which, together with a very prominent brow and much spasmodic action of the lids, offered some obstacles. So little irritation had occurred, that I operated on the 30th August on the left eye, which resembled the former operation in every particular. No inflammation followed, but the right eye had become inflamed, in

consequence of which his eyes remained bandaged for several days, and it became necessary to bleed him. He expressed himself as sensible of a remarkable change having taken place: the light was most distressing to him, and continued so for some time. On the eighth day the absorption had proceeded very satisfactorily: several substances of various colors were presented to him. He could not recognize any of them, until he had made himself acquainted with them by the sense of touch. He brought them very close to his eyes, moving his head in his accustomed peculiar manner. Whatever he attempted to reach, he always missed his aim. He expressed himself as highly gratified, and confident that he would see and know every thing, but did not like too much interrogation. On the 12th day he came to me again. The eye-balls were no longer rolled in their former vacant manner. He had acquired the power of directing the left eye, which had been most instructed, on objects; the right eye, from inflammation, having remained bandaged. A lady shewed him her shawl: he said it was red, which was correct; but did not know what it was, until examined by the hand. The platform in front of the house was recognized as green, and his mother said he had been examining many things at home. The absorption of the cataract has proceeded, leaving two-thirds of the pupil of the left eye quite clear; some inflammation still in the right. He said he was no longer afraid of me, and that he would submit to any thing I recommended. On the 16th of September he walked from the town to see me, accompanied by his mother. He had gained much information during his absence. The pupil of the left eye had become almost entirely clear. He said he had seen a great number of trees on the road, the lake, and a buggy passing by. He had made himself acquainted with several things. What is this?—A lota. This?—A pawn leaf. Which answers were correct. A small hooka was shewn him: he touched it, and was told what it was; several things were then presented to him and the hooka was again brought. He observed, "I cannot tell; you have submitted so many things to me, that I am confused, and forget their names." He felt it and then exclaimed, it is the same hooka. Presently it was shewn him a third time; he recognized it after having carefully viewed it from top to bottom without touching. He observed a book, remarking that it was red; but he knew not that it was a book until told so. It was presented to him a few minutes afterwards, and he recognized both the color and the book. He said he was extremely happy and gratified with all he saw. He followed me with his eyes as I moved about the room, and pointed out the different positions I took. He

recognized distinctly the features of his mother's face. She hid it under her chadder; he laughed, and observed that she had done so, and turned his face away. He said, "I can see every thing; all I want more, is time to learn what they all are; and when I can walk about the town, I shall be quite satisfied." He could not ascertain whether any thing was round or square, smooth or rough. He distinguished the following: some partridges, the cage and the cup containing the water. The color of their plumage he correctly stated; also the windows, the fields, the sky, a child in arms, &c. On the 7th he again came to see me. He pointed out every feature in his mother's face, her hair, the color of her dress, the different distances and positions which she purposely took, and when changing places with another woman, selected her out. He stated that if I would bring the red book I shewed him yesterday, he would recognize it. I accordingly brought him a red morocco box much resembling the book, but smaller; he said it was the book! At this period his knowledge of the shapes of bodies and their sizes was very imperfect, especially the latter. He directed his hand straight to whatever things were now presented before him. The last time I saw him, a small ivory looking-glass, a paper-cutter, and a cut jelly-glass, were placed on the ground; they were shifted and changed, and he distinguished each respectively. He was much amused and laughed heartily. I gave him the looking-glass, in which he noticed his face, and said it was like other people's, *achchha*.

It will appear, therefore, that his judgment of distances, colors, notions, and positions, was very considerable. That of size and form was to be acquired more tardily.

From this period I quitted Saugor, and have heard nothing further of him.

No. 2.—The next is a similar instance of an individual who had never seen before,—a Brahman boy of 10 years of age, residing at the *Kherie Pass*, near the *Dehra* valley.

A few days after the first operation when the bandages were removed, the principal circumstance worthy of note was the confusion and embarrassment of the mind, arising from new and unaccustomed impressions and the dazzling influence of light.

On the seventh day he had acquired some voluntary power over the ball of the eye, being able to steady it somewhat, and fix it on any object he wished to discern, but only for a few moments. He had after repeated practice acquired a knowledge of most colors, but it was not until the twenty-sixth day from the first operation that he could be said to have a tolerable acquaintance with the visible world. Dur-

ing this period, when the absence of pain and inflammation permitted, (for it was necessary for him to undergo several operations,) the bandages were removed before and after sunset, and his attention was directed to men sometimes standing, sometimes moving; also to the tent, sky, trees and their foliage, animals of different kinds, the colors and figures and motions of which he was able in time to discern.

There was no correspondence, however, for a long while between the sight and touch, neither did he for several days direct his eyes straight to objects so as to examine them minutely. At night he would contemplate the stars, and the flame of a candle, and the features of my face, &c. Debility, the necessary result of the treatment, &c. in a delicate frame, was one cause of the slowness of progress. As he gained strength by an improved diet, his vision greatly improved.

He was observed to take up various objects and notice them; latterly I was in the habit of calling him into my tent when at breakfast. He noticed the cups and saucers and their patterns; chintz on the canvas; and he observed attentively a hooka, describing the bell (cut glass) as bright; noticed the snake, and mouth-piece (silver), and saw distinctly the smoke ascending.

On the 20th of December he walked several yards without assistance. A lady gave him a colored chintz cap, with which he was much pleased, and he distinguished on it the colors of green and red, and the white ground. As his new sense could scarcely be said to have been exercised more than fourteen days, further observations could not be made as to his judgment of distances, positions, forms, and motions.

No. 3.—A similar result, as far as phenomena, occurred in a boy of 12 years of age, though his acquirements were more rapid, from his natural mental intelligence being superior to the former cases: the cause of his blindness was disease after birth from the small-pox. The nature of the operation being the formation of an artificial pupil at the outer corner of the eye, it is unnecessary to repeat the details which are so similar to the preceding, and though he had seen for some weeks of his early existence, of course he had to acquire all '*de novo*.'

No. 4.—There are others who have been restored to sight who had lost it at a more advanced period of life—say five or six years of age and upwards, and when restored exhibit peculiar phenomena more or less interesting in proportion to the degree of remembrance they may possess of their former vision. And this was particularly remarkable in a young man of 25 years of age, the brother of the boy mentioned in case No. 2, who had become blind when only 5 years

old; and which is remarkably interesting in a physiological point of view, as shewing the power of the retina to preserve its susceptibility to light for twenty years, though not the only case recorded. There was certainly in this case a great approximation to the phenomena manifested in congenital blindness, but there was not that marked ignorance in recognising objects at first sight, nor that palpable want of correspondence between the touch and sight, but both existed to some extent. It was also curious that he should become blind after five years of the same disease with which his brother was born blind.

I recollect restoring a man, aged 35 years, who had been blind for a period of twelve years from the venereal disease, causing closure of the pupils. This man, after an operation for artificial pupil, recognised, of course, every thing perfectly the moment he was permitted to look about him, and still enjoys a very tolerable share of vision at *Cawnpore*.

VI.—*Memorandum of the progress of sinking a Well in the bunds of Chandpur, near the foot of the Hills. By Mr. WILLIAM DAWE, Conductor, Delhi Canal Department.*

In sinking wells through the soils, without and within the lower range of hills, I have seen repeated failures owing to the usual mode adopted in digging for the water, (i. e. with perpendicular sides;) and as I was only about 400 yards from a branch of the *Jumna*, the level of its water about 14 feet below the surface of the top of the proposed well, I calculated upon finding water at 20 feet deep at the utmost. I therefore commenced digging 42 feet diameter, contracting as I sunk, and this admitted of leaving a couple of winding steps to bring up the contents by basket loads, in preference to being drawn up with a drag-rope, (which method could not well be adopted, the top excavation being so wide.) At the depth of 24 feet I was apprehensive that the work would have been a failure, owing to the vast accumulation of heavy boulders, from 4 to 10 maunds weight, which I had no purchase to get up. This obstacle was got over by the simple method of expending one for every step of the winding roadway, always taking the precaution of letting the boulders sufficiently into the bank to prevent the possibility of their falling down on the work-people below. By this method down as deep as 37 feet the boulders were expended as we came on them, and as the soil there had a more favorable appearance for working, and there was a probability of soon getting water, and the space had become so contracted,

I was obliged to commence sinking perpendicular, which was carried on till we at length found water at 72 feet deep. The boulders found in the latter part of the work were only few, but they were of the largest size, and those were got rid off by excavating recesses in the sides and depositing them therein. The above excavation down to 72 feet was completed for 120 sicca rupees.

Part of the cylinder having been built, it was sunk in June, where I found the water had sunk 7 feet 6 inches lower. We sunk further 14 feet, when we got to a bed of clear pebbles, and bedded the well ring on small boulders, with 6 feet 6 inches water; and as the driest season has arrived, we may expect always to have a plentiful supply of good water from a total depth of 86 feet below the surface.

MEMORANDUM OF THE SOIL IN THE CHANDPUR WELL.

- Feet 1. Clayey soil.
- 2 to 7. Light soil, consisting of clay and sand, the proportion of sand increasing with the depth.
- 8. A vein of sand.
- 9 to 11. Sand with slight mixture of clay.
- 12 to 14. Fine sand.
- 15. River sand.
- 16. Coarse river sand.
- 17. Ditto ditto, with gravel and small boulders.
- 18. Large gravel and boulders.
- 19 to 25. Ditto ditto, some of the boulders very large.
- 26 to 27. Ditto ditto, large boulders, with a mixture of clay.
- 28 to 30. Ditto ditto, with a layer of immense boulders.
- 31 to 32. Ditto ditto, and small boulders through which a spring of water has passed, shewn by the stones being without a particle of sand mixed with them.
- 33 to 36. Large gravel with large boulders.
- 37. A vein of old spring, as above.
- 38. Gravel with small boulders.
- 39. A vein of river sand with a mixture of small stones.
- 40 to 41. Gravel with large boulders.
- 42 to 46. Large gravel with small boulders.
- 47 to 48. A vein of old spring—small boulders.
- 49 to 54. Gravel with large boulders.
- 55 to 56. Vein of river sand, slightly mixed with gravel.
- 57 to 64. Gravel with small boulders.
- 65 to 66. A vein of fine river sand.
- 67 to 69. Gravel with no boulders.

- 70 to 72. Vein of fine river sand—(water found here).
73 to 76. Fine sand, with a mixture of clean gravel.
77 to 79. Gravel with a mixture of yellow sand.
80 to 83. Clear fine river sand.
84 to 86. A bed of clean pebbles, and the well ring bedded on small boulders.

N. B. The water sunk while the cylinder was being built to 79-6.

Note by Lieutenant W. E. BAKER, Engineers, Assistant Superintendant of Canals.

The situation of this well is close to the southern base of the outer range of hills, where they fall away into the valley of the *Jumna*, a branch of which now occupied as the bed of the *Delhi* canal, passes within a short distance of it. The strata, of which the section is thus exhibited, are evidently the deposits of a stream, having, for the greater part of the time, at least as strong a fall and as rapid a current as the *Jumna* at the same spot now has—and they are precisely what might now be forming in the *Jumna*, were that river raising its bed—even the strata of small rounded stones, in which Mr. DAWE has attributed the removal of sand and smaller gravel to the action of formerly existing springs, have their representatives in the numerous shingle banks of the *Jumna*.

The most striking circumstance, however, illustrated by Mr. DAWE's observations, is the impermeability of these river deposits to the water of the neighboring channel, the stream of which is never dry. This circumstance was even more strongly exemplified in the same vicinity—at the village of *Rayanwalla*—where, within the inclosure of the canal chowkey, and not 60 yards distant from the water's edge, it was desired to sink a well to supply clear water to such of the establishment as remained there during the rainy season, when the river water is turbid and unwholesome. The shaft was of small diameter, as water was confidently expected at but little below the level of that in the canal: no trace of it, however, was met with to the depth of 60 feet—when, from the smallness of the shaft, it became dangerous to proceed further; the attempt was therefore abandoned and the shaft filled up again. The strata pierced through on this occasion consisted of large and small boulders, gravel and sand materials, of which we find it impossible to form a dry bund, even where the difference of level is only 2 or 3 feet—while here, the excavation must have gone at least 50 feet below the canal level.

In apparent contradiction to this, is a well known fact, connected with the rivers flowing through the northern parts of *Rohilkhand* into

the Ganges. I mean the disappearance from the surface, near where they leave the outer range of hills, and then again emerging at the distance of 10 or 12 miles lower down; thus shewing the complete permeability of the gravel beds through which they must be supposed to trickle—and that this is in some measure the case in the *Jumna* also, is rendered probable by a circumstance which came under our observation in the great drought of 1833-34.

In order to supply the excessive demand for water for irrigation, it became necessary to throw a gravel bund right across the *Jumna*—just below the head of the canal; and at this very period, as appears from a record kept in the Executive Engineer's Office at *Agra*, a slight diminution only of the waters of the *Jumna* at that place was observable.

VII.—*The History of Labong from the Native Records consulted by Dr. D. RICHARDSON, forming an Appendix to his journals published in the preceding volume*.*

The annals of *Labong* reach back to the same remote and fabulous period as those of the neighboring nations. In the year 1118, (A. D. 574,) after GAUDAMAN had obtained *nib-ban*, or eternal rest, two holy men, WATHOO-DAY-WA† and TUKA-DANDA, (having first buried a shell with the spiral turned the reverse way,) by prayers and holiness raised from out the earth the walls, gates, and ramparts, and sunk the fosse of *Labong*. They marked the site of the pagoda, and during two years employed themselves in calling together the people from the surrounding forests and small villages. In 1120 they raised to the throne RAMA or ZAMMA-DAY-WE, daughter of the king of *Chandapur* (or, *Wintian*, the capital of *Saroarata-ty-ne*), and widow of a prince of *Cambodia*. She had twin sons, MAHANTA-YATHA. The elder succeeded her in *Labong*, received the common title of “SEN-BUR SHEEN,” or Lord of the White Elephant, for having caught one of that color. AINDAWARAJA, the younger, built and reigned in *Lagon*. In *Labong* (the Magadharrame of which is HARI-BOUNG ZAYATYNE) from RAMA-DAY-WE to ADUTZA-WOON-THA, who built the pagoda (*assein dayá*) there reigned 35 kings, and from ADUTZA-WOON-THA to BENYA-THOHA 19; in all 54 kings reigned in *Labong*. BENYA-MEN-YEA, called in *Ava History* DOLANA BENYA-TSO-MEN-YEA, the son of BENYA-THOHA, succeeded him, and reigned ten years in *Labong*,

* We have already quoted from this document in manuscript; see Appendix General Tables, page 135.—ED.

† *Vasu-deva*?—ED.

three in *Kim-yea*, five in *Wen-congkan*. In 651* he crossed the Thaluen river, and married a daughter of THOOTHATHOMA, king of Pegu, with whom he received in dower four hundred Taliens or Peguers and their wives, the town *Yain Salen* and its dependencies, and returned to his country; and on Thursday the full moon of Kasong, (May,) 656, at midnight, founded *Zama-pada-pur-there-nagara-nawara-razatani*, or *Zimmay*, measuring from east to west five hundred tals†, from north to south four hundred and fifty tals; built his palace of *Zayaboungme*; reigned thirty-seven years; in 623 died, aged eighty, and was succeeded by his son NGATHEN-POOTCHOO, who in 695 was succeeded by his son TSO-TCHOMTA-YUNG; and he in the same year by his son NA-TCHOON-TARCUNG; and he in

698 by his son NGA-THENPOO; and he was succeeded in

707 by his son TSO-KANPEW; he in

709 by his son TSO-BOA-YOU; and he in

731 by his son GOONA; and he in

739 by his son-in-law GNATHENMIMA; and he in

742 by his son THAMBI; and in

782 his son TSO-BENYA succeeded; and in

817 his son TSO-NEAT succeeded; and in

825 his son BENYA TSOOTHEE, called also *There-tha-da-matilanka-seek-ka-wa-te-ya-za*; in

865 his son TSO-MYNEAE succeeded; and in

899 his son BENYA TSAY; in

904 his son TSO-MYNE; in

906 his daughter ZALA-PABA, called also *There-thadama-maha-day-we*.

920 SEN-BUE-MYA-SHEEN, king of Pegu, took the town, but allowed the queen to enjoy the revenues with the royal title till her death, when he gave the town and revenue to his son NARATA-TSO, the *myo-tsa*, (literally, town-eater: the person who enjoys the revenue of a town amongst the Burmese is so called). SARAWADI, in the

* To account for the discrepance in the dates of *Labong* and *Zimmay*, it is to be stated that the common era has been twice altered; once 624 years after the death of GAUDAMAH, by THERE MOUNGDAI, king of *There*; KIT-TARA, who dropped 622 years, and commenced from 2. The second alteration was made by THENGARET, king of *Pagan*, in the seventeenth year of his reign, 562 years from the reign of THERE MOUNGDAI, who dropped 560 years, and again commenced with 2. *Labong* was founded 1118 years after the death of GAUDAMAH; and *Zimmay* 656 years after the alteration of THENGARET, or 1838 years of the death of GAUDAMAH; giving a period of 720 years to 54 kings, and average of thirteen years and some odd months and days to each reign. (See Chron. Appendix, page 84.—ED.)

† The tals, is seven cubits.

year 990, after the death of SEN-BUE-MYA SHEEN, the chief of *Moung-nam*, rebelled in *Zimmay* and shook off the Peguan authority; and in 992, THA-DAN-DAMA-YAZA, the grandson of SEN-BUE-MYA-SHEEN retook it. 1125, *Tso-oung* recovered its independence, which it enjoyed only a short time, when it was taken by SEN-BUE-SHEEN, king of *Ava*, son of the great ALOMPRA. 1136, BENYA-SA-BAN, and KAWHEELA, the eldest brother of the present *Chow-tchee-weet* of *Labong*, who was *Myo-tsa* of *Lagon*, rose against THA-DAN-MENDEU, called by the Shans *Bogoung-bue*, (a white-headed chief.) The Governor of *Zimmay* under SEN-BUE-SHEEN again prevailed and transferred their allegiance to *Bankok*, to which they have continued subject ever since. KAWHEELA had six brothers, three others of whom have received from the king of *Bankok* the title of “Chow-tcha-Weet,” or “Lord of Life,” one of the many titles he himself enjoys, and the other three have been Chows Mouns of the other towns. The present Chow-tcha-Weet, who is now seventy-two years of age, is the youngest and last of the seven brothers. He has five children by his first chief wife, viz. the wife of CHOW HOUA of *Labong*; the wife of a chief who is at *Bankok*; CHOW RAJA BOOT, the eldest son; another daughter who is deranged, but quiet and inoffensive. CHOW HOUA of *Labong* will probably succeed to the *zazabolenoe*. He is certainly, from his intelligence and habits of application to business, incomparably best fitted to do so. But it is the opinion of the northern Tsoboas that the CHOW HOUA of *Zimmay*, who is even now little inclined to submit to the old Tsoboa’s authority, will not quietly acquiesce, and that at the death of the present Tsoboa there will be some bloodshed in the country.

VIII.—*Suggestions on the Sites of Sangala and the Altars of Alexander; being an extract from Notes of a Journey from Lahore to Karichee, made in 1830. By C. MASSON.*

“At length after a long march we arrived at *Hurreepah*, having passed the whole road through close jungle. East of it was an abundance of luxuriant grass, where, with many others, I went to allow my nag to graze. On rejoining the party, I found it encamped in front of the village and an old ruinous castle attached to it. Behind us was a large circular mound or eminence, and to the west was an irregular rocky height crowned with remains of buildings, shewing fragments of walls, with niches in them. This elevation was undoubtedly a natural object; the former, being of simple earth, was probably artificial. On going to examine the remains we found two immense

circular stones with large perforations, which we were told were once worn round the ancles by a celebrated fakeer, who resided here, and who among other proofs of mortification and sanctity, accustomed himself to eat earth and other strange substances. Between our encampment and this natural height was a small space of jungle, in which are a few *pípal trees* in the last stage of existence. The old fort, an erection of other days, is built with burnt bricks; its walls and towers are very high, and its extent considerable, but time has made evident ravages in its defences: its bulwarks have in many places tumbled down, and it is no longer occupied. Surrounding the north-east angle of the fort, is a small swamp. We were cautioned by the inhabitants, that we should be much annoyed by a species of gnat, called *muckah*, which swarm by night in these jungles during the rainy months, but which we had not hitherto seen. To avoid these, we decamped towards evening, and fixed ourselves on the summit of the circular artificial mound before mentioned.

It was impossible to look upon the prospect of the fort and swamp before us, and beneath our feet, upon the ground on which we stood, without feeling the conviction that we were beholding the fort and lake of *Sangala*, and that we stood on the eminence protected by the triple lines of chariots, and defended by the *Kathæi*, before they allowed themselves to be shut up in their fortress.

The evidence of *ARRIAN* is very minute as to this place, and he furnishes excellent data which cannot be mistaken in their application. While *ALEXANDER* was proceeding to occupy the kingdom, abandoned by its monarch the second *PORUS*, he received intelligence that the *Kathæi*, the most warlike of the Indian nations in those parts, in confederacy with others, probably the *Malli* and *Oxydracæ*, had collected their forces, and resolved to oppose his progress, if toward them directed. As the occupation of an undefended country presented no field for achievement or glory, he dispatched *HEPHESTION* to effect its settlement, and marched direct against the *Kathæi*. At the period of receiving tidings of the hostile attitude of these Indians, *ALEXANDER* had crossed the *Acesines*, and was marching towards *Lahore*, if we credit the inference that this city represents the capital of the fugitive *PORUS*. He diverged to the south, and having crossed the *Hydraotes* or *Raví*, on the first day arrived at *Pimprama* (possibly *Pind Brahma*, *Brahma's* or the *Brahman's* village) at which he halted the second, and on the third reached *Sangala*, which *ARRIAN* describes as a city with a fort built of brick, at one extremity of which was a lake, not containing much water. He farther informs us that *ALEXANDER* found the *Kathæi* drawn up on the summit of an eminence

opposite their fort, which was not very high or difficult of access; this they had fortified with a triple row of chariots and waggons, placing their tents in the middle. ALEXANDER successively stormed the barriers of wheeled carriages, and the Kathæi sought refuge within the walls of their fortress. Around this he then drew an intrenchment, except at the point where the lake intervened, the bank of which he secured by lines of waggons he had captured, and there stationed a strong division of troops under PTOLEMY to intercept the flight of the garrison, which he naturally concluded, when driven to extremity, would attempt to escape that way—the depth of water, in what ARRIAN calls a lake (or it may be his translator) being, as he himself assures us, inconsiderable. ALEXANDER having completed his line of circumvallation and other precautionary measures, advanced his engines to the assault of the walls. The terrified garrison, as anticipated, by night attempted to pass the lake; their progress was intercepted, and they were driven back with immense slaughter. The operations of the siege continuing, the towers of the fort were overthrown by mines, and it was finally carried by assault.

In the present *Hurreepah* we are able to recognize every feature which ARRIAN so distinctly points out—the fort built of brick, the lake, or rather swamp of water, and the eminence or mound opposite the fort—this last is wonderfully convenient for the mode of defence the Kathæi adopted, from the gentle slope of its sides. Moreover, a trench still exists between the mound and the fort and parallel thereto, which may plausibly enough be ascribed to the line of circumvallation raised by the Macedonian engineers.

With respect to the present fort, however ancient it may be, it is not of course the identical one that was besieged by ALEXANDER, and which ARRIAN informs us was razed to the ground—but in all probability it occupies the precise site, and may be built with the materials of the one sacrificed to Grecian resentment.

It is necessary to state with regard to *Hurreepah*, that native tradition assigns to the spot the commencement of a large city, which extended as far as *Chichee Wutnee*, twelve coss southward—the period of its existence so remote, that it is not known whether the Hindu or Muhammedan religion was then professed—and that it was destroyed by an immediate visitation of Divine anger, excited by the crimes of the sovereign, who appropriated to himself the wives of his subjects. The eminence, so often noted, is covered with fragments of bricks and earthen-ware, as is the entire neighborhood of the place. Accident prevented me from observing if any remains of buildings were discernible in the next march we made to *Chichee*

Wutnee, as we travelled by night—but I conclude not, as nearly the whole road led through marshes.

The identification of *ARRIAN's Sangala* would not be merely curious as a point of illustrative geography, but of importance as directing us to the spot where *ALEXANDER's* operations ceased on the banks of the *Hyphasis*, and affording a better clue than we were hitherto acquainted with for the detection of the site of the famous altars erected by the illustrious Greek as lasting monuments of his progress and victories. Various have been the inferences drawn as to the position of these celebrated structures—but I hesitate not to suggest that they were erected on the banks of the modern *Gharra*, composed of the united streams of the *Beyah* and *Sutlej*, and at that point or nearly where a direct line drawn from *Hurreepah* would meet the river,—that is, (if there be faith in modern maps,) in that portion of it which divides the Sikh and Bhawelpur territories. *ARRIAN* describes *Sangala* as two marches from the *Hyphasis*, and *Hurreepah* is distant from the *Gharra* eighteen or twenty coss (27 or 30 miles). It is impossible not to admire the correctness of *ARRIAN* in his relation of *ALEXANDER's* progress in the *Panjáb*, and I feel confident, that had I been fortunate to have had him for a companion when a wanderer in that country, the vestiges of his altars, if any remain, might have been detected. *PLINY* and, I believe, *STRABO*, have placed them on the eastern bank of the *Hyphasis*: this, if correct, will not affect general circumstances of locality.

The ancient name *Sangala* appears a composition of *sang* and *killah**, or literally, the stone fort, and figuratively applied to any strong fort, owing to position, construction or otherwise, without reference to the materials of which it may be built. The modern name denotes in *Hindí*, the green town, and would seem to refer to the luxuriant pastures to be found east of it.

The learned *WILFORD* has accused *ARRIAN* of confounding *Sangala* with *Salgeda*, which he says still exists near *Calanore*, and agreeing minutely with the historian's description. *Sangala* he describes as situate in a forest, and sixty miles west by north of *Lahore*. *Hurreepah* is also situate in a forest, or intense jungle of small trees and bushes, but is south-west of *Lahore*, and at a somewhat greater distance than sixty miles. The fortress of *Sangala*, so particularly described by *ARRIAN*, must clearly by deduction have been south of *Lahore*, and, as it was only two marches from the *Hyphasis*, could never have been the *Sangala* of *WILFORD* to the north-west of *Lahore*.

* This derivation from Persian and Arabic is, we fear, hardly admissible.—ED.

This site deserves farther attention, as we find that *Sangala* was, subsequent to its destruction by ALEXANDER, re-edified under the name of *Euthydemia*, in honor of the father of the reviver—but who this reviver of *Sangala* may have been, whether DEMETRIUS, MENANDER, or APPOLLODOTUS, has not been determined by the few who have bestowed attention on this obscure but highly interesting portion of ancient history.

IX.—*Chinese Account of India. Translated from the Wän-hëen-t'hung-kaou, or "Deep Researches into Ancient Monuments;" by Ma-twan-lin; book 338, fol. 14.*

[The great interest which now prevails respecting the middle age of Indian history, persuades us to transfer to our pages the following article from the London Asiatic Journal for July, August, 1836. The author or translator's name is not given.—ED.]

Tëen-choo (or India) was known in the time of the latter Hans; the country was then called the kingdom of *Shin-too**.

Note of the Chinese Editor.

[Chang-këen, when first sent (B. C. 126) into Ta-hea (or Bactriana), saw stems of bamboos, as in the Shoo country (modern province of Szechuen). He inquired how they obtained these bamboos; some men of Ta-hea replied: "Our merchants procure them in the markets of the kingdom of Shin-too, which is Tëen-choo. Some call this kingdom Mo-kea-to†; others name it Po-lo-mun (country of the brahmans); it is situated to the south of the Tsung-ling‡ (or Blue Mountain), distant some thousands of *le* to the south-east of the Yuë-che§ (Massagetæ, or Indo-Scythians).

This country is about 30,000 square *le* || in extent; it is divided internally into five Indias; the first is termed Middle or Central India; the second Eastern India; the third Southern India; the fourth Western India; and the fifth Northern India. Each of these divisions of the territory contains several thousands of *le*; and fortified cities, surrounded with walls, and towns of the second order, are placed a few hundred *le* apart.

Southern India is bounded by the Great Sea (the Gulf of Bengal); Northern India is situated opposite to the Snowy Mountains¶; on the

* In Sanscrit सिन्धु, *Sindhû*, Hindustan.

† मगध *Magadha*.

‡ A chain of mountains to the north of Cashmere, which separates Eastern Turkestan, or Little Bucharía, from Great Bucharía.

§ M. RE'MUSAT has given a translation of Ma-twan-lin's account of the Yuë-che in his *Nouv. Mélanges Asiat.* t. i. p. 220.

|| According to Dr. KELLY (*Orient. Metrol.*, p. 64), 200 *le* are equal to one degree of the meridian = 69·166 English miles; whence 30,000 *le* will give about 10,375 English miles.

¶ *Seug-shan*, an exact translation of the Sanscrit हिमालय *Himálaya*, 'abode of snow,' or rather हिमालयगिरि *Himálaygiri*, 'mountain whereon the snow rests.'

This division of India must include the modern Cashmere, the description of which, by MASÚ'DI, the Arabian historian, coincides in a striking manner with that of the Chinese author: "The kingdom of Cashmere," he says, "which forms part of India, is surrounded with very high mountains; it contains a prodigious number of towns and villages; it can be entered only by a single pass, which is closed by a gate."

four sides, there are mountains sloping to the south, and a valley which crosses them forms the gate (or entrance) of the kingdom. Eastern India is bounded on the east by the Great Sea, as well as by Foonan (Pegu) and Lin-e (Siam), which are separated only by a little sea. Western India adjoins Ke-pin (Cophenes) and Po-sze (Persia)*; Central India is situated in the middle of the four other divisions of India.

All these kingdoms had kings in the time of the Han dynasty. There is besides the kingdom of Yuen-too, which is distant from Chang-gan† 9,800 *le*; it is 2,800 *le* from the residence of the Governor-general of the Chinese provinces in Central Asia‡. To the south it adjoins the Blue Mountains; to the north its frontiers are contiguous to those of the Woo-sun.

Yün-sze-koo has stated that Yuen-too is no other than Shin-too; and Shin-too is T'een-choo; there is no difference but in the pronunciation more or less strong.]

From the kingdom called Kaou-foo§ of the Yuě-che, going to the west and south, as far as the Western Sea (the Indian Ocean); to the east, as far as Pan-ke; all these countries form the territory of Shin-too. It has a number of fortified towns; in about a hundred, commandants reside. There are also different kingdoms; ten of them have kings. There is, however, little difference between them, and the whole have the collective denomination of Shin-too.

Note of the Chinese Editor.

[The narrative of Foo-nan states: "The kingdom of She-wei (Kapila) belongs to that of Kea-she|| in India, which some call the kingdom of Pho-lo-nae, and others the kingdom of Sze (or) She-pho-lo-na-sze."

Choo-fa-wei, in his *Füh-kwō-ke* (Memoir on the kingdoms of Füh, or Buddha), states that the kingdom of Pho-lo-nae (or Benares) is situated 1,480 *le* south of the kingdom of Kea-wei-lo-wei (or Kapila). In the account of the kingdom of Ching-le by She-fā, it is said: "Few oxen are killed in this kingdom; the sheep of the country are black; their horns, which are slender and apart, may be four feet long; one is killed about every ten days, but if any of these sheep happen to die of disease, the inhabitants use the blood of bullocks. These animals live a long time;

* See for an account of these countries by Ma-twan-lin, the translation by M. RE'MUSAT, *Nouv. Mém. Asiat.* t. i. pp. 205 and 248.

† Capital of the Hans, situated in Shen-se; now Se-gan-foo.

‡ This position of the kingdom of Yuen-too affords reason to think that it may be the same as that of Shin-too. It is only in the transcription of the Sanscrit word *Sindhú*, the name of the Indus and of the countries bathed by that river, that there is a slight difference. The proximity of the Woo-sun, however, suggests that Yuen-too must comprehend the country in which modern Badakshan is situated.

§ The following account of this kingdom is given by Ma-twan-lin elsewhere (b. 338, f. 27): "The kingdom of Kaou-foo was known in the time of the Hans. It is situated to the south-east of the great Yuě-che (Massagetæ). It is likewise a considerable state. Their manners resemble those of the inhabitants of India, and they are gentle and humane. They carry on much commerce. India, Cophenes, and the country of the Asæ, are three kingdoms which are conquered by force and lost by weakness." The latter expressions are borrowed from the *Taou-tih-king* of Laou-tsze.

॥ काशी *Kāśī* or *Kashī* 'splendid,' epithet of the sacred city of Benares, called वरणासी *Varanāsī* or वरणासो *Varanāśī*. The latter denomination is represented as closely as is permitted by the monosyllabic language of the Chinese (which wants the articulation *ra*) by *Pho-lo-nae*: the Sanscrit व *v* having so often the sound of ब *b*, that they are not distinguished from each other in Bengālī writing: *Sze* (or) *She-pho-lo-na-sze* is also a faithful transcript of ओवरणासो *Srī Varanāśī*, 'the holy, the fortunate Benares.'

the people of this country likewise are very long-lived. Their kings commonly reign a hundred years, and the bullocks live as long as the men. This kingdom is a dependency of India.”]

The royal residence overlooks the river Hǎng or Gǎng (Ganges)* which some call Kea-pih-le. Here is situated the mountain Ling-tseou; called in the language of the Hoo-yu country, Ke-too-keu: it is a green rock, the head (or summit) of which resembles that of the bird tseou.

Note of the Chinese Editor.

[Choo-fā-wei says, in his *Füh-kwō-ke*, that this mountain is situated to the south of Mo-kěē-te†, which is also a kingdom dependent on India.]

At the period‡ when all these kingdoms belonged to the Yuē-che, the latter put their kings to death and substituted military chiefs. They enjoined all their people to practise the doctrine of Füh-teo (Buddha); not to kill living creatures; to abstain from wine; and to conform entirely to the manners and customs of the inhabitants of the country, which is low and damp, and the temperature very hot. This kingdom is traversed by large rivers; the people fight upon elephants; they are of a feeble constitution compared with the Yuē-che.

The emperor Woo-te, of the Hans (B. C. 142 to 87), sent an expedition of about ten persons, by the west and south, in search of Shin-too. All information having been refused to the persons composing this expedition, they could not reach the country§. Under Ho-te (A. D. 89 to 106), several ambassadors from that country came to offer tribute||. The western

* In Sanscrit गङ्गा *Gangā*; this river, in sacred writings, bears also the name of कपिल *Kapila*, and more commonly कपिलधारा *Kapiladhārā*.

† मगध *Magadha*, the southern portion of the modern Bahar.

‡ This important epoch in the history of India may be fixed with precision by means of Chinese historians; and it is not one of the least advantages derivable from the study of the writers of this nation. Ma-twan-lin, in his account of the Great Yuē-che, or Indo-Scythians (book 338, fol. 2), states that the Chinese general Chang-kéen was sent as an ambassador to the Yuē-che, by the emperor Woo-te (B. C. 126), and that, about 100 years after, a prince of this nation, who possessed one of the five governments of the country of the Dahæ, subjected the Getes in Cophenes, and that Tēn-choo, or India, was again subjugated by the Yuē-che. This other conquest of India by the Scythians must be placed, therefore, about the year B. C. 26. Ma-twan-lin adds, that these Yuē che, having become rich and powerful (by these conquests), remained in this state till the time of the latter Hans, who began to reign A. D. 222. It results from hence that the Scythians (or Yuē-che) must have been masters of Western India from about B. C. 26 till A. D. 222, that is, for a space of 248 years. The first invasion of India by the Yuē-che, or Scythians, must have taken place before the reign of Vicramāditya, whose celebrated era, which begins fifty-six years before ours, originated from the complete defeat of the Scythian armies by this Indian prince; an event which deserved to be thus immortalized. See *Indian Algebra*, by Mr. COLEBROOKE, (Preface, p. 43,) and Lassen, *De Pentapotamiâ Indicâ Commentatio*, p. 56. The first of these learned Indianists, from whom we are sure of deriving information, whenever we are engaged in the investigation of a great philological, scientific, and philosophical question respecting India, cites an ancient scholiast on Varāha Mihira, who thus explains the word “*saka*” employed by this astronomer to denote the Samvat era: “epoch when the barbarian kings named *Saka* (the *Sacæ*) were defeated by VICRAMA'DITYA.”

§ This same emperor gained some trifling particulars respecting Shin-too, or India, by his general Chang-kéen, whom he had sent to the Yuē-che, which are preserved by the historian Sze-ma-tsēen, in his *Sze-ke* (book 123, fols. 6 and 7), where it is stated that Shin-too is situated to the east of Ta-hea, the capital of which was the city of Lan-she.

|| At this period, China was still considered as the paramount state of all the half-civilized nations inhabiting Central Asia. It is not, therefore, surprising, that the chiefs of India subject to the Yuē-che, or Scythians, should have thought of sending ambassadors to China, in search of means of delivering their country from

countries (subjected to the Chinese) then revolted, and separated from the empire.

In the second of the years *Yan-he* of Hwan-te (A. D. 159) strangers often came by the way of Jih-nan ('south of the sun;' Tonquin and Cochinchina), to offer presents.

A tradition of this time relates that the emperor Ming-te (A. D. 58 to 76), having dreamed that he saw a man of gold, very large, whose head and neck shone with prodigious brightness, interrogated his ministers on the subject. One of them told him that, in the western region (*se-fung*), was a spirit (*shin*), whose name was Füh; that his statue was six feet high, and his color that of gold. The emperor, upon this, despatched ambassadors to India to learn the laws and doctrine of Füh, and to bring to China his portrait painted, as well as some of his statues. The king of Tsoo (a petty feudatory kingdom of China), named Ying, was the first who believed in this false doctrine (of Füh); hence it was that other persons in the Middle Empire adopted it.

Thereupon, Hwan-te (A. D. 147 to 167) imbibed a great partiality for the *shin* (spirits or genii); he sacrificed repeatedly to Füh-too and to Laou-tsze. The people of China gradually adopted (this new religion): its followers augmented greatly.

In the time of the How and Tsin dynasties (A. D. 222 to 280), no new relation took place between India and China; it was not till the period of the Woo dynasty, that the king of Foo-nan, named Fan-chăn, sent one of his relations, named Soo-wih, as ambassador to India. On quitting Foo-nan, the embassy returned by the mouth of the Taou-keaou-le*, continuing its route by sea in the great bay (or gulf of Martaban), in a north-westerly direction; it then entered the bay (of Bengal), which they crossed, and coasted the frontiers of several kingdoms. In about a year it was able to reach the mouth of the river of India, and ascended the river 7,000 *le*, when it arrived at its destination. The king of India, astonished at the sight of the strangers, exclaimed: "the sea-coast is very far off; how could these men get here?" He commanded that the ambassador should be shown the interior of the kingdom, and with this view he appointed as guides to attend him, two strangers of the same race as the Chinese†, and he supplied Soo-wih (the ambassador) with provisions for his journey, and presents for Fan-chăn, king of Foo-nan, consisting of Scythian horses, and four pieces of valuable woollen stuffs‡.

During this time, the Woo dynasty§ despatched an officer of the second rank, named Kang-tae, as ambassador to Foo-nan, where he saw foreign guides of the same nation as the Chinese. To all the questions he put to them, concerning the manners and customs of the people of India, they answered him as follows: "The doctrine of Füh is that which is in vogue in this kingdom. The population is very numerous; the soil rich and

barbarians, by the aid of the Chinese armies, which could oblige their revolted subjects to return to their duty. Thus we may easily explain facts apparently so improbable.

* The Irrawaddy, in the Burman empire.

† Literally: "in consequence, as attendants or guides (he had given to him) two men, foreigners, of the same species as the Sung." By *Sung-jin*, 'men of Sung,' Ma-twan-lin designates the Chinese, who were so called in his time; he wrote under the Sung dynasty, in the latter part of the thirteenth century. The sense

which 陳 *chin* has received is that which it bears in the phraseology of the *Le-ke*, cited by the dictionary of Kang-he, in explaining this character.

‡ 四疋 *Sze-pei*.

§ One of the three dynasties which reigned simultaneously over three divisions of the Chinese empire: it subsisted from A. D. 222 to 280.

fertile. The king who rules here has the title of Maou-lun* ; the suburbs of the fortified city in which he resided are watered by rivulets, which flow on all sides, and fill the deep ditches surrounding the city. Below it flows the great river (the Ganges). All the palaces are covered with sculptured inscriptions, and other ornaments in relief. A winding street forms a market, a *le* in length. The dwelling-houses have several stories†. Bells and drums are their instruments of music, and the dress of the people is adorned with fragrant flowers. They travel by land and by water ; their commercial transactions are considerable, in jewels and other valuable articles of luxury, and every thing which the heart can desire is procurable here. On every side, to the right and to the left, you behold only agreeable and seductive objects ; the houses are overshadowed by foliage, and cooled by the motion of waters of all kinds. There are sixteen great kingdoms which are remote from India ; some distant 2,000 *le* ; others 3,000. All these kingdoms honor and respect India, which they regard as placed between heaven and earth."

The fifth of the years *yuen-kea* of Wăn-te, of the Sungs (A. D. 428), the king of the kingdom of Kea-pih-le (Kapila) in India, named Yuë-gae ('beloved of the moon'‡), sent an ambassador to him to present him with letters of submission (*peaou*), and to offer diamonds, valuable rings, bracelets, as well as other ornaments of worked gold, and two parrots, one red and the other white.

The second of the years *tæ-she* of Míng-te (A. D. 466), an ambassador came to offer tribute. This ambassador had the rank of lieutenant-general of the army.

Note of the Chinese Editor.

[The eighteenth of the years *yuen-kea* (A. D. 441), the king of the kingdom of Soo-mo-le sent an ambassador to offer the products of his country. The second of the years *heaou-këen*, of the emperor Heaou-woo (A. D. 455), the king of the kingdom of Kin-to-le§ sent a superior officer to offer gold coin and precious vases. On the first of the years *yuen-wei*, of Fei-te (A. D. 473), the kingdom of Pho-le (¶) sent an ambassador to offer tribute. All these kingdoms practised the doctrine of Füh.]

In the beginning of the years *tëen-këen* of the dynasty Leang (A. D. 502), the king of India, named Keu-to, sent his great officer, named Choo-lo-ta, to present letters of submission, and to offer vases of crystal, perfumes of all sorts, precious talismans, and other articles of this kind.

This kingdom (India) is traversed by great rivers||. The spring or

* This title must be the Chinese transcription of महारण *Mahârana* ; there can be no doubt in respect to the first syllable, *maha* (in composition) 'great ;' but the Sanscrit word represented by *lun* (or *run*, *ran*) is less certain. At all events, this must be a king of India whose reign corresponded with this date, between A. D. 222 and 280.

† This is the case at Benares, where many of the houses have seven or eight stories ; and the numerous temples and public edifices are covered with sculptures and bas-reliefs.

‡ In Sanscrit, *Chandrakânta*, 'well beloved of the moon,' a name also given to a precious stone ; or rather it would be *Chandrananda*, 'joy or delight of the moon,' cited in the fifth table of the *Ayeen Akberi*, in the history of Cashmere. [Dr. MILL suggests that this monarch is Chandrasri. See p. 100 of Genealogical Appendix. —ED.]

§ The *Gandari* of Herodotus and Strabo ? In Sanscrit गन्धरि *Gandhari*, or गन्धरा *Gandhara*.

|| " *Kwô lin ta keang*," literally, 'the kingdom overlooks great rivers.'

source, Sin-taou*, issues from mount Kwān-lun†; its waters then divide into five streams, and form what are termed the affluents of the Ganges (*ming Gāng shwuy*). Their waters are sweet and beautiful, and at the bottom of their bed they deposit a real salt, the color of which is as white as that of the essence of the water (*shwuy tsing*).

In the time of Seu-en-woo, of the dynasty of the latter Wei (A. D. 500 to 516), South India sent an ambassador to offer as presents some horses of a fine breed. This ambassador stated that the kingdom produced lions, leopards, panthers, camels, rhinoceroses, and elephants; that there was a species of pearl there, called *ho-tse*, similar to talc (*yun-moo*), the color of which was yellowish red (*tse*, 'reddish blue'); if it is divided, it disperses like the wings of the cricket; if it is heaped up, on the other hand, it becomes compact, like threads of silk strongly woven. There were diamonds resembling amethysts (*tse-shih-ying*). When purified a hundred times in the fire, without melting, this diamond is used to cut jasper (*yu* stone). There were also tortoise-shell (*tue-mei*), gold (*kin*), copper (*tung*), iron (*tē*), lead (*yuen*), tin (*sēh*), fine muslins embroidered with gold and silver‡; there are also a variety of odoriferous plants, *yūh-kin*, sugar-canes, and all kinds of products; honey-bread (or solid honey§), pepper, ginger, and black salt.

On the west, India carries on a considerable commerce by sea with Taksin (the Roman empire), the An-se (or Asæ, Syrians); some of the Indians come as far as Foo-nan and Keaou-che (Tonquin), to traffic in coral necklaces and pearls of inferior quality (or which only resemble pearls—*san-kan*). These merchants are accustomed to dispense with books of accounts (in their commercial transactions). Teeth (elephants' or rhinoceros'?) and shells form their articles of exchange. They have men very skilful in magical arts||. The greatest mark of respect which a wife can show towards her husband is to kiss his feet and embrace his knees: this is the most energetic and persuasive demonstration of the interior sentiments. In their houses, they have young girls who dance and sing with much skill¶. Their king and his ministers (*ta-chin*, ministers about the sovereign) have a vast number of silk dresses and fine woollen fabrics.

* These curious details, the exactitude of which may excite surprise, prove that the Chinese historians were better informed than might be expected of facts and circumstances concerning Central and Western Asia. We are indebted to Mr. COLEBROOKE for the means of ascertaining the accuracy of the Chinese writer. In fact, the Chinese words *Sin-taou* are but the transcription of the Sanscrit word *सीता* *Sītā*, the name of one of the sources of the Ganges. In a memoir on the sources of this river, this illustrious and profound Indian scholar cites the following passage from the astronomer BHA'SKARA ACHA'RYA: "The holy stream which escapes from the foot of VISHNU, descends from the abode of VISHNU on Mount Meru (the Kwan-lun), whence it divides into four currents, and passing through the air, it reaches the lakes on the summit of the mountains which sustain them. Under the name of *Sītā*, this river joins the Bhadrāsā; as the *Alakanandā*, it enters Bharata-varsha (Hindustan); as the *Chackshu*, it proceeds to Ketumala, and as the *Bhadra*, it goes to the Kuru of the north."—*Siddhānta-Sirōmani*; *Bhavana-Kosha*, 37 and 38.

† Mount Meru. "The Hindus say that the Ganges falls from heaven upon its summit, and thence descends in four currents; the southern branch is the Ganges of India; the northern branch, which flows into Turkey, is the Bhadrāsā; the eastern branch is the *Sītā*, and the western is the *Chakshu*, or *Oxus*."—WILSON, Sanscrit Dict., 2nd edit., Art. *Meru*. The name *Meru* is the *Mēpos* of the Greeks.

‡ These are, no doubt, the fine brocades, embroidered with gold and silver, for which Benares is still so celebrated, which continue to constitute an extensive article of commerce throughout India, and which European industry, however successful its efforts to imitate the products of the East, has not yet been able to rival.

§ *Shih-mei*h, 'stone-honey.'

¶ 尤工幻化

¶ These are, no doubt, the nautch-girls.

He dresses his hair on the top of his head* (like the Chinese women), and the rest of the hair he cuts, to make it short. Married men also cut their hair, and pierce their ears, to hang valuable rings in them. The general practice is to walk on foot. The color of their dress is mostly white. The Indians are timid in battle; their weapons are the bow and arrows, and shield; they have also (like the Chinese) flying or winged ladders†; and, according as the ground will permit, they follow the rules of the *wooden oxen* and *rolling horses*‡. They have a written character and a literature, and they are well versed in astronomy or the science of the heavens, in that of numbers, and in astrology. All the men study the instructive books denominated *Seihthan*, written on the leaves of the tree *pei-to*, intended to preserve a record of things§.

Yang-te, of the Suy dynasty (A. D. 605 to 616), wishing to know the western countries (Se-yu), sent Pei-too to endeavour to determine the boundaries of the kingdoms of Se-fan (ancient Tibet). This envoy traversed many countries, but did not penetrate to India, believing that the emperor had some animosity against the king of this country, whose family was of the race of Ke-le-he, or Cha-le||: at this period there were no troubles, no revolts in his kingdom.

The grain sowed in the marshy soils ripens four times a year¶. The barley, which grows the highest, exceeds the height of a camel. The women wear ornaments of gold and silver on their head, and necklaces of pearls. The dead are burnt, and the ashes of their bodies are collected and deposited in a place set apart; or they throw them into a waste spot, and sometimes cast them into a river: in this manner, funeral ceremonies with cakes of flesh of birds, wild animals, fish and tortoises, are dispensed with.

Those who excite revolts and foment rebellions are punished with death; slight crimes are expiated by money. A person who has no filial duty (or fails in duty towards his parents), suffers mutilation of hands, feet, nose, ears, and is exiled beyond the frontiers. There is a written character and a literature (in this country); the study of astronomical sciences has made great progress there; there are astronomical books in

* To form the जता *jatá*. See the laws of MENU, book ii. v. 219, &c.

† *Fe-te*; this is a scaling-ladder, of which a representation may be seen in the *Art Militaire Chinois*, figs. 48 and 49.

‡ *Mäh-meau*, and *lew-ma*. These are machines of war, of which we know not the form.

§ The following is the Chinese text of this important passage:—

有文字善天文等曆之術其人皆 學悉彙章書於貝多樹葉以記事

The two Chinese characters (2nd and 3rd of 2nd line) *seih-than* are a transcription of the Sanscrit word सिद्धान्त *Siddhānta*, which signifies 'established truth,' 'demonstrable conclusion,' and which forms the titles of many scientific books, as the *Sūrya-Siddhānta*, a celebrated treatise on astronomy; the *Brahma Siddhānta*; the *Siddhānta Kaumudi*, &c. The leaves of trees, *pei-to*, (7, 8, of line 2) are the *olas*, on which most of the Sanscrit MSS. are written, especially those in Telinga characters which come from Southern India. *Pei-to* may be the transcription of पौत *pīta*, 'yellow,' or पीतक *pītaka*, the Sanscrit name of the aloe, the leaves of which are well adapted to the purpose indicated by the Chinese author, especially for writing traced with a style.

|| That is, the royal and military caste of Kshatriyas; क्षत्रियजाति *Kshattriya jāti*.

¶ *Taou*, 'grain that is planted amongst water; the paddy of the southern regions.'—Morrison's Dict.

the *Fan* (or Sanscrit) language ; leaves of the *pei-to* are used to preserve a record of things*.

There is a spot in this kingdom, where are said to be, and where are pointed out, ancient vestiges of the foot of Füh (or Buddha) ; in their creed, the followers of this religion affirm that these vestiges of Buddha really exist. They relate that, by carefully reciting certain prayers, they may acquire the shape of dragons, and rise into the clouds.

In the years *woo tih*, of the Tang dynasty (A. D. 618 to 627), there were great troubles in the kingdom. The king, She-lo-ye-to†, made war and fought battles such as had never been seen before. The elephants were not unsaddled in their rapid marches ; the soldiers quitted not their shields, because this king had formed the project of uniting the four Indias under his rule. All the provinces which faced the north submitted to him.

At this same period of the Tang dynasty, a zealous follower of Füh-too (Buddha), surnamed Heuen-chwang, arrived in this kingdom (of India). She-lo-ye-to caused him to enter his presence, and said to him : “ Your country has produced holy (great) men. The king of Tsin‡, who has routed the armies of his enemies, ought to be well satisfied ; he may be compared to me ; tell me what sort of man he is ? ” Heuen-chwang replied by vaunting the exploits of Tae-tsung, who had put down revolt and reduced the four nations of barbarians to submission to him. The Indian prince, full of fire and energy, was highly satisfied with this recital, and observed : “ I will send (an embassy) to the court of the emperor of the East.”

In fact, in the 15th of the years *ching kwan* (A. D. 642), ambassadors from the king of the country called Mo-kea-to (Magadha) came to offer books to the emperor (Tae-tsung), who directed that an officer of cavalry of inferior rank, named Leang-hwae-king, should go at a prescribed time to assure the (king of India) of the peace and harmony which subsisted between them. She-lo-ye-to, surprised, inquired of the men of the kingdom (Indians), saying : “ From the time of antiquity to the present day, have ambassadors from Mo-ho-chin-tan§ come into our kingdom ? ” They all replied : “ None have hitherto come ; what is termed the kingdom of the Middle, is Mo-ho-chin-tan.” Whereupon, the king, going to meet the ambassador, bent his knee in token of obedience and respect (*mō-pae*) to receive the letter (*chaou-shoo*) of the emperor of China, which he placed on the top of his head. Ambassadors (from the king of Magadha) came again, and directly, to the court. An imperial order directed an assistant

* This is a repetition of what has been before said ; but, as the object of Ma-twan-lin was to combine all the ancient documents and all the authorities known to him, which could tend to establish a fact, we only see in this a fresh proof of the exactness of the various Chinese accounts. Some of the Sanscrit astronomical treatises were translated into Chinese under the Tang dynasty.

† This proper name might be intended to represent the Sanscrit श्रीरहित *Srī-rahita*. It remains to be seen whether a king of this name reigned in India at this period. [May it not rather be assimilated to the *Siladitya* who reigned in Saurashtra in the 6th century ? See M. JACQUER's remarks in the last volume.—Ed.]

‡ Tsin is the name of the dynasty which reigned over China from B.C. 249 to 202, during which the Chinese power caused it to be known for the first time in Central and Western Asia, its conquests being extended to the Caspian Sea and Bengal, in the reign of Tsin-she-hwang-te, the celebrated Burner of the Books. The name of this dynasty has formed that of *China*, in Sanscrit चीन *China*, which occurs in the Laws of MENU, book x. sl. 44, and therefore at a date anterior to the third century before our era, which may be easily explained in referring the name of *China* to the period of the foundation of the kingdom of Tsin in the western province of Shen-se, about B. C. 1000.

§ In Sanscrit, *Mahā-Chīna*, ‘ great China ; ’ in the modern dialects of India, *Mahā-Chīn-istan*, ‘ the country of great China.’

of the department of war, named Le, to take cognizance of the letter of submission (brought by the Indian ambassadors), and to make a report upon it. The ministers reconducted the ambassadors without the city, and it was ordered that in the capital perfume should be burnt as they went along.

She-lo-ye-to, surrounded by his ministers, received, with his face turned to the east, the imperial document (*chaou-shoo*) ; he again sent a present of pearls of fire (*ho-choo*), *yüeh-kin* plants, and the tree *poo-te**.

The 22nd year, of the same period (i. e. A. D. 648), the emperor of China sent a superior officer, named Wang-heuen-tse, as ambassador into this kingdom (of Magadha), in order that the principles of humanity and justice, which had been diffused in that country, should have a protector and representative there. But before his arrival, She-lo-ye-to was dead ; the people of the kingdom had revolted, and the minister (of the deceased king), named Na-foo-te-o-lo-na-shun, had taken his place. He sent troops to oppose the entry of Heuen-tse (the Chinese ambassador) ; under these circumstances, the latter took with him some tens of cavalry, and attacked the troops (of the usurper), but could not vanquish them, and his little force was exterminated ; and the result was, that the tribute received (by the Chinese ambassadors) in the different kingdoms (he had visited) was taken. Heuen-tse retired alone, with all expedition, to the western frontiers of Too-fan (Tibet) ; and he ordered (*keou-chaou*) the neighboring kingdoms to furnish him with troops†. Too-fan sent him 1,000 armed men ; Nēē-po-lo‡ furnished 7,000 cavalry. Heuen-tse, after organizing his force, advanced to give battle as far as the city of Too-poo-ho-lo§, which he took by assault in three days. He caused 3,000 persons to be beheaded, and 10,000 were drowned in the river. O-lo-na-shun escaped into the kingdom of Wei. He there rallied his dispersed troops and returned to the charge. The (Chinese) general made him prisoner, with 1,000 men, whom he beheaded. The remainder of the people retired with the king's wives to the banks of the river Kan-to-wei||. The humanity of the Chinese general (*sze-jin*¶) attacked them, and created a great disorder amongst this population. He likewise captured the concubines and children of the king, as well as other prisoners, men and women, to the number of 12,000, besides animals of all kinds, amounting to 20,000.

* The words *poo-te* are probably the transcription of the name of a tree in Sanscrit, perhaps the *vata*, a sacred tree employed in religious ceremonies, and of which mention is often made in Sanscrit poetry. What confirms this conjecture is the following passage in Kang-he's dictionary, under the character *poo* : "*poo-te* is the name of a tree which grows in the kingdom of Mo-kea-to (Magadha)." The same dictionary adds, that in the books of Füh, it is said, "*Poo-te-sa-to* (Bodhisattva) signifies the essence of what is manifest, declared ; by abbreviation, we say '*Poo-sa*.'" The term *Bodhisattva*, in Sanscrit, signifies literally, 'truth of intelligence : ' it is the name given to certain Buddhist patriarchs, who have raised themselves to the state of divine sanctification.

† This authoritative demand, if it be not introduced here, as the facts, indeed, show, to gratify Chinese vanity, would denote that, at this period, Tibet was already dependent upon the Chinese empire as well as several other neighbouring kingdoms.

‡ Nepála, or Nepal : see the account given by Ma-twan-lin (book 335, fol. 14), in the translation by M. RE'MUSAT, *Nouv. Mél. Asiat.* t. i. p. 193.

§ Too (the first character) may be read *cha*, or *tsa*. If it be read *cha*, the pronunciation of the epoch in question, *Cha-poo-ho-lo* would be an exact transcription of *Champaran*, a city placed by Abul-Fazil in Bahar, the ancient kingdom of Magadha, and probably the same as *Chapra*, on the Ganges, higher up than Patna ; for *Chapra* is but a variation of *Champaran*, as the latter is likewise of *Champaranagora*.

|| This is no doubt the Godáveri, which falls into the Gulf of Bengal, to the eastward of Masulipatam.

¶ The *humanity* is, at the least, a singular expression to be used in these circumstances ; yet the text admits of no other sense.

He subjected 580 cities and towns, and his power grew so formidable, that the king of the kingdom of eastern India, named She-keou-mo*, sent him 30,000 oxen and horses to feed and mount his army, as well as bows, sabres, precious collars, and cords of silk. The kingdom of Kea-mō-loo† furnished different articles, with a chart of the country‡, amongst which was a portrait of Laou-tsze.

Heuen-tse took with him O-lo-na-shun, to present him to the emperor (as a vanquished enemy). There had been an imperial order, which prescribed that the ancestors should be informed hereof, in the temple dedicated to them; and Heuen-tse was elevated, at the court, above the magistrates (*ta-foo*) of all ranks.

In his travels, the Chinese ambassador had encountered a doctor named Na-lo-urh-po-so-mei§, who told him that he was 200 years old, and possessed the recipe of immortality. The emperor|| (having learned this intelligence) immediately quitted the hall of audience, in order to despatch an envoy in search of the philosophical stone (*tan*). He directed the president of the ministry of war to furnish the envoy with all the necessary instructions and provisions to enable him to prosecute his journey. This envoy traversed "the world" on horseback, to collect supernatural drugs, as well as the most rare and extraordinary stones. He travelled over all the kingdoms of the Po-lo-mun (Brahmans), in the country called the Waters of Pan-cha-fa¶, which (waters) come from the midst of calcareous rocks (*shih-kew*, 'stone-mortar,' or 'rock'), where are elephants and men of stone to guard them. The waters are of seven different species; one is hot, another very cold (or frozen, *ling*). Plants and wood may be consumed in it; gold and steel may be fused in it; and a person who dips his hand into it will have it entirely burnt off. This water is poured into vases by means of skulls of camels, which turn round. There is also a tree there, called *tsoo-lae-lo*, the leaves of which are like varnish or blacking. It grows upon the top of scarped and desert mountains. Enormous serpents guard it; and those who wander in the neighborhood cannot approach it. A person who wishes to gather the leaves employs different arrows to strike the branches of the tree; the leaves then fall. A multitude of birds also take the leaves into their beaks, and carry them a great way: it is necessary, in like manner, to direct arrows against them, to obtain these leaves. There are other curiosities in this country of the same kind.

* *Srī-kumāra* ?

† This kingdom must be that of *Kāma-rūpa*, mentioned in the Sanscrit inscription on the column of Allahabad, and which formed the western part of the kingdom of Assam, on the frontiers of Tibet. The syllable *kā* is well represented by *kea*, as *ma* is by *mo*, and *rū* by *loo*; the last syllable *pa* is not transcribed. It is worthy of remark, that it is a general law of transcription from Sanscrit into Chinese, that the short *a* should be represented in the latter by *o*.

‡ This curious circumstance is a ground for thinking (for it is not a mere conjecture), that there existed, and perhaps still exist, in India, native geographical charts and works on geography; but all these articles must have undergone the fate of the royal archives, where they were carefully preserved and concealed from the eager eyes of European conquerors.

§ The first two words of this transcription represent faithfully the Sanscrit word नर *nara*, 'man,' which enters into the composition of many proper names; but the Sanscrit value of the other four syllables is more difficult to determine.

|| Tae-tsung, who reigned from A. D. 626 to 649.

¶ This is a very exact transcription of the Persian word پنجاب *Panjáb*, the 'five waters,' or 'five rivers' (in Sanscrit *Panchananda*), which is the designation given to a large and fertile province of India. The last syllable *fa*, in the Chinese transcription, represents the more faithfully the syllable *áb*, inasmuch as the consonants composing it are two labials very often taken one for the other.

The drug (of immortality) could not be found or verified by this envoy, who, being recalled, could not proceed further, and returned and died at Chang-gan (the capital).

In the time of Kaou-tsung (A. D. 650 to 684), a Loo-kea-ye-to*, of the country of Woo-chat, in eastern India, came likewise to offer homage at the court of the emperor, giving himself out as a possessor of the recipe of immortality, and as being able to transform himself into lieutenant general of armies.

In the third of the years *kéen-fung*† (A. D. 667), the Five Indias (or five kingdoms of India) sent ambassadors to the court of the emperor. In the years *kae-yuen* (A. D. 713 to 742), an ambassador from Central India proceeded three times as far as the extremity of southern India, and came only once to offer birds of five colors that could talk§. He applied for aid against the Ta-she|| (or Arabs) and the Too-fan (or Tibetans), offering to take the command of the auxiliary troops. The Emperor Heuen-tsung (who reigned from A. D. 713 to 756) conferred upon him the rank of general-in-chief. The Indian ambassadors said to him: "the *Fan* (or Tibetan) barbarians are captivated only by clothes and equipments. Emperor! I must have a long, silk, embroidered robe, a leathern belt decorated with gold, and a bag in the shape of a fish." All these articles were ordered by the emperor.

Northern India also sent an embassy to the court of the emperor.

At the close of the years *kan-yuen* (about A. D. 756), the bank of the river (*Ho-lung*, the Ganges?) gave way and disappeared.

The third of the years *kwang-shun*, of the modern Chows (A. D. 953) a Să-mun¶ (priest of Buddha), of western India, with several priests of his religion, representing sixteen different tribes or nations (of India), brought tribute, amongst which were some horses of the country.

The third of the years *kan-t'ih*, of the Sung dynasty (A. D. 966), a Buddhist priest of Tsang-chow, named Taou-yuen, who had returned from the western countries (Se-yu), had brought from thence a portion of

* That is, a लोकायनिक *Lókāyatika*, or follower of the atheistical system of philosophy founded by Chárwāka, entitled *Lókāyata* (see Mr. COLEBROOKE's Essays on the Philosophy of the Hindus). The suffix *ka*, which forms collective names in Sanscrit, is represented in Chinese by the character *che*, which serves in like manner to form adjectives and collective names in Chinese.

† A kingdom situated near the mouths of the Ganges.

‡ There is an error here in the text; the years *kéen-fung* were only two, 666 and 667.

§ These were of course parrots.

|| *Ta-she*, 'great eaters,' (rather *tāzī*, Arabian, J. P.) is the name by which the Chinese designate the Arabs. This curious passage throws great light on this obscure period of Indian history, and confirms a fact hitherto scarcely noticed, but which has been asserted by two Arabian authors, ALMAKIN and ABULFEDA, namely, the invasion of India by the Arabs at the beginning of the eighth century. "MAHOMED BEN CASSIM," says the former, in his history of the Sarrasins, "took India; he obtained possession of the countries adjoining the Sind (Indus), gave battle to DAHAR, who was king of them, vanquished him, made him prisoner, and put him to death." The other, in his *Musulman Annals*, translated by REISKE, says: "MAHOMED BEN CASSIM overrun India as conqueror." But the following is a passage, curious in another respect, concerning the same fact; it is taken from the History of the Empire of the Khalifs, translated from Tabari (Turkish edition), for a knowledge of which we are indebted to M. REINAND: "This same year, 87 (A. D. 709) was gloriously terminated by the defeat of 200,000 barbarians, who had entered the country of the Musulmans, commanded by BEGHABOON, nephew of the emperor of China. The Musulmans confessed that they owed this important victory to the protection of God."

¶ This Indian title is more frequently written *Sha-mun* (with different characters); it is a close transcription of the Sanscrit *Samāna*, (rather, *Sramana*. J. P.)

the body of Füh*, vases of crystal, and Sanscrit writings on leaves of *Pei-to*, to the number of forty, which he presented to the emperor. Taou-yuen returned to the western countries (of Asia) in the years *téen-fuh* (A. D. 943 to 944); he was twelve years on his travels, wandering in the Five Zin-too for six years. The Five Zin-too (divisions of India) are the same as Téen-choot (India). He brought back an abundance of books, to understand the use of which he exerted all his efforts. The emperor Tae-tsoo (who reigned from A. D. 950 to 953) summoned him into his presence, for the purpose of interrogating him respecting the manners and customs of the nations amongst whom he had travelled; the height of the mountains, and extent of the rivers. He answered all the questions one by one. For four years, a priest of Buddha, he dedicated all his cares to one hundred and fifty-seven persons. On his return to the palace, he said he had been desirous of returning into the western countries in search of the books of Füh (or Buddha); that he had found some of them where he had travelled, in the provinces of Kan-sha, Se-soo, and others; that these provinces (*chow*) produced tortoises, herbs, and woods, in great abundance, the export of which yielded the revenue of the kingdom. Moreover, he passed beyond the kingdom of Poo-loo-sha and of Kea-she-me†. Orders were everywhere given that guides should be provided him on his route.

After the years *kae-paou* (about A. D. 969), a Buddhist priest of India brought some Sanscrit books (or Indian presents§), and envoys continued to bring them from thence. During the winter of the eighth year, the son of the king of Eastern India, named Jang-këë-kwang-lo (?) came to court to bring tribute. The king of the kingdom of the Law in India|| happening to die, his eldest son succeeded him; all the other sons of the deceased king quitted their royal abode, and became priests of Buddha, and returned no more to reside in their native kingdom. One of the sons of this Indian king, named Man-choo-she-le¶, came into the kingdom of the Middle (China) as a Buddhist priest. The Emperor Tae-tsoo ordered that he should be provided with an apartment in the palace of his ministers of state, that he should be well treated whilst he remained in the capital, and that he should have as much money as he required. The body of Buddhist priests conceived a jealousy against him; and being unable to repel the false accusations, of which he was the object, he requested permission to return to his native kingdom, which was granted by the emperor, who published a proclamation on the subject. Man-choo-she-le, at first, was much alarmed at their intrigues; but when all the Buddhist priests knew the meaning of the

* *Tih-Füh-shay-le-yth*: the characters *shay-le* are the transcription of the Sanscrit word शरीर *Shárirá*, 'body,' or शरीरिन *Sháririn*, 'corporeal.' Dr. MORRISON, in his Dictionary (Vol. I. Part i. p. 530), states on an authority unknown to us, but apparently to be relied on: "*Shay-le-ta*, a Pagoda, raised over certain relics or pearly ashes of Buddha; these, it is said, are contained in a gold box; if, on being opened, they exhibit a dingy appearance, it is deemed a bad omen; if a red appearance, a good omen."

† Another transcription of the Sanscrit सिन्धु *Sindhú*, the river Indus, whence the European and Arabic name of India.

‡ These are the kingdoms of Purusha and Cashmere. See Ma-twau-lin, book 335, fol. 15, and M. RE'MUSAT's translation, *Nouv. Mélanges Asiat.* t. 1. p. 196.

§ *Che-fan-lae*, 'Presents from Che-fan.' It is not said in the text what was the nature of the articles brought; but it is fair to presume, that they were Buddhist books in Sanscrit, which were subsequently translated into Chinese.

|| *Téen-choo-che-fá-kuó*, 'the kingdom of the Law of India;' apparently the kingdom of the Law of Buddha, i. e. Magadha.

¶ In Sanscrit मञ्जुश्री *Manjusri*, a term which denotes a Buddhist saint.

imperial proclamation, they were disconcerted in their projects. The Buddhist priest prolonged his stay for a few months, and then departed. He said that it was his intention to embark on the southern sea (perhaps at Canton), in a merchant vessel, to return to his own country. It is not known where he eventually went.

On the 7th of the years *tse-fing-hing-kwō* ('the kingdom in great peace and prosperity'), equivalent to A. D. 983, a Buddhist priest of E-chow, named Kwang-yuen, returned from India; he brought from thence a letter from the king, Moo-se-nang*, to the emperor (of China). The emperor ordered that an Indian Buddhist priest should translate the letter, and acquaint him with the contents of it. The letter was to this effect; "I have lately learned, that in the kingdom of *Che-na*, there existed a king, most illustrious, most holy, most enlightened; whose majesty and person subsist in themselves and by themselves. I blush every moment at my unfortunate position, which hinders me from visiting your court, in order to pay my respects to you in person. Remote as I am, I can only cherish, with hope, a regard for *Che-na*†; whether you are standing or sitting, in motion or at rest, (i. e. in all circumstances of life,) I invoke ten thousand felicities on your holy person‡."

Kwang-yuen also brought certain rare drugs, diamonds, talismans, amulets, to obtain good fortune, and secure the bearer against danger, as well as holy images of *She-kea*§, vestments without sleeves, called *kea-sha*, sometimes worn by the priests of Buddha in the exercise of their functions, and various articles used by the hand in eating, which he desired to be humbly offered to the august emperor of China, "wishing him all kinds of happiness; a long life; that he might always be guided in the 'right way;' and that all his wishes might be fulfilled: in the middle of the ocean of life and of death, most of those who cross it are engulfed||." Kwang-yuen then presented to the emperor, in person, a portion (or reliques) of the body of *She-kea*. He likewise translated and explained the entire contents of the letter, brought by a Buddhist priest, from the same kingdom (India); the expressions and sentiments are the same as in that of Moo-se-nang. The bearer of this document learned that it was from the kingdom of Woo-tên-nang (or Woo-chin-nang); that this kingdom belonged to Yin-too, of the north; that in twelve days, from the west, you arrive at the kingdom of Khan-to-lo (Candahar); twenty days further to the west, you reach the kingdom of Nang-go-lo-ho-lo; ten days further to the west, you come to the kingdom of Lan-po; twelve days more to the west, is the kingdom of Go-je-nang; and further to the west, that of Po-sze (Persia); after reaching the western sea (the Persian gulph), from northern Yin-too, in 120 days' journey, you arrive at the Central Yin-too; from thence to the westward, at the dis-

* In Sanscrit, *Mahā-Sinha*, 'Great Lion,' an epithet often given to Indian kings or, perhaps, rather the transcription of *Madhu-Sinha*, the name of a king of Bengal, mentioned in the *Ayeen Akberi*. We shall make here but one observation respecting the law of transcription of foreign names in Chinese, for the benefit of those who have not studied the language; namely, that the Chinese nasal termination *ang* has the same value as the *anuswara* in Sanscrit, or the labial *ṃ* at the end of words. It is, therefore, equivalent to the Sanscrit accusative: a termination which has become general in the dialect of the south of India.

† The first of the two characters which express this name (and which is an accurate representation of the Sanscrit चीन *China*) is differently written in two places; both are pronounced *Che*.

‡ This letter has been cited by Dr. MORRISON, in his *View of China*, but from a different author; from Ma-wan-lin.

§ *Shākya-muni*, patronymic name of Buddha.

|| This, we believe, to be the exact sense of this Buddhist phraseology.

tance of three *ching**, is the kingdom of Ho-lo-wei; still further to the west, in twelve days' journey, you reach the kingdom of Kea-lo-na-keu-je (Karana?) and in twelve days' journey more to the west, you come to the kingdom of Mo-lo-wei (Malwa; in Sanscrit *Málava*); further to the west, twenty days' journey, is the kingdom of Woo-jan-ne (Oujein or, Sanscrit Ujjayani). In another twenty-five days' journey still to the west, you visit the kingdom of Lo-lo; and forty days' journey further to the west, the kingdom of Soo-lo-to (Surat); in eleven days' journey further to the west, you get to the Western sea. This makes in the whole a six moons' journey from Central Yin-too. When at Southern Yin-too, in ninety days' journey to the west, you arrive at the kingdom of Kung kea-na; and in one day further to the west, you come to the sea. From Southern Yin-too, in six months' journey to the south, you reach the South Sea (the sea of China). This was what was related by the Indian envoy.

The eighth year (983), a priest of Buddha, master of the law†, came from India, bringing books. In traversing part of the island of Sumatra‡, he met with the Buddhist priests Me-mo-lo, Che-le-yoo-poo-to; he charged them (as superior priests?) with a letter, which he wished to transmit to the kingdom of the Middle, with a great number of translated books. The emperor caused them to come to court to gratify his curiosity. The master of the law of Buddha (*fā*) again met with some mendicant Buddhists, wearing vestments without sleeves, and valuable head-dresses in the form of serpents§. He returned with them on their journey to India. A letter of recommendation (*peaou*) was given him, to enable him to traverse the kingdom of Tibet, with letters of credence, delivered by the emperor, to present to the king of the kingdom of San-füh-tsi or Sumatra. From this remote country he proceeded to the sovereign (*choo*) of the kingdom of Go-koo-lo, and that of the kingdom of Sze-ma-kié-máng-ko-lan (the Mongul empire?). He recommended Tan-lo to the king of the Western Heaven||, and his son formed the design of sending him, by his means, works on the spirits and genii.

In the years *yung-he* (984 to 988), a Buddhist priest of Wei-chow, named Tsou-hwan, returning from the western countries of Asia (*Se-yu*), with another Buddhist priest from a distant country, named Mīh-tan-lo, where he had been presented to the king of Northern Yin-too, seated on a throne of diamonds, and named Na-lan-to, brought some books. There was besides a Brahman priest, named Yung-she ('eternal age'), and a Persian infidel (*gne-taou*), named O-le-yan, who came together to the capital. Yung-she said that his native country was called Le. It was ascertained that the family name of the king of this kingdom was Ya-lo-woo-te; that his first name was O-jīh-ne-fo; that he wore a yellow dress, and had on his head a cap of gold, adorned with seven precious gems. When he goes out, he mounts an elephant; he is preceded by couriers, with musical instruments on their shoulders; the crowd rush into the temple of Füh, where he distributes gifts to the poor, and suc-

* The European Chinese dictionaries do not give the value of this itinerary measure. In the Dictionary of Kang-he, it is stated to be a measure of distance, but no equivalent is stated.

† *Sang-fā*; in Sanscrit, *Sangha* and *Dharma* (the priest, or religious meeting), and the law.

‡ *San-füh-tsi*.

§ "Valuable head-dresses (or caps), in the form of serpents," are, doubtless, the shawls which the modern Muhammadans, as well as the Hindus, wrap round their heads.

|| *Tsan-tan-lo-se-tēn-wang*.

cour to those who need it. His concubine was named Mo-ho-ne; she wore a red dress, adorned with gold filagree work. She goes out but once a year, and distributes gifts freely. People flock to attend the king and his concubine, and raise shouts of joy as they pass. There are four ministers to administer all the affairs of the kingdom, who are irremovable. The five kinds of grain and the six kinds of edible fruit, are the same as the Chinese. They use copper money for purposes of commerce. They have a literature and books, which are long and are rolled up as in China, except that the leaves are not pierced and attached one to another.

From their kingdom, six months' journey to the East, you arrive at the kingdom of the Ta-she (Arab); in two moons more, you get to Se-chow (the Western Isle); in three moons more, you arrive at Hea-chow (the Isle of Summer). O-le-yan says, that the king of his native country was entitled *hîh-yîh* (Black-dress); that his family name was Chang, and his first name Le-moo; that he wore silk dresses, embroidered and painted in different colors; that he wore each only two or three days, resuming them once. The kingdom has nine ministers, irremovable, who direct state affairs. Commerce is carried on by barter, no money being used.

From this kingdom, six months' journey to the East, you arrive at the country of the Brahmins*.

The second of the years *che-taou* (996), some Buddhist priests from India, who arrived in ships as far as the mouth of the river (*che-gan*), bringing to the emperor a brass bell and a copper bell, a statue of Füh†, and some *Fan* (Indian) books, written upon leaves of the *pei-to* tree, the language of which is not understood.

The third and ninth of the year *tên shing* (1025 to 1031), some Buddhist priests of Western Yin-too, lovers of wisdom, knowledge, sincerity, and other virtues of this kind‡, brought *Fan* books § as presents, revered as canonical. The emperor gave to each a piece of yellow stuff, to wrap round the body, in the form of a band.

The second moon of the fifth year some *Sang-fä*, to the number of five, denominated 'fortunate' and 'happy,' and by other epithets of the same nature, brought presents of *Fan* books. The emperor gave them pieces of yellow stuff to make trailing robes for them.

The third of the years *king-yew* (1036), nine Buddhist priests, called 'the virtuous,' 'the exalted,' &c., brought as tribute, *Fan* books and bones of Füh, with teeth; copper, and statues of Poo-sa (Boddhisatwas): the emperor gave them caps and bands.

[To be continued.]

* Here ends the first narrative of the *Yuen-keen-luy-han*.

† This traffic in images of Buddha continues to the present day, as may be proved by the well-known circumstance of the large stone statue seized on its way down the river from *Patna*, at the breaking out of the Burmese war, and restored from the museum, wherein it was deposited, only three years ago. It would be curious to ascertain whether any Buddhist images in *China* bear the *Nágari* inscription *ye dharma hétu*, &c., like those dug up at *Tagoung* in *Ava*.—ED.

‡ These are translations of Sanscrit Buddha epithets.

§ *Fan-shoo-king*, 'classical Indian books.'

*X.—Proceedings of the Asiatic Society.**Wednesday Evening, the 1st February, 1837.*

The Rev. Dr. MILL, Vice-President, in the chair.

Mr. J. CURNIN, Captain F. JENKINS, Mr. GEORGE HILL, and Mr. RICHARD WALKER, Captain EDWARD SANDERS, Bábus RA'MNA'TH TAGORE and PRASANNAKUMAR TAGORE, proposed at the last meeting, were ballotted for, and duly elected Members of the Asiatic Society.

Mr. J. MILL, and Mr. W. CRACROFT, were proposed by Mr. J. PRINSEP, seconded by Dr. MILL.

Mr. P. A. LAIR, proposed at the last meeting, was, upon the favorable report of the Committee of Papers, elected an Honorary Member of the Society.

The following letter from Sir ALEXANDER JOHNSTON, Chairman of the Committee of Correspondence, Royal Asiatic Society, was read.

Royal Asiatic Society, Grafton Street, Bond Street, June, 1836.

MY LORDS AND GENTLEMEN,

The vast extent, fertility, and populousness of our Indian possessions, are known, in a general way, to all the world. A glance, indeed, at the map will shew that their extremes of latitude may, without exaggeration, be indicated by the distance from Gibraltar to the farthest point of Scotland; and that the measure of their extent, from west to east, will be nearly found in a line drawn from the Bay of Biscay to the Black Sea. Lying between the 5th and 31st degree of north latitude, with almost every conceivable variety of position and exposure, they present a range of soil and climate greatly exceeding that which is to be found within the bounds of Europe. They embrace, in truth, the utmost limits of vegetable life, from the burning heat of the desert to the point of perpetual congelation: presenting, in one quarter, the loftiest mountains in the world; and, in another, vast alluvial plains, intersected by the natural channels of many noble rivers, with a corresponding variety of productions belonging both to tropical and northern regions. Not less than eighty millions of people are subject to the dominion of England: already they produce (though with imperfect skill) most of the articles which form the great staples of the import trade of this country, as materials of its manufacture, or as the objects of comfort and luxury to the great body of its inhabitants, of which cotton, silk, indigo, sugar, coffee, and tobacco, may be mentioned as pre-eminent; and they offer an assured prospect of an almost boundless market for the produce of English manufacturing skill, if the capabilities of their country be drawn forth, and their industry be duly instructed, directed, and fostered.

But though these general truths be readily acknowledged, their practical application is very imperfectly understood. Few men in England really know what India does or can produce, with sufficient precision, at least, to justify commercial speculation. Few in India know what England requires; and none of the lights of modern science having been applied to the agriculture of the former country, its productive powers have, as yet, been very imperfectly developed.

Believing that the interests of both countries may be very importantly promoted by an interchange of knowledge, and especially by communicating to India the information and stimulus which are alone wanting to the full development of its vast resources, it has been resolved by the Royal Asiatic Society, to constitute a distinct Section, for the following, and other similar purposes; provided the necessary funds can be raised for giving adequate effect to the design.

1st. The examination of the natural and agricultural products of India, available for the purposes of commerce and art.

2ndly. Inquiry into the causes of the general inferiority of the staple articles of Indian commerce.

3rdly. The introduction of new articles and processes from analogous climates in other parts of the world.

The Committee of Correspondence of the Royal Asiatic Society beg leave to bring the circumstance to your notice; trusting, confidently, on your zealous support of a measure, calculated to promote objects alike interesting to the patriot and the philanthropist.

Of the means of support, the most acceptable would, of course, be such an accession of new members, European or Asiatic, as would at once provide the necessary funds, and as would afford the requisite contribution of knowledge and experience in the various branches of inquiry to which the labors of the Section are to be directed. But the Society will be most happy to receive the tender of the aid (whether in knowledge or funds) of affiliated Societies, pursuing the same beneficial objects, or any other co-operation or assistance which you may have the goodness to offer.

For the fuller explanation of the scheme in question, the Committee direct me to transmit to you the accompanying printed papers; and I shall be happy to afford you any further information in my power, in regard to it, that you may require.

I have the honor to be,
My Lords and Gentlemen,
Your most obedient humble servant,

ALEXANDER JOHNSTON,
Chairman of the Committee of Correspondence, R. A. S.

To the President, Vice-Presidents and Members of the Asiatic Society of Bengal.

Resolved, that a portion of the papers be made over to the Agricultural Society, and that general circulation be given to the Royal Asiatic Society's prospectus.

A letter from Mr. ALEXANDER VATTEMORE, addressed to the Governor General of India, was read, proposing to negotiate a general system of exchanges of duplicates between the various libraries and museums of the world.

Resolved, that copies of the library catalogue now printing be furnished to Mr. VATTEMORE, in furtherance of his laudable design.

The following protest from members of the Society residing in the interior was communicated by Colonel J. COLVIN.

Dissentient.

It appears to us that in a society constituted as the Asiatic Society of Bengal is, the existence of a fund vested in Government Securities is absolutely necessary for the permanence of the foundation.

We consider that such funds are intended to be reserved for cases of extreme emergency, and that the interest only of *such funds* should be carried to the current expenses of the Society.

We also consider that any infringement of a law upon which the Society's existence may be said to depend, is injurious not only to the Society itself as a body, but to the interests of the members individually; and may be drawn in as a precedent for further encroachments, leading to the ultimate dissolution of the Society.

For these reasons, we dissent from the resolution passed at the meeting of the Society of the 4th May, 1836, continuing the services of a Curator at two hundred rupees per mensem; the account current shewing a deficiency of rupees 571-0-1, and the payment of the Curator's salary being proposed to be made out of the vested funds of Mr. BRUCE. Further, in adverting to the Secretary's remark, "that M. BOUCHEZ, the assistant and working Curator, would be competent to set up all new specimens and preserve the present col-

lection," we see no necessity, under the present difficulties of the Society, of retaining the higher appointment.

Northern Doab, }
14th Dec. 1836; }

and, Calcutta, }
26th Jan. 1837. }

P. F. CAUTLEY, *Capt. Arty.*
H. FALCONER, *M. D.*
W. M. DURAND, *Lieut. Engrs.*
W. E. BAKER, *Lieut. Engrs.*
ALEXANDER COLVIN.
JOHN COLVIN, *Lieut.-Col. Engrs.*

After discussion it was agreed that the protest could not affect the resolution passed by the Society in May, 1836, but that it would very properly become matter of consideration at the expiration of the annual term for which the museum grant was then confirmed.

The Secretary read correspondence with Mr. LANE respecting the publication of his Anglo-Burmese Dictionary under the Society's auspices. He had written to Colonel BURNEY for the manuscript, which would immediately be put in hand.

A statistical paper having been communicated by Mr. H. WALTERS, that gentleman was requested to join the Committee lately appointed for that object, to which he assented.

Library.

The following books were presented.

Bulletin de la Soci  t   de Geographie, tome 5—*by the Geographical Society of Paris.*

Journal Asiatique for April, May, and June, 1836—*by the Asiatic Society of Paris.*

Shams-ul hindisah, a mathematical work, compiled by the Naw  b SHUMSOOL OOMRA at Hyderabad—*presented by the author through Mr. C. Trench.*

An Australian Grammar, comprehending the principles and natural rules of the language as spoken by the Aborigines, by L. E. THRELKELD—*by the author through Mr. Cracroft.*

A collection of examples on the Integral Calculus, by Mr. H. SHORT, Queen's College, Cambridge—*presented by Mr. H. Horneman.*

A dissertation on the soil and agriculture of Penang, by Major JAMES LOW—*by the author.*

The first No. of the Medical and Physical Society's Journal—*by the Society.*

The following books were received from the booksellers :

Lardner's Cabinet Cyclopedia, England, Vol. 6th.

_____, Greece, Vol. 3rd.

Analecta Arabica, Part I.

Institutiones Juris Mohammedani circa Bellum contra eos qui ab Islamo-sunt alieni, by ERN. FRID. CAR. ROSENMULLER, Leipsig, 1825.

Y King, Antiquissimus Sinarum Liber ex Latin   Interpretatione P. Regis aliorumque, &c. ; by Professor JULIUS M  HL.

Baghavat G  ta, translated into German, by C. R. G. PEIPER, Leipsig, 1834.

Taberistanensis, id est Abu Dschaferi Mohammed Ben Dscherir Ettaber   Anales Regum Atque Legatorum Dei ; by J. G. L. ROSENGARTEN, Vol. 1st, Berlin, 1831.

Physical.

The fossil bones from the *Perim* island, presented by Lieut. GEORGE FULLJAMES, Bombay Engineers, were laid on the table for inspection.

This very valuable acquisition comprises many jaws of the mastodon in fine preservation—also jaws or teeth of the hippopotamus, elephant, rhinoceros, a larger animal assimilating thereto (*lophiodon* ?), mastodon, sow, anthracotherium (?) deer, ox, &c., the femur of an elephant as large as that from the Nerbudda,

and much exceeding in size, as was remarked by Colonel COLVIN, any that had been found in the *Sewalik* range, many vertebræ and unidentified bones and horns, tortoise fragments, and a peculiarly perfect saurian head. The special thanks of the Society were voted to Lieutenant FULLJAMES for his magnificent donation.

[We shall take an early opportunity of lithographing some of the most curious of these specimens.—ED.]

Lieutenant FULLJAMES mentions that he is now employed in sinking a bore at *Gogo*, about five miles from *Perim*. It has been already carried to 250 feet:—the last 150 through an immense bed of blue clay, containing pyrites and shells, resembling the muscle:—the deepest bed of sandstone was thirty feet, but it differed essentially from the bone stratum of *Perim*.

A skeleton of the common hog (*sus scrofu*,) was presented by Dr. A. R. JACKSON, mounted in the museum.

Mr. WILLIAM CRACROFT presented to the Society a large variety of objects of Natural History, collected by himself during his residence in New South Wales and Van Dieman's Land; accompanied with an illustrative notice.

This collection contained three volumes of a hortus siccus of the chief indigenous plants of these colonies—a rich series of ornithology and conchology—and specimens of the fossil shells, fossil wood, and minerals of which the islands present so many fertile deposits; ores of lead, copper, and iron, have been discovered, but are not yet worked, and coal is plentiful.

[The author's notes will be inserted hereafter.—ED.]

Dr. G. EVANS exhibited to the meeting a very large skull of an animal generally considered to be the Bison of Indian forests, which he recognized as the Gaur (*Bos gaurus*), and distinguished from the skull so named in the museum.

[The note, outline, and arguments pro and con shall have early insertion.]

It was moved by Sir BENJAMIN MALKIN, seconded by Colonel COLVIN, and carried unanimously,

That, with reference to the rapid increase of the museum, particularly in the department of fossil geology, and to the limited funds at the Society's disposal, the subscription of individual members shall be invited for the preparation of cabinets and other improvements connected with this highly important branch of the Society's researches, and that the Secretary do circulate a notice to this effect to members of the Society.

[The sum subscribed by members present is inserted on the cover notice, to which the attention of members is invited.—ED.]

The following notice, dated *Sihor*, 17th January, was recorded in hopes of eliciting further observations of the same phenomenon.

At *Bersia*, Lat. 23° 38'. Long. 77° 30', on January 11th, at 6h 00m, a meteor appeared near β Andromedæ, and not far from the Zenith; it went down to the westward, occupying 2 or 3 seconds in its flight, and inclining a little to the left; at about 30° of altitude it burst into a globe of light little inferior to the sun in size and brightness; and then disappeared, leaving behind a long train of smoke which continued visible for many minutes, like a thin cloud enlightened by the sun's rays; at about 6h 5m a faint rumbling sound was heard like the distant discharge of artillery. The appearance was nearly the same at *Sihor*, though distant 36 miles S. S. W.

Should this meteor have been noticed at *Mhow* or *Ajmir*, the place over which it burst may be determined, and probably a meteoric stone discovered.—W. S. J.

Meteorological Register, kept at the Assay Office, Calcutta, for the Month of January, 1837.

Day of the Month.	Observations at 10 A. M.						Observations at 4 P. M.						Calculated Humidity.			Temperature of water at 10 A. M.			Rain.	Wind.		Weather.		
	Old Stand.	New Stand.	Barometer at 32°.	Thermometer in air.	Depression of wet-bulb.	Dew-point.	Hair Hygrometer.	Old Stand.	New Stand.	Barometer at 32°.	Thermometer in air.	Depression of wet-bulb.	Dew-point.	Hair Hygrometer.	Centesimal tension of vapour by wet-bulb.	Ditto by dew-point.	Do. by hair hygrometer.	River.		Well.	10 A. M.	4 P. M.	Morning.	Evening.
1	30.078	30.044	67.1	9.0	8.7	77	50	29.973	29.925	73.7	15.5	13.6	67.0	30	25	39			nil.	nil.	N.	nw.	cumuli. fine.	cumuli. fine.
2		0.0	67.7	10.7	11.1	73	42		9.0	9.0	73.4	15.2	16.0	64	27	25	36			n.	nw.	do	do	
3																					nw.	nw.	do	do
4																					nw.	nw.	do	do
5	007	29.989	65.0	12.0	12.0	73	35	9.97	9.98	73.3	15.1	15.6	67	25	25	38					nw.	n.	clear.	do
6	031	30.010	64.3	8.0	9.3	79	52	9.97	9.98	73.3	15.1	15.6	67	25	25	38					N.	n.	do	do
7	068	047	64.7	9.6	10.6	76	45	9.97	9.98	73.3	15.1	15.6	67	25	25	38					N.	n.	do	do
8	113	063	61.9	7.3	7.8	81	58	9.92	9.97	73.3	15.1	15.6	67	25	25	38					nw.	n.	do	do
9	082	050	66.6	5.7	6.3	82	67	9.91	9.97	73.3	15.1	15.6	67	25	25	38					nw.	n.	do	do
10	071	035	68.3	7.7	8.3	80	57	9.97	9.97	73.3	15.1	15.6	67	25	25	38					nw.	n.	do	do
11	127	038	66.6	5.9	6.3	85	64	9.98	9.98	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
12	152	123	68.4	8.9	9.8	78	52	9.98	9.98	73.3	15.1	15.6	67	25	25	38					N.	S.W.	hazy.	do
13	144	124	66.5	6.8	7.7	83	62	9.92	9.97	73.3	15.1	15.6	67	25	25	38					N.	n.	clear.	do
14	165	140	67.9	8.0	9.0	76	55	9.97	9.97	73.3	15.1	15.6	67	25	25	38					N.	n.	do	do
15	187	156	66.6	6.3	6.7	82	65	9.97	9.97	73.3	15.1	15.6	67	25	25	38					N.	n.	do	do
16	200	169	67.2	8.0	8.7	80	55	9.97	9.97	73.3	15.1	15.6	67	25	25	38					se.	n.	do	do
17	145	120	65.1	6.8	8.0	79	60	9.97	9.97	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
18	171	143	66.5	7.1	8.3	81	60	9.97	9.97	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
19	155	125	64.9	6.5	8.1	82	62	9.97	9.97	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
20	045	000	69.7	10.1	10.6	77	47	9.97	9.97	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
21	064	014	70.7	9.3	11.1	76	50	9.97	9.97	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
22	030	29.998	65.4	8.9	9.7	76	50	9.97	9.97	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
23	29.966	9.67	67.9	5.7	4.5	89	80	9.97	9.97	73.3	15.1	15.6	67	25	25	38					N.W.	N.W.	fresh breeze.	do
24	069	038	71.9	4.3	4.6	87	77	9.97	9.97	73.3	15.1	15.6	67	25	25	38					N.W.	N.W.	do	do
25	046	008	72.5	8.7	9.1	80	55	9.97	9.97	73.3	15.1	15.6	67	25	25	38					SE.	SE.	do	do
26	057	009	75.9	11.4	12.3	73	47	9.97	9.97	73.3	15.1	15.6	67	25	25	38					W.	W.	do	do
27	36.025	9.01	70.8	11.2	12.6	73	44	9.97	9.97	73.3	15.1	15.6	67	25	25	38					W.	W.	do	do
28	049	30.017	61.7	14.1	15.6	64	30	9.97	9.97	73.3	15.1	15.6	67	25	25	38					SW.	SW.	do	do
29	050	060	67.3	6.8	7.5	90	62	9.97	9.97	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
30	108	086	63.4	5.2	3.7	90	82	9.97	9.97	73.3	15.1	15.6	67	25	25	38					n.	n.	do	do
31	050	026	69.6	4.3	5.7	82	75	9.97	9.97	73.3	15.1	15.6	67	25	25	38					N.	N.	hazy. foggy.	do
Mean.	30.073	30.049	69.3	8.0	8.8	79	56	29.970	29.912	75.3	14.4	14.4	67	34	34	40								69.9
																								72.4

The register thermometer having been broken by a bird, the temperature of the water of the river, and of a well affected by the tides has been substituted. The dew-point was not observed this month, and the hair hygrometer is still uncertain.

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I.—*Singular narrative of the Armenian king ARSACES and his contemporary SAPOR, king of Persia; extracted from the Armenian chronicles. By JOHANNES AVDALL, Esq. M. A. S.*

ARSACES the second, son of TIRAN, wielded the sceptre of royalty in *Armenia* in the middle of the fourth century. He was contemporary with the Persian king SAPOR, surnamed the long-lived, with whom he closed a treaty of alliance, offensive and defensive. Both were descendants of the ARSACIDÆ, and thus stood related to each other by the ties of consanguinity. Distrustful of the sincerity of the friendship of ARSACES, SAPOR took the precaution of securing it by the obligation of a solemn oath. He feared a formidable enemy in the person of the emperor of *Greece*, and it was his policy to devise every means in his power to alienate from him the good-will of the king of *Armenia*. In vain ARSACES assured him of his continued attachment. SAPOR sent for the Armenian priests of the church of Ctesiphon, the head of whom was called MARI. ARSACES was induced to swear by the Gospel in their presence, to keep inviolate the profession of his alliance and friendship to the king of *Persia*.

ARSACES was a valiant, but fickle king. His bravery could only be equalled by the degree of perfidy he displayed in his intercourse with the people over whom he ruled, and with his avowed allies. Cruelty and treachery were the principal characteristics by which his acts were distinguished. For a while he continued firm in the observance

of his friendship towards SAPOR, of which he afforded him a proof by co-operating with him in an expedition against the emperor of *Greece*. But, by the intrigues of one of his courtiers called ANDOVK, the good feeling and affection that existed between the two potentates, were changed into the deadliest enmity and hatred. ARSACES waged war with SAPOR for thirty years, and fortune invariably crowned his operations with success. He owed many of his conquests to the skill, experience and intrepidity of the Armenian general VASAK, who, though of a diminutive size, on all occasions inspired the Armenian troops with courage, and created terror and dismay in the Persian ranks.

Flushed with success, and being naturally cruel, he ordered the principal Armenian satraps to be butchered in cold blood, and their estates and property confiscated. These and similar atrocities made him unpopular with his army, and estranged the hearts of the Armenian people from their monarch. Wearied by repeated hostilities, and harrassed by continued carnage, SAPOR addressed friendly letters to ARSACES, inviting him to go to *Persia*, and expressing his readiness to conclude peace with him. ARSACES, however reluctant to desist from the continuance of war, was induced to accept his offer, and, in signifying his acquiescence, sent him suitable presents. But, SAPOR far from wishing to renew his friendship, endeavoured to decoy ARSACES and to annihilate the kingdom of *Armenia*. FAUSTUS of *Byzantium*, who wrote a history of *Armenia* extending to the close of the fourth century, narrates a singularly romantic story about the visit of ARSACES to the Persian king, and his subsequent adventures in *Persia*. The work of this historian was first published in *Constantinople* in the year 1730, and latterly by the Mechitharistic Society of *Venice* in 1832. I shall here give a translation of the narrative.

“Then SAPOR, king of *Persia*, sent another deputation to ARSACES, king of *Armenia*, expressing a desire to effect a reconciliation. ‘If,’ said he, ‘we are willing to be hereafter on terms of peace with each other, this wish can only be realised by a visit to me on your part. I shall be to you as a father, and you as a son to me. Should you, however, be unwilling to accept of my proposal, then I must conclude that you are still inimically disposed towards me.’ ARSACES was apprehensive of visiting the king of *Persia*, without demanding the obligation of a solemn oath from him, Hereupon, SAPOR ordered a little salt to be brought to him, and according to the practice prevalent in *Persia*, sealed it with a ring bearing the impress of a wild boar, and sent it to ARSACES. He also intimated, that in case the

king of *Armenia* disbelieved his oath by refusing to accede to his wishes, then that refusal would be considered as a signal for the commencement of hostilities.

“By the intreaties of the Armenian people, ARSACES was induced to acquiesce, and *nolens volens* resolved to pay a visit to SAPOR. Accompanied by his faithful general VASAK, he proceeded to *Persia*, and was conducted into the royal palace. SAPOR no sooner saw them, than he ordered them to be placed under guards and treated as prisoners. He spoke to the Armenian king with contempt, and looked upon him as a slave. ARSACES expressed his regret for the past, and stood as a guilty man before him, who directed him to be kept under the strictest surveillance.

“Then SAPOR sent for astrologers and magicians, and communicated with them about his royal prisoner. ‘I have,’ said he, ‘on several occasions manifested affection towards ARSACES, king of *Armenia*, but he has returned my kindness with ingratitude and contempt. I have entered into a treaty of peace with him, which he swore to keep inviolate by that sacred volume of the Christian religion, which they call the Gospel. He violated that oath. I had contemplated to be uniformly kind and friendly to him, but he abused the confidence of my friendship. I ordered the Armenian priests of Ctesiphon to be summoned to my presence, from a supposition that they had deceitfully administered an oath to ARSACES, and afterwards instigated him to a violation of that oath. I considered them guilty of a heinous crime, but was assured by the high priest called MARI, of their having performed the task of adjuration in a just and becoming manner. It was also mentioned, that if the Armenian king acted contrary to that solemn obligation, the Gospel, by which he had sworn, would drag him to my feet. I could not, however, persuade myself to believe what MARI and his colleagues asserted. I ordered seventy of them to be slaughtered in one pit, and put their followers to the sword. The Gospel, by which ARSACES had sworn, and which is the fundamental rule of the Christian religion, I desired to be tied with chains and kept in my treasury. But, now I call to recollection the assertion of MARI, who intreated me to spare their lives, and assured me that the very Gospel would bring the perjurer to my feet. The prediction of that priest has been fully verified. It is now upwards of thirty years that ARSACES unceasingly waged war with the Persians, and on all occasions proved victorious. Now, he has surrendered himself to us of his own accord! Could I assure myself of his friendship and allegiance in future, I should allow him to depart in peace to *Armenia*, loaded with honors and valuable presents.’

“The astrologers and magicians required time for the consideration of the question proposed to them by SATOR. On the following day they assembled at the royal palace and said, ‘Since the Armenian king ARSACES has come to you of his own accord, we desire to know how he speaks to you, how he behaves in your presence, and what does he think of himself?’ SATOR replied, ‘He considers himself as one of my servants, and lies prostrate in the dust at my feet.’ The astrologers and magicians advised him how to act. ‘Do what we say,’ replied they: ‘keep ARSACES and his general here in confinement, and send messengers to *Armenia*, with instructions to bring from that country two loads of earth and a large pitcher of water. Get the half of the floor of the royal pavilion strewn with the earth of *Armenia*, and holding the Armenian king by the hand, walk over that part of the ground covered with the earth of *Persia*, and confer with him on a subject. After which, tread with him over the earth brought from *Armenia*, and put him some questions. Thus you will be enabled to ascertain from his address and replies whether he will continue firm in his allegiance and friendship to you, after your allowing him to depart to *Armenia*. Should he, however, assume an overbearing attitude while treading on the Armenian earth, then be assured of the renewal of his hatred and enmity towards you, and of the commencement of fresh hostilities immediately after his return to his native soil.’

“The king of *Persia* adopted the suggestions of the astrologers and magicians. He despatched messengers to *Armenia* with dromedaries, for the purpose of bringing a quantity of earth and water from that country, and trying therewith the proposed experiment. In course of a few days the orders of SATOR were put into execution. He then ordered the half of the floor of his royal pavilion to be strewn with the earth, and sprinkled with the water brought from *Armenia*, and the other half to be covered with the earth of *Persia*. He desired ARSACES, king of *Armenia*, to be brought before him apart from other individuals, and began to walk with him hand in hand. While going to and fro over the Persian earth, SATOR asks, ‘why did you become my enemy, ARSACES, king of *Armenia*? I have looked upon you as my son, and contemplated to form an alliance with you by effecting a marriage between you and my daughter, and thus to take you into my adoption. But you have armed yourself against me, and of your own free will treated me as a foe, by waging war with the Persians for upwards of thirty years.’

“ARSACES replied, ‘I have transgressed the law of friendship, and must confess my fault. It was I that routed your enemies, and put

them to flight, in the hope of being honored by you with rewards. But those, who had plotted my ruin, endeavoured to estrange my heart from you, and to create dissensions between us. The oath, administered to me by MARI, has conducted me to your presence, and here I stand before you! I am your servant, professing submission to you. Treat me as you choose, or kill me. I am a guilty man, and your despicable slave.'

"SAPOR the king holding him by the hand, received his justification, and conducted him to that part of the ground covered with the Armenian earth. No sooner had they began to walk there, than ARSACES changed the tone of his voice, and had recourse to vehement and insolent language. 'Thou wicked slave,' said ARSACES, 'stand aloof from me! Thou hast usurped the throne of thy lords and masters! I must punish you for the wrongs you have done to my ancestors, and the death of the king ARTEVAN* must be revenged on you! Thou hast robbed me of my crown and country, but these must be restored to me, and your audacity shall not be allowed to remain unpunished!'

"The king of *Persia* hearing this, began to walk again with ARSACES on the Persian earth. The Armenian king then renewed the profession of his submission, expressed his regret for what he had said, and, on his knees, retracted all his expressions. But when he was conducted again to the Armenian earth, he became more insolent than before; and on his returning to the Persian earth, he repented of his temerity. From morning to evening many similar experiments were tried by SAPOR, the result whereof appeared only to be a manifestation of alternate feelings of insolence and repentance in the conduct of ARSACES.

"Evening came on, and the hour fixed for supper approached. It was usual with the king of *Persia* to entertain ARSACES on a sofa, placed next to his own throne. But on the present occasion the customary rule was not adhered to. Precedence was given to the other royal guests residing within the court of *Persia*. ARSACES was allowed to occupy the last seat, on the Armenian earth. He preserved silence for a while, burning with indignation and a desire of revenge. At last he stood on his legs and addressed SAPOR thus: 'The throne on which thou sittest belongs to me. Abandon that seat instantly. My nation have a just claim to it. Should you, however, persist in your injustice, you may be sure of meeting with

* ARTEVAN was a king of *Persia*, whom ARDASHIR the Sasanian put to death, and usurped his throne.—*Vide Whiston's Latin translation of the history of Moses Khorenensis, Book II. Chap. lxx.*

a merited retribution from my hands immediately after my return to *Armenia*.

“Hereupon, SAPOR ordered ARSACES to be put in chains, and driven to the castle of oblivion in *Khujistan*. Here he directed him to be kept in strict and perpetual confinement until his death. On the following day he summoned to his presence VASAK MAMICONIAN, the famous Armenian general, and heaped on him torrents of abuse. He took advantage of his diminutive size, and addressed him in a contemptuous manner. ‘Thou little fox,’ said he, ‘remember that it was you that devastated our country for the last thirty years, by putting innumerable Persians to the sword! I will make you die the death of a fox!’ To which VASAK replied, ‘However diminutive I may appear in your eye, I am sure you have not as yet had a personal experience of my mighty arms. I have hitherto acted as a lion, though now you call me by the contemptible appellation of a fox! But, while I was VASAK, I was like a giant. I fixed my right foot on one mountain, and my left on another. The right mountain was levelled to the ground by the pressure of my right foot, and the left mountain sunk under the weight of my left.’ SAPOR desired to know who were personified by these two mountains, that were represented to tremble under the power of the Armenian general. ‘One of these mountains,’ replied VASAK, ‘signifies the king of *Persia*, and the other the emperor of *Greece*. As long as we were not forsaken by the Almighty I held both the potentates in awe and subjection. While we obeyed the laws of the Gospel and followed the paternal advice of our spiritual head, NIERSES the Great*, we knew how to dictate and counsel you. But God has withheld from us the favor of his protection, and we are plunged into the pit with open eyes. I am now in your hands. Treat me as you choose.’ Hereupon the king of *Persia* ordered the Armenian general VASAK to be cruelly butchered, his skin to be flayed and filled with hay, and carried to the castle of oblivion, where the king ARSACES was imprisoned.”

Here ends this singularly romantic narrative of FAUSTUS. The castle of oblivion, it must be remembered, was a place of solitary confinement in *Khujistan*, intended for prisoners of rank and distinc-

* Մեծն Ներսէս NIERSES the Great was one of the pontiffs of *Armenia*, and great-grandson of St. GREGORY the Illuminator. He built upwards of two thousand convents, monasteries and hospitals in *Armenia*, and was consequently called by the appellation of the Հմուլ Architect. He was poisoned by PAP, the son and successor of ARSACES, and was buried in the village of *Thiln*.

tion. The wretched inmates of this dreary habitation were by the law of the land considered politically dead. Even the bare mention of their names was strictly prohibited, under the pain of a similarly rigorous imprisonment. SAPOR owed a debt of gratitude to the faithful steward of ARSACES, called DIRASTAMATN, who had once saved the life of the former from imminent danger in the din and confusion of a battle. "I am willing," said the Persian king, "to make you a recompense for your disinterested services to me. You are, therefore, at liberty to ask any reward you choose, and your request shall be readily granted." DIRASTAMATN expressed his burning desire once to see his royal master. "I have no other wish," said he, "save that of being permitted to visit ARSACES, and to spend a day of merriment with him, released from his chains." SAPOR was unwilling to yield to the wishes of his benefactor, but in consideration of his strong claim on his generosity, allowed him to proceed to the castle of oblivion, under the escort of a trusty guard, and bearing with him a royal mandate sealed with the signet of the court of *Persia*.

DIRASTAMATN, on his arrival in the castle of oblivion, burst into tears and fell at the feet of ARSACES. He untied the chains of his royal master, washed his head, cleaned and anointed his body with odoriferous oil, invested him with costly robes, seated him on a throne, placed before him rare delicacies, and standing near him on his legs, acted the part of a cup-bearer. Affected by an immoderate use of wine, the king of *Armenia* gave vent to his inward grief, and began to groan from the pangs of his heart, by contrasting his former grandeur and happiness with his present servitude and misery. The knife, placed on the cloth, he thrust into his breast, and thus ended his miserable life in despair. DIRASTAMATN seeing this, dislodged the fatal weapon from the breast of ARSACES, and therewith put an end to his own existence.

This narrative of the condemnation and subsequent banishment of ARSACES, by the machinations of magicians and astrologers, is fully noticed by PROCOPIUS, in the fifth chapter of the first book of his history relative to the Persian war, probably borrowed from the historical work of FAUSTUS, extant in the Armenian language. But PHOTIUS, the celebrated Greek Patriarch, who wrote an abridgment of the history of PROCOPIUS, considered this story as a mere piece of romance or fable, and as such it will be viewed by the learned of the present age.

II.—*Translation of an Inscription on a stone in the Asiatic Society's Museum, marked No. 2. By Captain G. T. MARSHALL, Examiner in the College of Fort William.*

[In pursuance of our intention of making known all the inscriptions and ancient records within our reach, along with facsimiles of the characters in which they are written, we now proceed with our review of the unedited blocks in the Society's possession. Captain MARSHALL has kindly undertaken the task of translation in this case, and, as the letters are in perfect preservation and in the well-formed type of the Gaur alphabet, we have thought it unnecessary to insert more than a specimen of the beginning of the inscription, the full size of the original, in Plate VII. The allusion to the Gaur dynasty affords a clue to the date of the document, and on the obscure, half-defaced line at the termination of the 24th line, we think the words *संवत् ३२* are clearly visible, referring doubtless to the same Gaurian epoch which has been remarked in so many other similar monuments, and therefore placing the document in the 10th or 11th century. We cannot discover by whom the stone was presented to the Society. On the back of it are half cut Hindu images.—ED.]

This inscription is without date; but the form of the letters and the names of persons mentioned will probably render the fixing of its age an easy matter to those conversant with such subjects. It was composed by a pandit named SRI' VÁCHASPATI, in praise of a bráhmaṇ of rank and learning, styled BHATTA SRI' BHAVA-DEVA and his family—and it would appear that the slab on which it is engraved, must have been affixed to some temple of which BHAVA-DEVA was the founder. The individuals of this family, whose names are given, are, 1. SÁVARNA MUNI, the root of the gotra or line.—2. BHAVA-DEVA 1st, a descendant of the above, whose elder and younger brothers were MAHÁ-DEVA and ATTAHÁSA.—3. RATHÁNGA, son of the above, who had seven younger brothers.—4. ATYANGA, son of the above.—5. BUDHA, son of the above, surnamed SPHURITA.—6. ADI-DEVA, son of the above.—7. GOVARDHANA, son of the above, whose mother's name was DEVAKI'.—8. BHAVA-DEVA 2nd, son of the above, surnamed BÁLA-VALABHI'-BHUJANGA, whose mother's name was SÁNGOKÁ, and who was minister to Rája HARIVARMMA-DEVA and his son. The inscription possesses considerable interest in a literary point of view. It is written in verses of various metres, from the *Anushtup* of eight syllables in each *páda* or half line, to the *Sragdhará* of 21 syllables. The style is ambitious, and abounds in those mythological allusions and double meanings in which the Hindu poets so much delight. The execution proves the author to have been no ordinary composer.

Facsimile of an Inscription on a stone in the As. Soc. Museum.
First line, full size.

ॐ नमो भगवते वासुदेवाय ॥ नमो भगवते वासुदेवाय ॥
यथा ह्यस्य कृष्णस्य कृष्णस्य कृष्णस्य कृष्णस्य ॥
स नमो भगवते वासुदेवाय ॥ नमो भगवते वासुदेवाय ॥
नामो भगवते वासुदेवाय ॥ नमो भगवते वासुदेवाय ॥
नामो भगवते वासुदेवाय ॥ नमो भगवते वासुदेवाय ॥

Dimensions of the slab, 3 feet by 1½ feet. marked N^o 2.

Transcript of the Inscription in the modern Deva-nāgarī character.

ॐ नमो भगवते वासुदेवाय ॥

- 1 गाढोपगूढकमलाकुचकुम्भपत्रमुद्राङ्कितेन वपुषा परिरिप्समानः ।
मालुप्यतामभिनवा वनमालिकेति वाग्देवतोपहसितोऽस्तु हरिः
श्रियेवः ॥
- 2 बाल्यात्प्रभृत्यहरहर्थ्यदुपासितासि वाग्देवते तदधुना फलतु प्रसीद ।
वक्तास्मि भट्टभवदेवकुलप्रशस्तिस्त्रुक्ताक्षराणि रसनाग्रमधिश्र
येथाः ॥
- 3 सावर्णस्य मुनेर्महोयसि कुले ये जज्ञिरे श्रोत्रियास्तेषां शासनभूम
योऽजनि गृहं ग्रामाः शतं सन्तते ।
आर्यावर्त्तभुवां विभूषणमिह ख्यातस्तु सर्वाग्रिमो ग्रामः सिद्धल
एव केवलमलङ्कारोऽस्ति राठाश्रियः ॥
- 4 सत्यलवः स्थितिमयो दृढबद्धमूलः शाखाग्रलसमुखरदिजशीलि
तश्रीः ।
न ग्रन्थिलो न कुटिलः सरलः सुपर्वा सर्वोन्नतः सुखमिह प्रससार
वंशः ॥
- 5 तदंशोत्तंसमणिः कलस्य दातापि तापनप्रतिमः ।
भव इव विद्यातन्त्रप्रसवः प्रबभूव भवदेवः ॥
- 6 अग्रजानुजयोर्मध्ये महादेवादृष्टासयोः ।
स जज्ञे यज्ञपुरुषोविरिञ्चिहरयोरिव ॥
- 7 स शासनं गौडनृपादवाप श्रीहस्तिनीदिष्टमहीष्टभूमि ।
अथैव सुतानष्टमहेशमूर्त्तिप्रख्यान् विजज्ञेऽथ रथाङ्गमुख्यान् ॥
- 8 रथाङ्गादत्यङ्गः समजनि जनानन्दजननः शशीव क्षीरोदादिव
कलकलाकेलिनिलयः ।
स्फुरत्प्रज्ञाज्योतिः स्फुरित इति नाम्ना दिशि दिशि प्रकाशेऽ
भूत्साम्यग्रह इव बुधस्तस्य तनयः ॥

- 9 तस्मादभूदभिजनाभ्यूदयैकबीजमयाजपौरुषमहातरुमूलकन्दः ।
 श्रीआदिदेवइति देवइवादिमूर्तिर्मर्त्यात्मना भुवनमेतदल
 ङ्गरिणः ॥
- 10 यो वङ्गराजराज्यश्रीविश्रामसचिवः शुचिः ।
 महामन्त्री महापात्रमबन्धसन्धिविग्रही ॥
- 11 स देवकीगर्भभवं भुवः स्थितौ समर्थमुच्चैःपदलब्धपौरुषं ।
 सरस्वतीजानिमजीजनत्सुतं जगत्सु गोवर्द्धनमद्भुतोपमं ॥
- 12 वीरस्थलीयु च सभासु च तालिकानां दोर्लभिलया च कलया च
 वचस्वितायाः ।
 यो वर्द्धयन् वसुमतीञ्च सरस्वतीञ्च देधा व्यधत्त निजनामपदं
 सदर्थं ॥
- 13 वन्द्यां वन्द्यघटीयस्य ब्रह्मणः प्रयतां सुतां ।
 साङ्गोकामङ्गनारत्नं पत्नीं स परिणीतवान् ॥
- 14 तस्यां स्वप्नविधानबोधितनिजोत्पादः स देवो हरिर्जातः श्री
 भवदेवमूर्तिरमुतःक्षामगुह्यलीकश्यपात् ।
 यत्पाणिप्रणयि द्वयञ्जलजयोरालक्षितं लक्ष्मणा यस्यान्तर्निहितोऽस्ति
 कौस्तुभ इति ज्ञातं प्रकाशोदयात् ॥
- 15 लक्ष्मीन्दक्षिणदोष्णि मन्त्रविभवे विश्वम्भरामगुह्यं जिह्वाग्रे च
 सरस्वतीं रिपुतनौ नागान्तकं पञ्चिणं ।
 चक्रम्पादतले निवेशितवता दिव्यन्तदाद्यं वपुर्निहोतुन्निजचिह्नमे
 तदमुना नूनं विपर्ययासितं ॥
- 16 यन्मन्त्रशक्तिसचिवः सुचिरं चकार राज्यं स धर्मविजयी हरि
 वर्मदेवः ।
 तन्नन्दने चलति यस्य च दण्डनीतिवर्त्मानुगा वहलकल्पलतेव
 लक्ष्मीः ॥
- 17 सत्पात्रस्य महाशयस्य कमलाधारस्य यस्य क्षमां बिम्बाणस्य गुणाम्बु
 धेरकलितस्यान्तर्ब्रदीनात्मनः ।

मर्यादामहिमप्रसादश्रुचितागाम्भीर्यधैर्यस्थितिप्रायाः प्रायशश्च
वाक्पथमतिक्रान्ताः स्वदन्ते गुणाः ॥

18 महागौरी कीर्त्तिः स्फुरदसिकराला भुजलता रणक्रीडा चण्डी
रिपुरुधिरचर्च्चा रणभुवः ।

महालक्ष्मीर्भूतिः प्रकृतिललितास्ता गिर इति प्रपञ्चः शक्तीनां
यमिह परमेशं प्रथयति ॥

19 यद्वाञ्छतेजसि बलीयसि मन्दवीर्यः खद्योतपोतकरणिं तरणि
स्तनोति ।

उच्चैरुदञ्चति यदीयशःशरीरे जातस्तुषारशिखरी ननु जानुदघ्नः ॥

20 ब्रह्माद्वैतविदामुदाहरणभूरुद्रूतविद्याद्भुतखट्वा भट्टगिरां गभीरिम
गुणप्रत्यक्षदृष्ट्वा कविः ।

बौद्धाम्भोनिधिकुम्भसम्भवमुनिः पाषण्डवैतण्डिकप्रज्ञाखण्डनपण्डि
तोऽयमवनौ सर्वज्ञलीलायते ॥

21 सिद्धान्ततन्त्रगणितार्णवपारदृष्ट्वा विश्वाद्भुतप्रसविता फलसंहि
तासु ।

कर्त्ता स्वयं प्रथयिता च नवीनहोराशास्त्रस्य यः स्फुटमभूदपरो
वराहः ॥

योधर्मशास्त्रपदवीषु जरन्निबन्धानन्धीचकार रचितोचितसत्प्रबन्धः ।

22 स व्याख्यया विशदयन्मुनिधर्मगाथाः स्मार्त्तक्रियाविषयसंशय
मुन्ममार्ज्ज ॥

23 मीमांसायामुपायः स खलु विरचितो येन भट्टोक्तनीत्या यत्र
न्यायाः सहस्रं रविकिरणसमा न क्षमन्ते तमांसि ।

किं भूम्ना सीम्नि साम्नां सकलकविकलास्वागमेष्वत्र शास्त्रेष्वार्युर्वे
दास्त्रवेदप्रभृतिषु कृतधीरद्वितीयोऽयमेव ॥

24 यस्य खलु बालबलभीभुजङ्ग इति नाम नादृतं केन ।

मीमांसयापि सपुलकमाकर्णितवर्णितोद्गीतं ॥

25 दंष्ट्रालदुष्टभुजगव्रणमोह्वरात्रिप्रत्यूषतूर्यनिनदैरिव मन्त्रवर्णैः ।

यो जीवयन् जगदशेषमभूदपूर्वं मृत्युञ्जयो गरलकेलिषु नीलकण्ठः ॥

26 राढायामजलासु जाङ्गलपथग्रामोपकण्ठस्थलीसीमासु अममम
पात्रपरिघप्राणाशयप्रोणनः ।

येनाकारि जलाशयः परिसरस्नाताभिजाताङ्गनावक्त्राञ्जप्रतिविम्ब
मुग्धमधुपीशून्याब्जिनीकाननः ॥

27 तेनायं भगवान् भवार्णवसमुत्ताराय नारायणः शैलः सेतुरिव
प्रसाधितधरापीठः प्रतिष्ठापितः ।

यः प्राचीवदनेन्दुनीलतिलको लीलावतंसेत्यलं भूमेभूतलपारि
जातविटपीसंकल्पसिद्धिप्रदः ॥

28 तेन प्रासाद एव त्रिपुरहरगिरिस्पर्द्धया वर्द्धितश्रीः श्रीमान्
श्रीवत्सलक्ष्मा हरिरिव विहितो विस्फुरच्चक्रचिह्नः ।

जित्वा यो वैजयन्तं वियति वितनुते वैजयन्तीविलासान् कैलासे ना
भिलाषं कलयति गिरिशो यस्य संलक्ष्य लक्ष्मीं ॥

29 न्यवीविशद्वेश्मनि तत्र विष्णोः स निर्गमरं गर्भमृहान्तरेषु ।

नारायणानन्तसिंहमूर्त्तीर्विधातवक्त्रैर्विव वेदविद्याः ॥

30 एतस्मै हरिमेधसे वसुमतीविश्रान्तविद्याधरीविभ्रान्तिन्दधतीः
शतं सहि ददौ शारङ्गशावीटशः ।

दग्धस्योयटश दृशैव दिशतीः कामस्य संजीवनं काराः कामिजनस्य
सङ्गमगृहं सङ्गीतकेलिश्रियाः ॥

31 प्रासादाग्रे स खलु जगतः पुण्यपण्यैकवीर्यो चक्रे वार्षीं मरकत
मणिस्वच्छमुच्छायतोयां ।

मध्ये वारिप्रतिकृतिमिषाद्दर्शयन्तीव तादृग्विष्णोर्धामाद्भुतमहि
कलस्याधिकं या चकासे ॥

32 व्यधित विबुधधाम्नः सीम्नि संसारसारं स खलु निखिलनेत्रा
नन्दनिस्यन्दपात्रं ।

त्रिभुवनजयखिन्नानङ्गविश्रामधाम प्रथितरतिविभावस्थानमुद्यान
रत्न ॥

33 तस्यैव प्रियमुद्भवा द्विजाग्रिमेण श्रीवाचस्पतिकविना कृता
प्रशस्तिः ।

आकल्पं शुचिसदने समूर्त्तिकीर्त्तिरध्यास्तां जघनमियं सुवर्णकाक्षी ॥

.....*

34 प्रशस्तिरियं बासबलभीभुजङ्गापरनाम्नो भट्टश्रीभवदेवस्य ॥

Translation.

Om ! Salutation to (KRISHNA) the adorable son of VASU-DEVA !

Verse 1. May HARI (VISHNU), who, desiring to embrace (SARASWATĪ) with his body stamped with the impress of the leaves†, of the jar-like bosom of the warmly embraced KAMALĀ (LAKSHMI'), was bantered thus, "Perish not this fresh garland of flowers," by the goddess of speech (SARASWATĪ)—prosper you !—2. O goddess of speech ! since thou hast been daily worshipped from my childhood, let it now yield fruit—be propitious ! I am speaking the excellent words of the praises of the family of BHATTA BHAVA-DEVA. Take thy station on the tip of my tongue !—3. The learned bráhmans who were born in the exalted and continuous line of SÁVARNA MUNI, a hundred villages, lands held by royal grants, became their abode. Among these truly *Siddhala* alone, the famed, the chief of villages, the decoration of the beauty of *Rárhá†*, is the ornament of the regions of *Aryá-varṭta*||, (the holy land.)—4. Here this family§ hath happily spread, with excellent sprouts, honored, with firmly compacted roots, whose glory is promoted by bráhmans¶, arrived at the extre-

* From hence to the end of the 24th line there are evident traces of letters, but they are illegible. (See opening remark : the missing sentence consists of nothing more than the month (illegible) and the year, "Samvat 32" distinctly visible.—ED.)

† Alluding to the ancient Hindu custom of the females adorning the face and person with colored pigments, such as saffron, sandal, &c.

‡ That part of Bengal which lies on the west of the Ganges.

§ Literally, the country where holy men are constantly produced ; bounded, according to MANU, by the eastern and western seas, and by the mountains Himálaya and Vindhya, (MANU, C. ii. v. 22nd.)

|| The word वंश also means "the bamboo," and the poet throughout this verse uses such double-meaning epithets as may be made applicable to both senses.

¶ In applying this epithet to the bamboo, the word द्विज literally, "twice-born" would be rendered "birds"—first born in the egg, and secondly produced from it.

mities of the branches (of the vedas) loudly reciting (those scriptures), not knotty, not crooked, upright, handsome—proportioned, exalted above all.—5. BHAVA-DEVA appeared, the jewel of the crest of that line, a giver of tribute* like the sun, the producer of science and mystic formula, like BHAVA (SHIVA).—6. He was born between two brothers, an older and a younger (named) MAHÁ-DEVA and ATTA-HÁSA; just as VISHNU is between BRAHMÁ and SIVA.—7. He obtained from the king of *Gaura* a grant embracing the choice land of the territory set apart at *Srí Hastiní* (*Hastiní-purí*). Moreover, he saw his eight sons, RATHÁNGA, &c. like the eight forms of MAHESHA† (SIVA).—8. From RATHÁNGA sprung ATYANGA, like the moon from the ocean of milk, the delighter of men, the abode of the undivided god of love. His son BUDHA, the lustre of whose wisdom was resplendent, was as famed in every quarter by the name of SPHURITA, as the planet Saumya (Budha or Mercury).—9. From him arose SRÍ' A'DI-DEVA, the sole seed of the prosperity of his family, the principal root of the great tree of unfeigned manliness, like the god A'DI-MU'RTTI (VISHNU), wishing with a mortal form to adorn this earth.—10. Who was minister during the stability of the fortune of the kingdom of the rája of *Banga*, the pure, the great counsellor, the great minister, the profitable, the disposer of peace and war.—11. He (A'DI-DEVA) begat a son, GOVARDHANA, conceived in the womb of DEVAKÍ', equal to (preserve) the stability of the world, wedded to SARASWATÍ', wonderful in the worlds.—12. Who advancing in fields of battle, and in the assemblies of the possessors of divine truth, both his territories and the art of speaking, by the deeds of his arm and the cunning of his eloquence, made his name justly applicable to his character in two senses of the word‡.—13. He took to wife SÁNGOKÁ, the venerable, the virtuous daughter of a bráhmaṇ of the race of Vandyá Ghatíṣ, the jewel of women.—14. In her, announcing his

* The word here rendered "tribute" looks most like किलश in the original; but that reading makes no sense. It is here translated as if it were कलस्य for करस्य (र and ल being interchangeable), which word meaning also a "ray of light," the resemblance to the sun may, by a play on the word, be established. It appeared, on first observation, not unlike कैलास; but on considering the metre, this reading proved inadmissible. The measure of this verse is the Aryá of 30 instants in the first line and 27 in the second.

† The eight forms of MAHESHA, viz. water, fire, the instituter of a sacrifice, the moon, the sun, the ether, the earth and air, are enumerated in the introductory benediction of the Drama of SAKUNTALA.

‡ Govardhana means "increaser of land or territory," and "promoter of speech or eloquence." गो "the earth, speech," and वर्द्धन "increasing."

§ Name of a family of Rádhíya bráhmaṇs.

own birth by a vision, was conceived, by this Kashyapa of the earth, the god HARI, in the form of SRI' BHAVA-DEVA, on whose hands are beheld marked two lotuses, within whose breast the *kaustubha* (the jewel of KRISHNA) is, from outward appearances, known to be deposited.—15. By whom, placing LAKSHMI' in his right shoulder, the earth in the force of his counsel, SARASWATI' in the tip of his tongue, the bird Nágántaka (Garuda) in the body of his enemies, and the discus in the soles of his feet; these his symbols were, for the sake of concealing that divine and primeval body, perverted.—16. Assisted by the force of whose (BHAVA-DEVA's) counsel, that conqueror in virtue HARI VARMA-DEVA long exercised dominion. In the reign of his son also, LAKSHMI', like a firm Kalpalatá (a tree of heaven, bestowing all desires) followed the path of his (BHAVA-DEVA's) policy.—17. Of whom the worthy, the high-minded, the possessor of KAMALÁ, the pardoning, the sea of virtues, the undisturbed in mind, and ocean-souled—the qualities, such as rectitude, greatness, kindness, purity, depth, firmness, and determination, almost transcending the bounds of speech, greatly delight (the world).—18. Who is proclaimed to be *Parameshwar* (the Supreme Lord) on earth, by the following assembly of the *Shaktis* (energies of the Deity), viz. his fame (a form of) the great GAURI'—his arm graceful as a climbing plant, and terrific with the quivering sword (a form of) CHANDI', delighting in war and smeared with the blood of enemies in the field of battle—his person (a form of) the great LAKSHMI'—and lastly, that naturally graceful eloquence.—19. Before whose most powerful bráhmínical splendor the faint solar luminary enacts the part of a young fire-fly. Before the high aspiring body of whose fame the snowy mountain (the Himálaya) is truly as high as one's knee.—20. This personage, a specimen of those who know the unity of BRAHMA, a creator of wonders in already existing science, an evident discerner of the profound virtues of the words of philosophers, a sage, another jar-born saint (AGASTYA MUNI) to the sea* of Buddhism, skilful at annihilating the opinions of heretics and cavillers, displays the qualities of SARVAJNA (the omniscient†) upon earth.—21. Who, seeing across the ocean of spiritual knowledge, mystical learning, and the science of computation; being a producer of all wonders in worldly sciences; and being himself the inventor and promulgator of a new system of Astrology, has evidently become another VARA'HA‡.—22. He, by composing a proper and excellent

* Alluding to the legend of AGASTYA MUNI's swallowing the ocean in a fit of anger. AGASTYA is said to have been born in a water-jar.

† Also a title of the deified saints of the Buddhists.

‡ VARA'HA MIHIRA, a great astronomer, and one of the nine learned men styled नवरत्न "the nine gems."

work, rendered blind (useless) in the paths of the science of law, the old expositions; and also, by making clear with his commentary the verses of the Munis on that subject, entirely removed every doubt regarding lawful actions.—23.* By whom truly that aid in spiritual knowledge, in which a thousand arguments like the rays of the sun endure not darkness, was composed according to the rules prescribed by the learned. What need of many words! this sage is unrivalled in the following branches of knowledge; viz. the *Sāma-veda* to its utmost extent, all the arts of poets, sacred science, the *Ayur-veda* (science of medicine), the *Astra-veda* (science of arms), &c.—24. By whom, indeed, is his name BĀLA-VALABHI'-BHUJANGA† not honored?—it is with extasy heard, described, and proclaimed even by *Mīmāṃsā* (sacred science) herself.—25. Who (BHAVA-DEVA), bringing to life a whole world by means of his mystical incantations, which resemble the morning clang of instruments breaking the night of unconsciousness caused by the bite of a fanged and rabid serpent, has become an unequalled MRITYUNJAYA (conqueror of Death, a name of SIVA), in sporting with poison, another NILA-KANTHA, (blue-throat‡, another epithet of SIVA.)—26. By whom was formed in *Rarha*, in the arid boundaries of land bordering a village situated on a wild road, a reservoir of water which fills the water-jars, the desires and the minds of travellers sunk in fatigue; and of which the beds of lotuses are abandoned by the bees fascinated by the reflected shadows of the lotus-like faces of beauteous damsels who have bathed on its banks.—27. By him this stone (image of) the adorable NĀRĀYANA (VISHNU), by which the face of the earth is adorned, was fixed like a bridge for crossing the ocean of material existence. Which, being the dark-blue frontal mark of the moon-like face of the eastern quarter, is to the earth (as it were) a lotus used sportively for an ear-ring, the *Pārijāta* § tree of this world, the bestower of completion of designs.—28. By him was erected this splendid temple, whose glory is exalted in emulation of the mountain of (SIVA), the destroyer of *Tripura*, and which like HARI (VISHNU), is distinguished by the mark called

* This verse is in the Sragdharā metre of 21 syllables in each pāda or half line.

† The meaning of this surname is not apparent: it is compounded of three words, बाल "young, ignorant," &c. बलभी "the frame of a thatch, a turret;" also I believe the name of a city and a dynasty, and भुजङ्ग "a snake, an adulterer."

‡ SIVA is said to have swallowed the poison produced among other things, at the churning of the ocean; the only effect it produced on the god was a blue mark on his throat, whence this epithet. This verse celebrates BHAVA-DEVA's excellent knowledge of antidotes.

§ The name of a celestial tree which grants all desires.

*Srī Vatsa**, and by the trembling discus. Which (temple) having overcome *Vaijayanta*, (the palace of *INDRA*,) waves out a flag in the sky. Beholding the beauty of which temple, *GIRISHA* (*SIVA*) no longer desires *KAILĀSA*.—29. He (*BHAVA-DEVA*), placed in that house of *VISHNU*, in the innermost sanctuaries, the images of *NĀRĀYANA*, *ANANTA*, and *NRISINGHA*, as the vedas in the mouths of *BRAHMĀ*.—30. He gave to this (temple, an) offering to *HARI†* a hundred damsels, with eyes like those of a young deer, who are mistaken for celestial dancers sojourning on the earth, who with a glance restore to life *KĀMA*, although he was burnt up by *UGRA-DRIK*, (fiery-eye, i. e. *SIVA*,) who are the prison-houses of the impassioned, the abode of melody, dalliance, and beauty united.—31. He truly made in front of the temple a pool, which is a market of purity alone, the water of which is pure and sparkling as an emerald, which, displaying under the form of a reflection in the water, the exact scene of *VISHNU*'s deceiving the *Hydra‡*, appears most splendid.—32. He on all sides of the temple formed an excellent garden, the quintessence of the earth, the vessel into which the delight of all eyes distils, the place of repose of *ANANGA* (the god of Love) wearied with the conquest of the three worlds.—33. This eulogium was composed by his dear friend, the learned *SRI' VĀCHASPATI*, the chief of *Brāhmans*. Let this golden zone, like a beautiful form of fame, remain on the loins of this pure edifice until the destruction of the world!

..... [in the year 32.]

This eulogium is upon *BHATTA SRI' BHAVA-DEVA*, surnamed *BĀLA-VALABHI'-BHUJANGA*.

* A peculiar mark on the breast of *VISHNU*, said to be a curl of hair twisting to the right.

† The compound word *हरिमेघसे* here translated "an offering to *HARI*," has given much trouble; and the sense at last adopted does not appear very satisfactory. The word *मेघस्* is not found in Dictionaries: it is substituted by a grammatical rule, for *मेघा* "understanding;" but only when compounded with a negative, or with *दुः*, *सुः*, *मन्*, or *चल्य*. The meaning here given is thus arrived at, the word *मघ* is given in *WILSON* as meaning "an offering," and is derived from the root *मेघ* by adding the affix *अप*: it has therefore been supposed that this word *मेघस्* may be formed by affixing *असुन्* to the same root, with the same meaning.

‡ Referring to the story of *KRISHNA*'s conquering the one hundred and ten-headed serpent *Kāliya* in the river *Yamunā* near *Vrindāvana*.

III.—On the explanation of the Indo-Scythic legends of the Bactrian Coins, through the medium of the Celtic. By Dr. J. SWINEY.

[In a letter to the Editor.]

Aware how much the Journal has forwarded the successful pursuit of Indian antiquities, I might have chosen to address its Editor solely on that account. I deem him, however, to have further claim to precedence in having been the first to decipher the ancient character, so recently brought to light by the discovery of what have been styled Bactrian coins, for want, perhaps, of a better name. I shall proceed then to offer you a few observations upon two or three of these coins, the legends of which have as yet been unexplained—premising, that in a path so untrodden, every new aid, from whatever source it may proceed, (providing it have antiquity on its side,) must be welcomed in the pursuit.

It is with this view, if I mistake not, that you have sought to adapt the Zend to the Sanscrit of the present day—and that the Parisian Secretary has chosen for his guide the ancient Syriac, to which, in all probability, he had recourse, from the frequent occurrence of the word *Malka**, both on coins and inscriptions. The key I propose is the Celtic—a name given to a language now only known by its remains, preserved to us by various *hordes* of men settled in Europe, it is true, but for whom the learned of every age have claimed an eastern descent and high antiquity. What advantages the Celtic may possess over the Zend and the Syriac in unravelling Bactrian terms, remains to be proved: it will be admitted, however, by the examples I am about to give, that something more than a verbal coincidence of terms has been ascertained. The first coin I shall notice, and which indeed was used as the touchstone of the system, (after reading that the word “Pisergird” was as good Welch as it was Persian,) is that of Colonel STACY, given in your November number:—on this is seen the usual device of the god *Lunus*, with the Greek letters ΔΟΗ, instead of ΜΑΟ: it was immediately discovered that the Welch dictionary gave *Lloer*, the moon; which led to a reference to the great “Vocabulaire Celtique of M. BULLET,” which gave *Loer* Lune; and on consulting what the author says on the value of letters in Celtic, the following notice was found:—“R placée ou omise indifferemment à la fin du mot—exemple: Dwr = Dw = eau.” All this proving satisfactory, another legend was tried by the same test—namely, the “ΟΑΔΟ” upon coins of the naked running figure, so common among the Bactrian series. Here the Celtique renders *Oad* and *oed*,—âge, temps, adding ætas, Latin; giving every reason to believe

* On the contrary, M. JACQUET reads the word for king, not *malka*, but *mirva*, the equivalent in Syriac, we believe, for “dominus.”—ED.

that the figure is no other than *Kronos*. Hitherto, if I mistake not, this device has been identified with Hercules in his character of "The Sun" running his course; and thus we find in ANTHON'S edition of LEMPRIERE'S Classical Dictionary, Art. Hercules, Bactrian and Parthian coins expressly mentioned having figures of the Phœnician Hercules*: the word "fugiens" of VIRGIL'S description of the god *Saturnus*, might have, however, suggested him as the personage meant in his character of *Kronos*; and, indeed, the former is to be met with in some illustrations of the god, much in the same nude and running attitude as that in which he is seen upon the coins. VIRGIL says—

"Primus ab æthereo venit Saturnus Olympo,
Arma Jovis fugiens et regnis exul adeptis."

On looking over the Vocabulary given in the Zendavesta, "*Ved-na*" is given as *Pehlevi* for tems—this seems the same (perhaps in the genitive case) as "oed" of the Celtic Vocabulaire.

Another remark may be considered to be called for on this coin. M. BURNOUF, as noticed already in the Journal, alludes to the peculiarity of the Zend words ending with "O" final; and thus it may be observed that the OAD of the book becomes OADO on the coin, as NAN of the book becomes NANO of the coin.

Again, the legend that runs through whole series of these old coins is RAO NANO RAO, accompanied, I believe, in some instances, with a Greek translation on the opposite side of the coin of ΒΑCΙΑΕΩC ΒΑCΙΑΕΩΝ†. This left no doubt of the meaning of the phrase, being equivalent to *Malkan Malka* of another series—still the word NANA was not made out very satisfactorily; whereas the Celtique Vocabulary has "*na, nan* article du genitif;" thus word for word—king of kings. With regard to *Rao*, there is no difficulty—"Ro-ard" being given as "supreme souverain" precisely in the same sense as "ard" is found on the coins—ex. gr. "ard-okro," "sol supremus‡."

* The remark in LEMPRIERE doubtless alludes to the reverse of the coins of EUTHYDEMUS. Those of HERMÆUS and some other of the new names would equally bear out the expression, without including the OADO reverse, which certainly has as much analogy to *Buddha* or *Woden*, as OKPO has to *Arka*, &c.—ED.

† The title *rao* is substituted for *basileus*, and *rao nano rao* for *basileus basileôn*, on precisely similar coins, but we do not know of any instance in which they occur together.—ED.

‡ The explanation of *nano*, as a genitive affix before *rao*, is perhaps the most plausible of these Celtic elucidations—but the Vocabulaire does not call *nan* the *particle* of the genitive, but the *article* of that case; and we find in "PRITCHARD'S Celtic nations" in the declension of *an bard*, a poet, the nominative plural, *na baird*; genitive, *na mbhard*; dative, *o na bardaibh*, &c. So that, in the Erse dialect at least, *na* is the general article in the plural, as is *an* in the singular. See observations on this word in Vol. III. p. 448.—ED.

The *σωτηρ* of the coins, according to my book, should be *kada-dao*, signifying *Sauveur, Défenseur*, which accords well with קדדא.

The *μεγας* seems to read *rarao*—that is, *tres grand*, from “*ra*—grand,” duplicated, and therefore perhaps the vowel is repeated קדדאקדדא; or “*ra*, grand,” and “*re*, pour le superlatif;” thus, “*bras élevé*,” “*re-bras, fort élevé*.” Vide Celt. Vocab.

Another coincidence and to conclude. A coin of Lysias has on the Greek side ΑΝΙΚΗΤΟΣ—literally, “not-vanquished.” On the opposite side of the coin is the native legend which you have rendered “*apatilo*,” for which the Vocabulaire gives—“*ap*, sans”—“*atela*, combat, confusion.”

The instances of “*ap*” being used for “sans,” or for the Greek “*α* privatif” in the Celtic, are numerous, and the Zendavesta gives the following three instances: “*apos*—*aposan*—(*ap*—sans; *os*—petite)—qui est sans enfans;” “*apetiare*—sans mal;” “*apotkar*—qui ne parle pas, (*ap*—sans; *padkar*—paroles.)” Vide Pehlevi Vocab.

All this may appear to us very new, shut out as we are from access to numerous glosses to be found mouldering on the shelves of every national library in Europe; but we shall cease to be surprised when we read that the author professes to have drawn his *material* from such sources as “les restes de l’ancien Indien, de l’ancien Persan, &c.

It remains, however, to be regretted that the vocabulary is not easier of being consulted by the reader, and still more that no references are given to individual passages; for in one place, at least, he cites a word as belonging to the *Bactrian* language.

NOTE.—We have with pleasure inserted Dr. SWINEY’S Celtic illustrations, although we hardly think it was necessary to go so far north for an explanation of our Indo-Scythic legends, when the Sanscrit, in most cases at least, furnishes as close an agreement: and the connection of the Celtic with the latter has been traced by philologists with as much plausibility, as the more obvious derivation from the same source of the Greek, Latin, Teutonic and other European fundamental languages. Had Dr. SWINEY fallen upon the following passage in GRIFFITH’S *Animal Kingdom*, order *Ruminantia*, page 411, which has by chance just met our eye, he might have found in it a wonderful support of his theory:—“The cow is repeatedly a mystical type of the earth in the systems of ancient Greece, or a form of *ΒΗΑΝΙ* with the Hindus, and still more marked in the *lunar arkite* worship of the Celtic nation.” The coincidence here with the reverses on the inferior Kadphises type of coins which bear the taurine figure surmounted by the word *OKPO*, is sufficiently striking: yet we cannot imagine in it more than an accidental similarity of words—so far, indeed, not fortuit-

ous that the Celtic worship of the celestial bodies may be traced in a general way to the ancient Mythos of Central Asia, whence the people themselves may have originally emanated, but from which they had been disconnected for ages anterior to the time of JULIUS CÆSAR, and à fortiori long before our Indo-Scythic coins were struck.

The legend of Col. STACY's last coin, ΛΟΗ, has given rise to a variety of conjectures:—the possessor supposes it a date,—but the only way in which it could be thus read, as Capt. CUNNINGHAM points out, is by supposing Λ to stand for *λυκαβατος*, as on the Egyptian coins, Λ ΟΗ anno 78. For ourselves we still maintain that, as the obverse legend is evidently a mere jumble of the title ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ, there can be no hesitation in pronouncing ΛΟΗ a similar jumble of ΗΛΙΟΣ, rather than of any other of the known reverses, which, it will be remembered, do not appear until the Greek titles of the king give way to the indigenous appellation RAO. On receiving the *Journal des Savans*, we searched through M. RAOUL DE ROCHETTE's papers on the *Honighberger* and *Ventura* collections with avidity, to see how he would read these curious legends, and were at first mortified by finding that he dismissed them as “letters apparently resembling Greek”—then, as fit topics for “*Indianistes*—being out of the department of his own studies.” In the number, for *Mai* 1836, however, we are happy to find that our own readings of *Okro*, *nanaia*, *mao*, &c. are confirmed by the learned German Professor of *Gottingen*, M. K. OTT. MÜLLER; to whom M. R. DE ROCHETTE awards the merit of reading a gold coin of *Kanerkes* in the French cabinet which he had left untouched;—“le revers, ΑΡΔΟΚΡΟ semble ne pouvoir s'expliquer, comme l'a proposé aussi très ingénieusement M. K. OTT. MÜLLER, que par le mot Sanscrit OKPO combiné avec une seconde racine Sanskrite.”—ED.

IV.—*On three new Genera or sub-Genera of long-legged Thrushes, with descriptions of their species.* By B. H. HODGSON, Esq.

MERULIDÆ, CRATEROPODINÆ; *Aipunemia*? *Tesia*, nobis; *Tee-see* of the Nipalese.

Bill shorter than the head, straight, and with the nares* perfectly Cincline. Wings very feeble, and quite round. Tail nearly obsolete.

Rictus and capistrum smooth. Tarsi very high, slender, and quite smooth. Toes and nails *meruline*, *slender*, and compressed.

1st Species. *Cyaniventer*; blue-bellied, nobis. Above, medial grass green: below, slaty blue: bill, horn color: legs, fleshy grey: iris, brown: $3\frac{3}{4}$ inches long by $5\frac{1}{2}$ wide: weight $\frac{1}{3}$ of an oz.: sexes alike.

* In *Aipunemia* the covering of the nares is corneous: in *Tesia*, it is pure membrane. In the former, again, the tarsal scales are apparent; whilst in *Tesia* there is no trace of them.

2nd Species. *Flaviventer*; yellow-bellied, nobis. Above, grass green: below, full yellow: mask covering the face and ears, bright chestnut: bill, dusky above, fleshy below: legs, fleshy white: iris brown: size of the last: sexes alike.

3rd Species. *Albiventer*, nobis. Above, olive brown, dotted with buff: below, white, each plume being largely marked in the centre with dusky-brown: bill, dusky horn with a fleshy base: legs, brown: iris, brown: $4\frac{1}{2}$ inches by $7\frac{1}{2}$, and $\frac{3}{4}$ oz. in weight: tarsi rather lower and stouter, and bill rather stouter than in the preceding species, which are the typical ones.

4th Species. *Rufiventer*, nobis. Above, olive brown, as in the last, but less dotted: below, rufous picked out with dusky, as in *Albiventer*: legs, fleshy brown: bill dusky horn: iris, brown: size of the last, from which this species differs only (but permanently) by the ruddy ground color of the inferior surface.

Remark. These little birds have a very strong muscular stomach, and feed on hard grass seeds and hard minute insects. They procure their food entirely on the ground, and live in woods exclusively. They are almost equally common in the central and lower hilly regions: in the northern I have not found them.

CRATEROPODINÆ. Genus *Larvivora*, nobis.

Bill equal to head, subcylindric, straight and slender; at base rather broader than high, and gradually narrowed; ridge considerably keeled: upper mandible rather longer than the lower, and vaguely inclined and notched.

Rictal and nuchal hairs small and feeble. Wings, tail, and nares as in *Turdus*, but the two former somewhat less developed.

Tarsi elevate, slender, nearly smooth: toes, all of them, compressed; lateral fore and hind sub-equal; exterior fore connected to the first joint. Nails, moderately arched and rather acute.

1st Species. *L. Cyana*; blue *Larvivora*, nobis. Above, full blue: below, bright rusty, paler and albescent towards the vent and under tail-coverts: thighs, blue with white cross bars: cheeks, black: superciliary line, white: bill, dusky horn: legs, fleshy grey: iris, brown: 6 inches long by $9\frac{1}{4}$ wide, and $1\frac{1}{4}$ oz. in weight: sexes alike.

2nd Species. *L. Brunnea*; brown *Larvivora*, nobis. Above, brown: cheeks and sides, rusty: below, white: bill, dusky horn: legs, fleshy grey: iris, brown: sexes alike: size of the last.

Remark. These birds differ conspicuously from *Tesia* (SWAINSON'S *Aipunemia*?) by stronger wings and tail, by their less cylindric and less entire bill, and by their open meruline nares. They have much of the aspect of the *Sylviadæ*, but are essentially terrestrial. Do they not constitute the oriental type of the American *Dryophilæ*? and do

they not serve, in a remarkable manner, to connect the *Merulinæ* and the *Crateropodinæ*?

They are common to all the three regions of *Nipál*, and never quit the woods. They perch freely, but are usually on the ground. Their stomachs are feebler than in *Tesia*, and they do not take seeds or gravel. From the number of insect nests and larvæ found in their stomachs, I have called the genus *Larvivora*.

CRATEROPODINÆ. *Paludicola*, nobis. *Syimya* of the Nipalese. Habitat central and lower regions.

Character:—Bill scarcely longer than the head, stout, hard, entire, much higher than broad, sub-arcuated throughout, with both tips inclined downwards and obtuse. Tomiæ, beyond the nares, deeply locked, trenchant and scarp internally.

Nares, meruline, but nearly or wholly hid by setaceous plumuli. Rictus, smooth. Frontal and chin plumes rather rigid. Wings, feeble, rounded and bowed; primaries and tertiaries equal; fifth and sixth quills longest and sub-equal; the three first conspicuously gradated. Tail short, square, and bowed, not feeble. Tarsi very elevate, slender, nearly or quite smooth. Toes compressed and meruline; outer fore connected beyond the joint, hind sub-equal to inner fore, considerably less than the central fore, not depressed. Nails straightened and blunt; hind largest. Knees nude, tibiæ plumose.

Remark. These birds never quit the forests, and usually adhere to those parts of them which abound in thick low brush-wood. They seldom perch save at night, and then only on low bushes. They feed principally in swamps and rills, upon the hard insects proper to such sites. Berries and seeds they seldom or never touch: and the sand occasionally met with in their stomachs is probably taken unintentionally. Their tongue and intestines resemble those of the Thrushes proper, with only a considerable increase in the length of the intestinal canal, which is sometimes 30 inches long. They fly so ill and are so stupid that I have seen them taken by a single man. They are much allied in manners and in structure to the *Myotherine Pittæ*, but they appear to me, upon the whole, to belong to the *Crateropodinæ**, though I apprehend that the details of that sub-family call for much further investigation on the part of its able institutor, who, I am persuaded, will discover that *Cinclosoma* and *Pomatorhinus* constitute large and independent groups or genera, distinguished by marked peculiarities both of habits and of structure.

Species new. *Paludicola Nipalensis*, nobis.

Body, wings and tail, superiorly dark obscure green, shaded with

* RICHARDSON'S North American birds, page 156. At page 488, Mr. SWAINSON is disposed to make *Cinclosoma* and *Pomatorhinus* sub-genera of *Crateropus*!

rufous brown : quills and tail feathers more saturate : wing coverts with large buff drops at the end of each plume : remiges and rectrices, internally dusky : the 4 or 5 first quills of the wings paled at their bases on the inner web : lining of wings, mixed buff and dusky : forehead, face, neck, and body, below, brownish rusty, picked out on the under tail-coverts with blackish, and deepened on the thighs and sides into fulvous brown : nape and dorsal neck, dull azure or verditer blue : chin frequently hoary : behind each ear a triangular black spot, united anteally by a gular band of the same hue : iris, brown : bill, dusky above, fleshy towards the commissure and inferior base : legs, ruddy flesh color : nails, horny white : size 9 to 10 inches by 15, and 5 to 6 oz. in weight.

N. B. Sexes essentially alike, but the female paler ; her gular band broken or interrupted ; and her wing coverts frequently unspotted. The males, too, want these spots, except when they are in full plumage : the bright brownish rusty hue of their forehead cheeks, and body below, fades to a fulvous or dull fawn color in winter : and the tail coverts are then immaculate. The lower belly and vent are paler than the breast, and frequently albescent.

V.—Description of three new species of Woodpecker.

By B. H. HODGSON, Esq.

HUMBOLDT asserts and SWAINSON repeats that there are no such forests, or native tenants of the forest, as those of the New World. But he who has tracked the wild elephant and bison through the colossal avenues of the Saul (*Shorea Robusta*), or the *Ghóral* and *Jháral**, through those of the *Deodár* (*Pinus Deodara*) of India, may perhaps be permitted to doubt this. If the forests of America are ‘lofty and interminable,’ so are those of the sub-Himálayan mountains, from the skirts of the Gangetic plain to the very edge of the perennial snows. The zoological treasures of India may be less celebrated than those of *America—carent quia vate sacro*—but it is by no means probable that they are less worthy of celebration. SWAINSON’S observation, above referred to, has reference more especially to the Woodpecker tribe ; in respect to which he avers that the pre-eminently typical species are exclusively American. But this is a mistake : the sub-Himálayan forests afford several such species, one of which rather exceeds, than falls short of, the famous ivory bill (*Picus principalis*) of *America*. My collection of Nipalese Woodpeckers already embraces 16 species, which exhibit every known modification of form. I propose at present to describe the most powerful and the

* *Capra Quadrimammis*, nobis, and antelope *Goral*.—HARDWICKE.

feeblest of these, as well as one intermediate species ; beginning with the largest and ending with the least.

PICIANÆ. Genus *Picus Auctorum*, sub-genus *Picus*, SWAINSON. Species new. *Picus Sultanus*, Royal Indian Woodpecker, nobis.

This noble bird, facile princeps among the oriental Woodpeckers, and second to none in the world in size, strength, and typical attributes, is 15 inches long by 23 wide, with a weight of from 8 to 9 ounces.

Form. Bill $2\frac{1}{2}$ inches long, a third longer than the head ; at base higher than broad ; the ridges sharp and straight ; the sides strongly angulated ; the tip perfectly wedged : extremely powerful and hard throughout : great lateral angle of the maxilla, extending centrally from the base three-fourths to the tip, where it is taken up by two smaller angles proceeding ascendantly to the cuneate point, and serving as ribs to fortify it* : lower mandible with the sides subangulated after the manner of the upper ; its point similarly wedged, but with only one terminal rib instead of two. Nares, elliptic, lateral, closed superiorly by the ledge of the great lateral angle of the bill ; vaguely membraned, and more or less free from the nuchal tuft of plumes : orbits, nude : head, large and broad with a pointed crest : neck, slender and uncrested : tarsi longer than the anteal, shorter than the postal, outer toe : the latter toe conspicuously the longest : the grasp extremely oblique, with the two hinder toes directed laterally outwards, and capable of being brought to the front. Talons very falcate, acute, and angulated beneath near the tips : wings, medial, reaching nearly to the centre of the tail : 5th quill longest : 4th and 6th sub-equal to it : 1st, three inches, and 2nd, one inch less the 5th : primaries plus the tertiaries, one inch. Tail, extremely strong, moderately wedged : the six central feathers with the shafts bent inwards, and the webs very spinous ; the laterals similar but less strong ; the tips of the whole bifurcate.

Color. Top of the head and lower back, carmine : upper back and wings, externally golden yellow : band from the eyes round the forehead, ruddy brown : neck, from the eyes, laterally, black ; anteally and postally, white, with five black gular stripes on the anteal aspect : breast black with large central drops of white, more or less brunescent : rest of the body below, and lining of the wings, white, transversely barred with black : rectrices and their upper coverts, pure

* In no other species have I noticed more than one sub-terminal lateral angle ; nor is there any other, with the power this possesses, of directing the whole of the toes to the front. The better to shew the pre-eminence of this species, I will add to my paper the description of another belonging to the same sub-genus. See *Pyrrothotis* in the sequel.

black : wings internally, and the primaries wholly, blackish, with 3, 4, or 5 ovoid white spots, ranged barwise across the inner webs of all the feathers :—Female, the same ; save that her cap is black, with a white drop on each plume : bill and legs slaty, with a greenish or yellowish smear : nails dusky : iris, carmine in the male, orange-red in the female : orbital skin, green in both : 15 inches long by 23 wide, and 8 to 9 oz, in weight.

N. B. The young at first resemble the female, and the males do not assume their perfect plumage till the second or third year. Black is the prevalent *under-color* of the species, and may be seen, unmixed, beneath the carmine crest of the males, and mixed with white, disposed barwise, beneath the carmine of their lower backs. This species breeds once a year, in May. It moults also but once, between June and October, both inclusive. There is another Nipalese species scarcely distinguishable from this by colors, and which has been confounded with it by those who venture to describe from one or two dried specimens. The two species differ, however, *toto cœlo* in all typical and characteristic respects.

Sub-genus DRYOTOMUS. Species new : *Flavigula*, yellow throat, nobis.

Form. Bill $1\frac{3}{4}$ inch, a fourth longer than the head ; at base as broad as high, and soft in the lower mandible ; the ridges scarcely straight or acute ; and the tips very imperfectly wedged : great lateral angles of the maxilla, short and raised to the level of the culmen, giving the latter towards the base of the bill a character of flatness and breadth observable in no other sub-genus : nares shaped as in the preceding, but unprotected above by a corneous ledge, and usually quite hid by the nuchal tuft : orbits, nude : head, less broad and not crested : neck fuller, shorter, and, with the nape, crested posteally : tarsus rather longer than the anteal outer toe, which is distinctly larger than the postal one : the grasp almost direct ; and the two posterior toes wholly incapable of being brought to the front, or even of acting laterally : talons powerful as in the last and similarly angulated beneath : wings and tail with the general characters of the last ; only rather more elongated and the latter feebler : 5th quill longest : 1st, $3\frac{1}{4}$, and 2nd, $1\frac{1}{4}$ inches less the 5th : primaries plus tertiaries $1\frac{1}{4}$ to $1\frac{1}{2}$ inch : tail much pointed and conspicuously wedged.

Color. Above brilliant parrot-green, duller on the top of the head, and merged in brown on the forehead : back of the neck, glossy silken yellow : chin and throat, pale greenish yellow : neck, to the front and sides, black green, picked out with pure white, which co-

lor occupies the bases of the plumes: body below, slaty grey with a green smear: wings internally, and the primaries wholly, igneous cinnamon, with five or six blackish cross bars occupying both webs of the primaries, but the inner webs only of the secondaries and tertiaries: tips of the primaries, black brown: rectrices, pure black: lining of the wings, whitish with black bars—the ground color tinged with the proximate lines: the bill, white with a plumbeous base: feet, plumbeous or slaty blue: orbital skin, green: sexes alike: immature birds have the chin and throat brown like the forehead: 14 inches long by 21 wide, and 6 to 7 ounces in weight.

YUNXINÆ*.

Genus or sub-genus new. *VIVIA*, nobis. *Wee-wee* of the Nipalese.

Generic character:—

Bill shorter than the head, straight, conical and acuminate: tip of the upper mandible, sub-wedged—of the lower, pointed.

Nares rounded, and hid by the nuchal tufts. Wings to middle of tail; 1st quill and sub-bastard, 2nd long, 5th longest; all entire: primaries longer than tertiaries, $\frac{1}{4}$ inch.

Tail medial, soft, 12†, the six centrals, even: the six laterals, extremely gradated: tongue and feet *picine*; the anterior and posterior outer toes equal to each other and to the tarsus.

Species new. *V. Nipalensis*; Nipalese *Vivia*, nobis.

Form, has been accurately described in the generic character.

Color. Above, greenish yellow, darker and duller on the head, dorsal neck, and ears: below, white, tinged with yellow, and ocellated from the chin to the breast—cross-barred thence to the tail, with black: two white lines down each side the head and neck, from the bill to the shoulders, enclosing the eyes and ears between them: frontal zone, pale and yellow: rectrices, the two central, black on one web, white on the other; the four next wholly black; the rest paled on the outer webs and tips: wings, dusky brown internally, and void of bars; towards the base paled: males with a chesnut forehead, dotted with black: females with a saturate green forehead, concolorous with the upper surface of the head and neck: sexes of same size: 4 inches long by $7\frac{1}{2}$ wide, and $\frac{1}{2}$ an ounce in weight.

Remarks. These singular little birds are clearly distinguishable from the genus *Yunx* (*Auctorum*) by their *Picine* tongue and by the

* With the general reader no apology will be necessary for describing the following little bird as a Woodpecker. The *Yunxinæ* sub-family can hardly boast a generally-admitted independence.

† All the 12 are ranged in regular series, without any sign of the anomalous disposition noticeable in the extreme laterals of all the *Picianæ*.

structure of their wings, which also assimilates them with several of the smaller species of Woodpeckers. Whether they ought to be ranged under the genus *Picumnus* of TEMMINCK, I have no means of ascertaining. I leave my proposed new genus or sub-genus to the discretion of the skilful, who have access to the libraries and museums of Europe.

PICIANÆ*.

Sub-genus *Picus*, SWAINSON. Species new. *Pyrrhotis*; crimson-eared, nobis.

Form. Bill two inches long, a third longer than the head: extremely powerful and hard throughout: at base higher than broad: the ridges sharp and straight: the sides strongly angulated: the tips perfectly wedged: great lateral angle of the maxilla extending centrally three-fourths to the tip, where it is taken up by a single cuneating angle: lower mandible not angulated like the upper in its body, but similarly so towards its cuneate point: nares and head as in *Sultaneus*, but the latter not crested: neck neither elongated nor slender; void of crest: tarsi sub-equal to the anteal outer toe, which is rather larger than, or equal to, the posteaal one: grasp rather oblique, the posteaal toes being directed obliquely outwards, but incapable of reversion to the front: talons powerful, but only sub-angulated beneath: wings medial, reaching to middle of tail, gradated and formed, as in *Sultaneus*: tail rather short, very moderately wedged; in structure similar to that of *Sultaneus*: orbits nude.

Color and size. Wings, lower back, and tail, dark cinnamoneous or chesnut red, transversely banded with black throughout: head, neck, and upper back, brown, merged more or less in dark vinous red; the forehead and chin paler, and greyish: the breast and body below, black brown, with narrow chesnut bars on the thigh and tail-coverts: behind each ear a brilliant crimson spot: bill, bright yellow: orbital skin, dusky green: iris, brown: legs, dark slaty, smeared with green or yellow: nails, dusky horn: sexes alike: 12 inches long by 18 wide; and 5 to 6 oz. in weight.

Remark. Though I have ranged this bird under SWAINSON's sub-genus *Picus*, the curious reader will observe that it does not wholly answer the definition of the group. It belongs, in fact, by its bill to *Picus*—by its feet to *Chrysoptilus*: and, strictly speaking, stands midway between the two sub-genera. The two exterior toes are, as nearly as may be, equal; but the bill is neither depressed nor are the great lateral angles of the maxilla unequal. My principal motive

* See the note on *Sultaneus* for the cause of this addendum.

in adding it to this paper is (as already stated) to afford an object of comparison with the kingly species which is first described under the oriental imperial style of *Sultaneus*.

And, now that I have exceeded the limits originally proposed, I may as well add the description of another species forming a complete link between the three and four-toed *Picianæ*.

Genus MALACOLOPHUS ?

Sub-genus ?

Species new. *Melanochrysos* ; golden and black Woodpecker, nobis.

Form. Bill $1\frac{1}{2}$ inches long, scarcely one-fifth longer than the head, at base as high as broad, neither compressed nor depressed ; ridge arcuated and acute, but not carinated ; great lateral angles obsolete ; tips faintly cuneated.

Nares, elliptic, void of corneous ledge above, more or less denuded of plumes. Wings medial, to middle of tail : 1st quill, sub-bastard ; 2nd, long ; 4, 5, and 6, sub-equal, and longest. Tail, medial, equally gradated throughout, straight, rather feeble ; tips of all its feathers pointed, or evanescently forked : tarsi, longer than the anteal outer toe, which is conspicuously larger than the posteaal : the inner, small but perfect, and furnished with a perfect nail : grasp not oblique : orbits nude : head with a full soft crest, more or less pointed at the occiput : neck simple*.

Color and size. Chin, throat, abdominal aspect of the neck and the breast, black : neck, posteaal, black : lores, cheeks and lateral aspect of neck, white : ears, black, in a broad stripe from the eyes : upper back and wings, golden yellow : shoulders, dusky : lower back, tail-coverts above, and tail, black : wings internally, the same : body below, white : cap, in the males, bright sanguine ; in the females, black, with white streaks : bill, slaty black : iris, brown : orbital skin, dusky green : legs, clearish green : talons, dusky : $11\frac{1}{2}$ to 12 inches by 18 : $4\frac{1}{2}$ ounces.

Remarks. This species in size, colors and characters, bears much resemblance to the *Picus Shorii* of GOULD's work, in which, however, the fourth digit is nailless and obsolete, the rump, crimson, and the neck and belly, as in our *Sultaneus*.

I have other species serving to unite the 3 and 4-toed Woodpeckers by an insensible gradation. These species are closely connected with the well known *Picus Viridis* and *Picus Canus* of Europe.

* The tips of the lesser quills offer no peculiarity of structure, either in this or the preceding species.

VI.—Indication of a new Genus of Insectorial Birds.

By B. H. HODGSON, Esq.

CONIROSTRES. LAMPROTOERNINÆ ? DENTIROSTRES, CRATEROPODINÆ ?
LEIOTRICHANÆ ?

Genus *CUTIA*, nobis.

In the suite of specimens of Nipalese birds forwarded by me, three years ago, to the Zoological Society of London, were three or four of the subject of the present article.

They were marked in the imperfect list obligingly returned to me, as a "new form nearly allied to *Pastor*." But, if *Pastor Roseus* be the type of that genus, I confess I cannot perceive much resemblance to our bird: and, if a strong arched compressed bill, united with gradated wings and very strong feet, be the marks of the *Crateropodinae*, to that sub-family, I conceive our bird should be referred, unless the sub-scansorial and *quasi-Parian* character of its feet do not rather affine it with the *Leiotrichanæ*. And, certainly, its wings, tail, and feet have no small resemblance to those of *Pteruthius*, though its bill be totally different and formed very much upon the *Timalian* model.

The true station of our bird can only be determined by a more accurate knowledge of its habits and economy, than I now possess, applied to better and fuller information than I have any means of here acquiring, respecting the *general* affinities and analogies of the *Insectores*.

What adds to my difficulty in attempting to class the bird according to the *Sturnine* relations suggested to me, is, that the so called *Pastor Trallii* (very abundant in *Nipal*) is, in my judgment, a typical *Oriole*, whilst the *Lamprotornis Spilopterus* (also common here) is not easily referable to TEMMINCK's genus *Lamprotornis*, and belongs, I shrewdly suspect, to the *Brachypodinae* of SWAINSON. Without further preface I shall now attempt to characterise our bird as the type of a new genus, but with the necessary prolixity resulting from hesitation as to its family and sub-family.

CUTIA, nobis.

Khatya (*quasi-pedatus*) of the Nipalese.

Bill, equal to the head, or less, at base as high as broad, arched and compressed throughout, strong, obtuse, and nearly or quite entire. Culmen considerably carinated between the nares, but not much produced among the soft and simple frontal plumes.

Tomia, erect, rather obtuse, and near to the palate. Nares, rather forward, implumose, large, the aperture broad-lunate, lateral, shaded above by a largish nude sub-arched scale. Gape, moderate and nearly

smooth. Plumage, soft, simple and discomposed. Wings and tail, short and firm. 5th alar quill usually longest; two first strongly, two next trivially, and both sub-equally, gradated up to the 5th. Tail, quadrate, firm, with very long coverts. Tarsi, sub-elevate, very strong, and nearly smooth. Anteal toes basally nect, the outer as far as the joint; lateral fores sub-equal; central not elongated; hind very large, sub-depressed, and exceeding either of the lateral fores. Nails compressed, large, strong, falcate and acute. Tongue, simple, sub-cartilaginous, with bifid tip. Type, *Cútia Nipalensis*, nobis. Nos. 254-5 of the specimens and drawings apud Zoological Society of London. In order to illustrate the affinities of our bird, I proceed to compare it with *Pastor Roseus* and with *Lamprotornis Spilopterus*.

In *Pastor Roseus*, as in all the typical *Pastors* in my possession, the bill is longer than the head, straight, conico-cylindric, and softish towards the base. Its base is angulated, and the plumes of its head carried forwards to the anteal end of the nares, are pointed, glossed and elongated. The ample and pointed wings have the 1st quill rudimentary, the 2nd long, and sub-equal to the 3rd, which is always the longest. The tarsi are considerably lengthened and heavily scaled. The toes have the laterals equal; the hind rather less, and the central fore considerably elongated. The outer fore toe has a basal connexion; the inner none. The nails, though large and by no means blunt, are neither curved nor acuminate in any special or significant degree. In *Lamprotornis Spilopterus* the wings are precisely similar to those of *Pastor Roseus*. The bill of *Lamprotornis*—which is scarcely longer than the head, uniformly sub-arched and not angulated—so far agrees with that of our *Cútia*. But its base is depressed, whilst forwards it has only a slight compression and sub-cylindric outline. It is, besides, sharply pointed, saliently notched, and its trenchant fine tomixæ are deeply interlocked.

Carry these peculiarities a little further and you have the bill of *Chloropsis*, the birds of which genus further agree with *Lamprotornis Spilopterus* almost entirely in the nature of their food, and the structure of their tongues and stomachs.

On the other hand, the harder, blunter, more solid and compressed bill of *Cútia*, united as it is with a simple tongue, a subtritulating stomach, and a diet consisting of hard seeds and hard insects, would affine our bird to *Pomatorhinus* and its allies, but for the scansorial feet. In *Lamprotornis Spilopterus* the nares are still round and short, though there be somewhat more approach to a nude, membranous tect than in *Pastor Roseus*. In *Lamprotornis*, the lower tarsi, rather than the structure of the feet, seem to indicate less terrestrial habits

than those of *Cútia* : for, in the former, the anteal digits are freer, and the lateral ones shorter in proportion to the central and to the hind one, than in the latter ; whilst the nails have rather less than more of the *Parian* attributes. Lastly, the pointed and burnished feathers on the head of *Lamprotornis Spilopterus* are wholly wanting in our bird. In *Spilopterus* they seem to intimate relationship with the *Stares*. Nor is the intimation unrequired by those who claim such fellowship for this bird, in as much as its habits and essential structure savour more contrast than similitude with the *Sturnidæ*.

As for our *Cútia*, amidst all its anomalies (so to speak, with reference to one's own ignorance) of structure, there is certainly something *Sturnine* in its aspect ; and by certain peculiarities of its feet and wings, as well as by its variegated plumage, it bears some resemblance to *Sturnella*, a genus "leading directly to the true *Starlings*."

Species new. *C. Nipalensis*, nobis ; Nipalese *Cútia*, nobis. Habitat, central and northern regions ; adheres to the forests, feeding on hard insects and on seeds. Gregarious and arboreal.

Color and size. Male, above, brilliant rusty yellow, with jet-black remiges and rectrices. Cap, and a large apert central portion of the wings slaty ; the former confined all round, by a black band proceeding through the eyes from the nares. Below, from chin to legs, pure white ; from legs inclusively to tail-coverts, flavescent : the flanks broadly cross-barred with black : a spot of the same hue at the base of the maxilla : most at the alar quills and the lateral tail feathers, tipped with white : lining of wings, and wings internally and basally, albescent : bill, above blackish, below plumbeous : legs orange yellow : iris, brown : 7 to $7\frac{1}{2}$ inches long by $10\frac{1}{2}$ to 11 wide : bill $\frac{1}{4}\frac{1}{8}$: tarsus $1\frac{3}{16}$: central toe $\frac{1}{16}$, hind $\frac{9}{16}$. The female is a trifle less in size. Her mantle is variegated by longitudinal black drops : and her cheek band is brown instead of black, especially on the ears.

VII.—*Nest of the Bengal Vulture, (Vultur Bengalensis ;) with observations on the power of scent ascribed to the Vulture tribe. By Lieutenant J. HUTTON.*

On the 8th December, 1833, I found four vultures' nests in a large *barkat* tree, near the village of *Futtehgurh*, on the road from *Nee-much* to *Mhow*. These nests were of great thickness, and were constructed of small branches and twigs, mixed with dead leaves ; three of them contained each one egg, of a large size, and quite white. The fourth nest was occupied by a solitary young one, just hatched, and

thinly clad, or rather sprinkled over with a short down of an ashy color. Near this tree were two others, on each of which were three or four similar nests, but as they were difficult of access, I did not ascertain their contents.

Deeming the little one too young to take from the nest, I ordered my servant, who had climbed the tree, to leave it there, intending to take it, if not flown, on my return from *Mhow*, whither I was then proceeding. On the 21st of the same month I returned to the spot, and finding the bird still in the nest, made a prize of it and bore it away to my tent. The old vultures offered not the slightest resistance, but sat stupidly watching the robbery we were committing.

On offering the young vulture raw meat, it fed greedily, and gave me reason to believe that it would be no difficult task to rear it, since it proved willing enough to feed.

I was much astonished to see the little progress it had made in growth and plumage, since I discovered it, a period of thirteen days, in which time most of the smaller birds would have been nearly ready to leave the nest; whilst my gluttonous friend had not even the smallest symptom of a feather. The whole bird was clothed with a light cinereous down, except on the neck, where it was partly bare, being in patches. The lore and round the eyes naked and livid; the eyes small and irides dark; cere and beak, black; legs and feet leaden black; claws black. It had no power to stand on its legs, owing to the great weight of the body.

After feeding, or when hungry, it emitted a fractious peevish cry, like a sleepy child.

I placed it in a basket with some straw to keep it warm, and thus took it to *Neemuch*.

When about three weeks old, the pale cinereous down with which it had at first been clothed, gave place to a down of a much darker color, the head alone retaining its first clothing. At a month old, or rather thirty-three days from the time I first discovered it, the prime and secondary quills, greater wing coverts, scapulars, tail feathers, and a few feathers on the upper part of the back near the neck, made their appearance, but their growth was extremely slow, being very little advanced four or five days after. The bird was still unable to stand, for, although his strength had increased, the weight and increase of bulk of the body still rendered his legs of no use. Once or twice on placing him on the ground, he swallowed several large stones, about the size of a sparrow's egg, and these I found voided three days afterwards in the basket which served him for a nest. In a week's time the prime

quills grew to an inch and a half long. The size of the body increased rapidly, and the bird supported itself on the knee joints, but could not yet stand at forty days old.

Its appetite became now no easy matter to satisfy, a pound of flesh at a meal being thought nothing of. At six weeks old the ruff round the neck was clearly discernible, and the quills of the wings were about three inches long. The top and hind part of the head began also to lose the soft thick down which had hitherto clothed it, and presented a naked bluish skin.

On the 20th January it stood upright for the first time, being about forty-three or forty-four days old.

At two months old, the back, shoulders, wings, lower part of the neck above, rump and tail were clothed with dark brown feathers, approaching to black; the thighs were still only clothed with down, as also the sides and belly. The ruff was thickly formed and composed of very narrow brown feathers; the breast partly clothed with narrow pendant feathers of a lighter brown and with the shaft whitish. Head closely covered with a fine soft woolly down of an ashy whiteness, which had again sprung up. Crop covered with pale brownish down. Legs greyish lead color.

It was now so tame, as to become a perfect nuisance; for no sooner did it see any person, than it ran towards them screaming and flapping its long wings, with the head bent low, and neck drawn in towards the body, often pecking at the feet of the person thus intercepted. Many were the thumps and kicks the luckless bird received from the servants, who most cordially detested him, as their bare feet were often assailed and cut with the sharp blows of his curved beak. Still, through good and evil, he remained with us, roosting at night sometimes on the top of my bungalow, and at other times wandering to some of the neighbors. Often did I wish that he would take unto himself the wings of the morn and flee away; for he never entered the house without making it so offensive as to be scarcely bearable. Yet, having brought the evil upon myself, I was bound to bear it with patience, and at length when I almost began to despair of ever getting rid of him, he deserted his usual haunts on the 10th May, being then five months old, and, I am happy to say, I saw him no more.

I once shot a pair of adult birds, male and female, which were sitting with many others of the same kind, seemingly half gorged, over the carcass of a dead cow;—the ball passed through the head of the female, into the neck of the male, and thus afforded me a good opportunity of examining them together.

The plumage of the male is dark brown above, deepest on the wings and tail ; under parts of a lighter shade of brown, the shaft and middle of each feather being dashed with a dirty white, or buff colored streak ;—head and neck of a dirty livid color, and destitute of feathers, but scattered over with short hairs ; at the bottom of the neck a ruff of long, narrow and pointed feathers ; the crop covered over with short brown feathers, and slightly overhanging the breast. Bill strong and black at the end, but paler at the base ; nostrils lateral ; irides dark hazel ; legs thick and blackish ; claws black and strong and not much hooked.

Length 2 feet $7\frac{1}{2}$ inches ; breadth 7 feet $5\frac{1}{2}$ inches.

The female in length was 3 feet 1 inch, and in breadth 7 feet $7\frac{1}{2}$ inches ;—the plumage above is much lighter, being of a buff or pale fawn-colored brown ; under parts of a dirty white ; irides dark hazel ; bill strong and dark at the end, but of a greenish livid color at the base ;—the claws are longer and more hooked than in the male.

The native name is *Giddh*.

This is the Bengal Vulture (*Vultur Bengalensis*) of authors ;—it is gregarious to the full extent of the word, not only flying and feeding in flocks, but also building its nests in company.

The male bird above described, rather exceeds the size given by LATHAM and Colonel SYKES.

In LOUDON'S Magazine of Natural History is a long dispute between Mr. WATERTON, the author of "Wanderings in South America," and AUDUBON, the American Ornithologist, respecting the remarkable powers of smell so long ascribed to the Vulture tribe. The latter gentleman, backed by several friends, maintains that sight alone conducts the Vulture to his prey, and he relates a number of experiments which he tried in *America* relative to this subject. Mr. WATERTON, on the other hand, ridicules these experiments, and brings forward much to invalidate them, and in favor of the old notion. It had perhaps, however, been better if these gentlemen had borne in mind the saying "*medio tutissimus ibis*," and allowed due weight to both these senses combined.

The view which either party takes of the subject, will be gathered best from Mr. WATERTON'S own words, which I transcribe from the 39th No. of the Magazine :—

"The American philosophers have signed a solemn certificate that they feel assured that the two species of vultures which inhabit the United States, are guided to their food altogether through their sense of sight and not that of smell :—I, (WATERTON) on the contrary, say

that all vultures can find their food through the medium of their olfactory nerves, though it be imperceptible to the eye."

This is said with reference to an article in No. 38 of the same Magazine, signed by several scientific men in *America*, stating it to be their opinion, "that they (the vultures) devour fresh as well as putrid food of any kind, and that they are guided to their food altogether through their sense of sight and not that of smell."

On this subject it appears to me that the parties, like the disputants in the fable of the Chamelion, "both are right and both are wrong," as I think may be shewn from the arguments on either side, and also from an experiment I made myself at *Neemuch*. Mr. WATERTON affirms that the vultures of the United States never feed on other than putrid carcasses, while his opponents declare that they feed alike on fresh and putrid substances.

Our Indian Vultures decidedly feed as readily on a recently deceased animal, as on a putrifying one, and I have repeatedly seen flocks of the Bengal vultures at *Neemuch* squabbling over the carcass of a camel or an ox, which had not been dead more than a few hours, and which was as yet perfectly fresh.

Sight alone in these cases guided them to their prey. The young bird above described was always fed with fresh raw meat.

This does not, however, by any means prove that the vulture is deficient in the powers of smelling carrion. The effluvium from any decomposing body, being, as Mr. WATERTON observes, lighter than common air, naturally rises on high, and a flock of vultures soaring above, and coming in contact with a tainted current, receive warning that a banquet awaits them on earth, causing them to search about in every direction for the desired object, in the same manner as a dog would do.

It often happens that an animal dies in some thick covert where the vultures cannot discover it, until the vapour arising from the decomposing body warns them that food is near, and excites them to a closer search. Thus, having caught the tainted current of air, the bird wheels round and round in decreasing circles as the scent grows stronger, until at length it alights on some tall tree near the spot, or perhaps on the ground, casting its piercing glances on all sides, in the hope of discovering the savoury morsel, which, if perceived, is instantly attacked "tooth and nail."

It may very possibly happen, however, that the vulture after having followed the attractive odour to the regions of earth, may yet be unable to discover the object from which it proceeds, and after having in vain endeavoured to bless his longing sight, and still more longing

appetite with the rich and tantalizing morsel, be compelled reluctantly to quit the perfumed spot.

Thus the faculties of sight and scent are both necessary to enable the vulture to discover its prey,—sometimes singly, as when it is fresh,—sometimes combined, as when it is decayed and hidden.

Thus I should pronounce the power of scent in these birds, although strongly developed, to be in aid of sight, and it may be deemed a secondary and auxiliary means of discovering food.

The following experiment I tried at *Neemuch*. A recently killed dog was encased in a coarse canvas bag, and hung up in a large *bar-kut* tree, so that no bird soaring above could possibly see it. On the morning after, I went to reconnoitre, and saw a number of vultures sitting on the upper branches of the tree, and on some of the neighboring ones, of which there might be about a dozen. These birds were not, however, attracted to the spot by any effluvium from the dog, as it was still quite fresh,—but they had resorted there to roost the evening before, and had not as yet aroused themselves from their lethargy.

On the fourth day I again repaired to the spot and found about twenty vultures sitting on the tree, all of them being on that side, directly over the body of the dog, which had now become very offensive ;—there were also several vultures soaring aloft in wide circles above the tree, one of them every now and then descending and alighting. Not one bird was to be seen on any of the neighboring trees,—nor on any part of the chosen tree, excepting that immediately over the carcass. That these birds were not roosting, is proved from the hour of the day being eleven ;—and besides on the morning that I saw them at roost, they were scattered over the whole top of the tree, which is an enormous *barkat* or *banyan* tree,—as well as on some of the adjoining ones, while on this forenoon they were confined to the tree, and also the one portion of the tree in which the putrid carcass of the dog was concealed.

I therefore conjecture that the smell of the decomposing body had mounted on high, and the vultures wheeling above had come in contact with the savoury vapour, soaring round in wide circles in hope of espying the object from which the scent that told of prey proceeded.

Seeing nothing below, but still smelling the putrid carcass, they had gradually narrowed their flight, until they alighted on the identical tree in which lay the hidden banquet. Thus I conclude that the powers of scent in these birds has been ascribed to them, in truth, and that it is this faculty which gives them *notice* of the prey awaiting them and induces them to search with keen and eager glances over

the earth, until the *eye* rests on the precise spot. It is therefore their acute faculty of scent, combined with their keenness of vision, which directs the vulture tribe to their prey.

Thus I think I have shewn that the three points in dispute, respecting the vultures of the United States are not applicable either to the Indian or Bengal vultures*, both of which are gregarious, both feed on fresh as well as putrid substances, and both discover their prey by the *combined* faculties of scent and sight.

VIII.—*Notes taken at the post-mortem examination of a Musk Deer.*
By A. CAMPBELL, Esq., Nipál Residency, June 24, 1834.

[Addressed to J. T. PEARSON, Esq., Curator, Asiatic Society.]

I have the pleasure to send you, for the museum of the Asiatic Society, a very perfect skin (head and feet included) of the Thibetan Musk Deer, as well as of the *Wah* of the Bhotiahs, *Ailurus Fulgens* of the zoologists, and hope they may reach you in the same perfect state they are now in. The musk has been a full grown male, and a large one too. The natives of Nipál make a marked distinction between the *Trans-Himálayan* animal, and the *Cacharya* one, or that which inhabits the country along the foot of the snows on this side of the great snowy mountains; ranking the musk of the former much higher than that of the latter variety. The specimen now sent is of the *Trans-Himálayan* animal. The notes appended are of the *Cis-Himálayan* one. Through the kindness of Mr. HODGSON, I have had opportunities of examining specimens of both animals, but without observing any important difference between them. The musk pod of the Thibetan animal is covered with short close hair, while that of the *Cachar* one is clothed with very long hair, and hangs more loosely from the belly. I believe the musk of both, when unadulterated, to be much alike, and that the superficial value attached to the Thibetan animals' produce, arises from the circumstance of its being less frequently impregnated with foreign substances, for the purpose of increasing its weight and bulk, than the *Cachar* article. The pods, as they are found in the market, whether *Thibetan* or *Cacharya*, vary a good deal in appearance, and hence the general division of them above noted is subdivided: the thinner skinned ones being called *Kághazí*, or papery, the thicker skinned ones *Ganauta*.

* Indian Vulture, *Vultur Indicus*.—Bengal Vulture, *Vultur Bengalensis*. Of the habits of the Pondicherry Vulture (*V. Ponticerianus*) I know little. They are generally seen singly or in pairs,—never I believe in flocks. (?) Do they in the East, hold the place and habits of the king of the Vultures of the West?

You will readily observe that the anatomical notes are very incomplete, and that they have been copied "*in the rough*" as made at the dissection; but their accuracy, and the interesting nature of the animal they appertain to, may nevertheless render them acceptable to the curious in such matters.

A musk deer (*Cacharya*) male, mature.—Length from vent to occiput 2 feet $2\frac{1}{2}$ inches: occiput to snout 7 inches: tail a mere rudiment, $1\frac{1}{2}$ inch long, terminating in a tuft of hair like a shaving brush. The anus surrounded by a ring of soft hairs, the skin under which is perforated by innumerable small pores secreting an abominably offensive stuff; pressure brings out the stuff liquid, like melted honey. Scrotum round, and naked; space between it and anus naked, also for a small space towards the groins. Penis $3\frac{1}{4}$ inches long, terminating in the musk bag, which is in this animal globular, a little flattened on the surface towards the ground— $1\frac{1}{2}$ inch in diameter either way, and thickly covered with long hairs; it is pendent from the belly, not like the *Bhotiah* musk deer examined last year, in which it was bound up to the abdominal parietes. At the centre of the musk bag is a circular hole, large enough to admit a lead pencil; its edges are naked and moist. At the posterior margin of this hole is the orifice of the penis. The penis is, in fact, terminated by the musk bag, which might be called correctly the preputial bag. The bag is composed of two distinct membranes, apparently unconnected with one another, except at the margin of the circular external hole. The external membrane is vascular and strong, the internal one is silvery, shining, and not vascular: it resembles the retina of the eye, as it is seen on dissecting the eye from without. The inner membrane which forms the cavity of the bag is lined internally with a few scattered hairs. The musk is soft, of a reddish brown color, and granular: its appearance and consistence is precisely that of moist ginger-bread. Around the margin of the hole of the bag is a circle of small glandular-looking bodies, more numerous towards the side of the penis, (the posterior margin.) The flesh of the animal is dark red, and *not of musky smell*. Bladder very large, 6 inches long, $2\frac{1}{2}$ broad. The liver flat, one lobe only, with a cleft in its margin at the attachment of the central ligament. Length of liver from left to right $6\frac{1}{2}$ inches, from anterior to inferior aspect $3\frac{1}{2}$ inches thick: at its extreme right one inch, at its extreme left half an inch. Gall-bladder oval-shaped, pendulous from right half of liver, three inches long, $2\frac{1}{2}$ in diameter. The gall duct penetrates the intestine $2\frac{1}{2}$ inches from the pylorus of last or fourth stomach. Spleen thin, four inches long, $2\frac{1}{2}$ broad. Kidneys unilobed, not sul-

cated on their surface, $1\frac{1}{2}$ inch long, one inch broad. Stomachs four, in all respects ruminant. The large bag, or first stomach, mean length 8 inches, breadth 6 inches. Entire length of intestines 40 feet. From the pylorus to cæcum 28 feet, from cæcum to vent 12 feet. One cæcum 13 inches long, and 2 inches in diameter. The small intestines, which are round and thread-like, as well as the larger ones, are very thin coated; average diameter of large ones near the rectum 2 inches. Right lung the larger, three-lobed; left lung three-lobed also, a small centre lobe of which lies below the apex of the heart. Heart 3 inches long, 2 in diameter.

Another Musk Deer, May 28, 1835.

No branches from the arch of the aorta. The ascending aorta one inch from the arch, gives off, *first*, a common trunk, immediately divided into the left subclavian and left vertebral—*second*, $2\frac{1}{2}$ inches higher: it (the aorta) divides into two branches; viz. the right cephalic, and the common trunk of the right subclavian and right vertebral.

The os hyoides is formed of a small centre body and two horns, each of the two pieces having a posteriorly directed process for insertion into the head of the thyroid cartilage. The cornua are articulated with a small process of the temporal bone below the meatus auditorius. The larynx one inch long. The trachea to the first branch given off, (which is on the right side) eight inches long: one inch further on it divides at once into four branches, the first branch goes to the highest of the four lobes of the right lung. The cartilaginous rings of the trachea incomplete behind.

Dimensions of the "Wah" of the Bhotiahs.

Ailurus Fulgens, or male, mature.

From snout to tip of tail, $37\frac{1}{4}$ inches.

From the sole of fore foot to superior crest of scapula, $9\frac{1}{2}$ ins.

From foramen magnum to snout, taken with callipers, $5\frac{1}{4}$ inches.

Length of tail 6 inches.

From first cervical vertebra, to first vertebra of the tail, $16\frac{3}{4}$ inches.

Greatest circumference of head round the angle of the jaw, 10 ins.

Length of humerus, 5 inches.

Length of fore-arm, $4\frac{1}{2}$ inches.

From wrist to tip of middle finger, $2\frac{3}{4}$ inches.

Length of femur, $4\frac{1}{2}$ inches.

Length of tibia, and fibula, $5\frac{1}{2}$ inches.

From heel to tip of middle toe, $4\frac{1}{2}$ inches.

Girth round lower part of thorax, 12 inches.

From anterior edge of the orbit to tip of snout, $1\frac{1}{2}$ inches.

From external opening of the ear to the tip of the nose, $3\frac{1}{4}$ ins.

IX.—*Some account of the Wars between Burmah and China, together with the journals and routes of three different Embassies sent to Peking by the King of Ava ; taken from Burmese documents. By Lieutenant-Colonel H. BURNEY, Resident in Ava.*

The chronicles of the kings of *Prome*, *Pagan*, and *Ava*, which are comprised in 38 volumes, and brought down to the year 1823, contain accounts of several disputes and wars between those sovereigns and the emperors of *China*. *Tagaung*, the original seat of empire on the *Eráwadí*, is said to have been destroyed by the Tartars and Chinese before the birth of Christ. In the reign of PHYU'-ZÔ-DÍ', the third king of *Pagan*, who reigned between A. D. 166 and 241, the Chinese are said to have invaded his kingdom with an immense army, over which that king obtained a great victory at a place called *Kô-thām-bí* ; but neither the date nor the cause of this war is given. The 42nd king of *Pagan*, ANÔRA-THÁ MENG:-ZÔ, who reigned between A. D. 1017 and 1059, invaded *China*,—in what year is not mentioned,—for the purpose of obtaining possession of one of GAUDAMA'S teeth ; which is said, however, to have refused to quit *China*. This king had a meeting with the emperor of *China*, and the two sovereigns lived together for three months, but at what place is not mentioned. During ANÔRA-THÁ-ZÔ'S residence in *China*, the emperor daily supplied him with food dressed in various gold and silver vessels, which, on the departure of the king, he is said to have delivered to the emperor of *China*'s religious teacher, with directions to dress food in them daily, and make offerings of it to GAUDAMA'S tooth. This proceeding induced many succeeding emperors of *China* to demand the presentation of the same kind of vessels from the kings of *Pagan* and *Ava*, as tokens of their tributary subjection to *China*. In the year 1281, during the reign of NARA-THI-HA-PADÉ', the 52nd king of *Pagan*, the emperor of *China* sent a mission to demand such gold and silver vessels as tribute ; but the king having put to death the whole of the mission, a powerful Chinese army invaded the kingdom of *Pagan*, took the capital in 1284, and followed the king, who had fled to *Bassein*, as far as a place on the *Eráwadí* below *Prome* called *Taroup-mó*, or Chinese point, which is still to be seen. The Chinese army was then obliged to retire in consequence of a want of supplies ; but in the year 1300, KYÔ-ZUÁ, the son of the above-mentioned king of *Pagan*, having been treacherously delivered by his queen into the hands of three noblemen, brothers, who resided at *Myen-zain*, a town lying to the southward of *Ava*, and who forced the king to become a priest and assumed the sovereignty themselves, another Chinese

army came down and invested *Myen-zain*, for the purpose of assisting and re-establishing the king *Kyô-zuá*. The rebel nobles applied for advice to a priest, who recommended them, apparently as a taunt, to consult tumblers and rope-dancers. Some of that profession were, however, sent for, and they, whilst exhibiting their feats before the three nobles, repeated as customary words of no meaning, a sentence like the following: "There can be no dispute when no matter for dispute remains." The nobles seized upon these words, and applying them to their own case, observed, If king *Kyô-zuá* is killed, the royal line, which the Chinese have come to restore, will be extinct. Accordingly, they cut off the king's head and showed it to the Chinese, who then proposed to retire, if the nobles would send some presents to their emperor. The nobles agreed, but upon condition that the Chinese army should first dig a canal; and the Chinese generals, to shew the immense numbers of their army, dug in one day, between sunrise and sunset, a canal 4900 cubits long, 14 broad and 14 deep, which canal near *Myen-zain* is still in existence*. The Burmese chronicles further state, that the little pieces of skin, which the spades and other instruments the Chinese used when digging this canal had peeled off their hands and feet, being afterwards collected, were found to measure ten baskets full, well pressed down! In the reign of king *Kyô-zuá*, the nine Shan towns on the frontiers of *China*, *Maing-mó*, *Hô-thá*, *La-tha*, &c. are said to have been separated from the empire of *Pagan*.

In the year 1412, during the reign of *MEN:-GAUNG*, the first king of *Ava*, the Shan chief of *Thein-ní*, whose father had been defeated and killed that year when marching with a force to attack *Ava*, invited the Chinese to come and aid him against the Burmese, whilst they were besieging the city of *Thein-ní*. The king of *Ava's* son, who commanded the Burmese army, hearing of the approach of the Chinese, advanced and lay in wait for them in a wood, from which, as soon as the Chinese came up, the Burmese sallied forth and attacked them, and destroyed nearly the whole of their army. In the following year, during the same king of *Ava's* reign, and whilst almost the whole of the Burmese army were absent engaged in a war with the *Talains* in lower *Pegu*, another Chinese army entered the kingdom of *Ava*, and actually invested the capital, demanding the liberation of the families of two Shan chiefs, the lords or governors of *Maun-toun* and *Mó-kay*. These chiefs having committed some aggression near *Myedu*, a town in the king of *Ava's* dominions,

* It is called *Theng-dué-myaung*, and communicates with the *Zó* river, and is used for the irrigation of paddy lands.

a Burmese army had gone and attacked and defeated them. They had escaped into *China*, but their families had been captured and brought to *Ava*. The king of *Ava* refused to surrender the families of the chiefs, and the Chinese general, after besieging *Ava* for a month, found his army so much distressed from want of provisions, that he was induced to send in to the king a proposition, to have the dispute between the two nations decided by single combat between two horsemen, one to be selected on either side. The king agreed, and selected as his champion a Talain prisoner named *THA-MEIN-PARAN*. The combat took place outside of *Ava* in view of the Chinese army and of the inhabitants of *Ava* who lined its walls. The Talain killed the Chinese, and, decapitating him, carried the head to the king. The Chinese army then raised the siege, and retreated into *China*, without the families of the Shan chiefs.

In the year 1442, during the reign of *BHUREN-NARAPADI*, also called *DU-PA-YÖUN-DAY-AKA*, king of *Ava*, the Chinese again sent a mission to demand vessels of gold and silver, which they declared *ANÔRA-T'HÁ-ZÔ*, king of *Pagan*, had presented as tribute. On the king refusing, the Chinese again invaded the kingdom in the year 1443, and now demanded, that *THÓ-NGAN-BUÁ*, the Shan chief of *Mô-gaung*, should be surrendered to them. This person, together with an extensive kingdom belonging to him, had been conquered by the Burmese in 1442, and the Chinese, who styled him the chief of *Maing:-mô*, apparently from the circumstance of a territory of that name on the *Shue-li* river having been comprised within his dominions, are stated to have been at war with him for several years, when the Burmese conquered him. The king of *Ava* advanced with a strong force above *Ava* to oppose the Chinese, and drove them back to *Mô:-wún**. The Chinese again invaded *Ava* in the year 1445, and the king again proceeded up the *Eráwadi* to oppose them with a large force; but before the two armies met, some of the Burmese officers persuaded their king, that as the Chinese would never desist invading his dominions until *THÓ-NGAN-BUÁ* was surrendered to them, it would be better to comply with their wishes. The king then returned to *Ava* with his army, and on the Chinese following and investing the city, he agreed to surrender *THÓ-NGAN-BUÁ*, but upon condition that the Chinese army should first go and bring under subjection *Ya-mè-theng*, a town lying to the southward of *Ava*, which was then in a state of rebellion. The Chinese consented, and after taking *Ya-mè-theng* and delivering it over to a Burmese force which had accompanied them, they returned to *Ava*, when *THÓ-NGAN-BUÁ*

* Chinese, *Long-tchuen*.

killed himself by poison. The king, however, sent his body to the Chinese, who are said, after embowelling it and putting a spit through it and roasting it dry, to have taken it with them to *China*.

In the same king of *Ava's* reign, in the year 1449, the Chinese made an unsuccessful attempt to take possession of *Mō-gaung* and *Mō-nhyín*, which were at that time considered as portions of the Burmese Empire, and the king is said to have made a very handsome present in silver to the then Tsô:-BWAH of *Mō-gaung* named THÓ-KYEIN-BUÁ, and his younger brother THÓ-POUT-BUÁ, for defeating the Chinese invading army.

In the year 1477, in the reign of MAHÁ-THI'-HA-THU'-YA, king of *Ava*, a Talain champion who had lately received the title of THAMEIN-PARAN, offered, if his master the king of *Pegu* would entrust him with 40,000 men and a favorite elephant, to march beyond *Ava* to *Khan-tí* on the frontiers of *China*, and there set up an iron post as the boundary of the Talain empire. The king of *Pegu* acquiesced, and THAMEIN-PARAN succeeded in reaching *Khan-tí* and marking the boundary; but on his return towards *Pegu*, he was attacked near *Ya-nù-theng* by a Burmese force, defeated and taken prisoner to *Ava*. The emperor of *China*, as soon as he heard of THAMEIN-PARAN's proceeding, sent a force to remove the boundary mark, and the Chinese general, after effecting this object, sent a mission to the king of *Ava*, to demand gold and silver cooking vessels as before. The king refused, but agreed, on a proposition again made by the Chinese, that the right of *China* to those tributary tokens should be decided by a single combat between two horsemen, one to be selected by either nation. The king accordingly selected as his champion the Talain prisoner, THAMEIN-PARAN, who defeated the Chinese champion, and the Chinese army again retreated to *China*. A strong suspicion as to the veracity of the Burmese historian will be excited, when it is known that not only this dispute also between *China* and *Ava* was decided by single combat, but the name and description of the Burmese champion were the same on this occasion as in that before related, in the annals of the king MEN:-GAUNG the first.

In the year 1562, TSHEN-BYU'-MYÁ-YEN, (lord of many white elephants,) the great king of *Pegu*, after conquering *Ava*, *Mō-gaung*, *Zenmay*, *Thein-ní*, &c. sent a large army to the frontiers of *China*, and took possession of the nine Shan towns (*Kó-Shan-pyì* or *Kó-pyí-daung*), *Maing-mó**, *Tsi-guen*, *Hó-thá*, *Lá-thá*, *Mó-ná*, *Tsan-dá*, *Mó-wun*,

* The Shans, who use the Burmese character, write *Maing*, but pronounce the combination *Múng*, which is their term for a town and province. The Burmese, hence, derive the words which they apply to Shan towns, *Main*, *Maing*, and *Mo*.

Kaing-mah; and *Maing:-Lyín* or *Maing:-Lyì*, all of which, with the exception of *Kaing-mah*, are now, and apparently were at that time, under the dominion of *China*. The chief of *Mó:-meit*, then subject to *Pegu*, had complained, that the inhabitants of those nine Shan towns had committed some aggression on his territory, and the emperor of *China*, it is said, declined to assist those towns when attacked by the king of *Pegu's* army, because they had been once subject to the kings of *Pagan*. The *Pegu* army, after conquering the country, built monasteries and pagodas, and established the Buddhist religion there in its purity.

In the year 1601, *NYAUNG MEN:-DARA'H*, king of *Ava*, after re-building the city, and re-establishing the kingdom of *Ava*, which the Peguers had destroyed, proceeded with a large force against the *Tsô:-buah* of *Ba-mó**, who had taken advantage of the downfall of the extensive *Pegu* empire left by *TSHEN-BYU'-MYÁ-YEN*, and set himself up as an independent chief. On the approach of the king, the chief of *Ba-mó* called *THÓ-TSEIN*, fled to *Yunan*, and the king after taking *Ba-mó*, advanced beyond *Maing-Tein*, and sent his son, the heir apparent, close to *Yunan* with a message to the Chinese governor, threatening to attack him if he refused to surrender the fugitive chief. The governor made a reference to the emperor of *China*, who directed the chief to be surrendered, observing, that he was a subject of *Ava*, and that if the Chinese protected him their territory would be disquieted. The chief of *Ba-mó* was killed in an attempt to make his escape, but his corpse with his wife and children was sent to the prince of *Ava* by the governor of *Yunan*, and taken to the king, who appointed another *Tsô:-buah* of *Ba-mó*, and returned to *Ava*. Some Burmese historians state, that the fugitive chief of *Ba-mó* took poison and killed himself; but the account above given is taken from the edition of the Royal Chronicles, revised under the orders of the present king of *Ava*.

In the year 1658, during the reign of *MENG:-YE'-YANDA-MEIT*, also called *NGA-DAT-DAYAKA*, king of *Ava*, *YOUN-LHI'* (*Du Halde's YONG-LIK*), who had been set up as emperor in the southern provinces of *China*, having been attacked by the Tartars from the north, came down to *Mó:-myín* (Chinese *Theng-ye-chow*), and sent a message to the *Tsô:-buah* of *Ba-mó*, saying that he would reside at *Ba-mó* and present 100 *viss*† of gold to the king of *Ava*. The *Tsô:-buah* replied,

* The Burmese write this name *Ban-mó*, although they pronounce it *Ba-mó*. *Bán* in the Siamese and *Yún* Shan languages, and *Mán* in most of the other Shan dialects, means a village. Some of the Shans call this place *Man-mó*, and others *Kat-mái*.

† A *viss* is a Burmese weight equal to about 3½ English pounds.

that he dare not forward such a message to *Ava*, and YOUN-LHI' then offered to become a subject of the king of *Ava*. The Tsô:-buah made a reference to *Ava*, and the king ordered him to allow YOUN-LHI' and his followers to come in, upon condition that they relinquished their arms, and to forward them to *Ava*. YOUN-LHI' then came in with upwards of sixty of his nobles, including the governor of *Maing-Tshù* or *Yunan*, and 600 horsemen, and the whole were forwarded to *Ava*, and a spot of ground in the opposite town of *Tsagain* was allotted to them. The Burmese chronicles, however, create an impression, that YOUN-LHI' desired to carve out a new kingdom for himself in *Burmah*,—and state, that before coming into *Ba-mó*, he ordered a large army which was still under his orders, to march after him towards *Ava* by two different routes, one portion by *Mó:-meit*, and the other by *Thein-ní* and *Mó-né**. Shortly after YOUN-LHI' reached *Ava*, accounts were received that a large force belonging to him was attacking the Burmese territory near *Mó:-meit*, and when questioned by the Burmese, YOUN-LHI' said, that his generals were not aware of his having become a subject of the king of *Ava*, but that he would write a letter, by showing which the Chinese generals would desist. The king of *Ava*, however, preferred marching a force against the Chinese, who defeated it, as also a second force, and then came down and attacked the city of *Ava*. Some of the exterior fortifications were carried, and the Chinese penetrated to the southward, set fire to the monasteries and houses, and desolated a large tract of country in that direction. They then returned to the assault of the city, but were repulsed with much loss; and a heavy fire being kept up against them from the guns on the walls, which were served by a foreigner named MI-THARI' KATAN (Mr. COTTON?) and a party of native Christians, a shot killed a man of rank among the Chinese, who then retreated from before *Ava*, and proceeded towards *Mó:-né* and joined the other portion of YOUN-LHI's army, which had been ordered to march down by *Thein-ní* and *Mó-né*. The king then repaired the fortifications of *Ava*, and summoned to his assistance his two brothers, the chiefs of *Taung-ngú* and *Prome*. The Chinese army when united again advanced from *Mó-né*, and succeeded, notwithstanding many attempts made by the Burmese to stop and check

* In the account of the journey of certain Chinese from *Siam* to *China* by land, given in the 1st vol. of DU HALDE, it is stated, that when the Tartars made themselves masters of *China*, "a great number of Chinese fugitives from the province of *Yunan* dispossessed their neighbours of their land, and settled there themselves, and the inhabitants of *Kamarett* (a Shan town on the frontiers of *China*) were forced to abandon their city."

them, in again investing *Ava*, which they besieged for several months. The families and property of many of the Burmese troops being outside of the city, were seized by the Chinese and maltreated or destroyed; and this circumstance, joined to a great scarcity of provisions, created much sorrow and suffering among the besieged. The troops had neither rice nor money to purchase it, and on applying to the king, he observed that they had received their grants of paddy land for their services, and that he had no rice to give them; at the same time he stationed some of his women at the palace-gate with rice for sale. The commanders of the troops at last complained against the king to his younger brother, the prince of *Prome*, who, in the month of May 1661, entered the palace, seized the king and his family, and assumed the sovereignty with the title of "*Meng-yé-gyó-gaung*." The dethroned king and his family were, shortly after, sent to the *Khyen-duen* river and drowned, and hence he is also styled in history *Ye-gyá-meng*, or the king thrown into the water. As soon as *MENG-YE'-GYÔ-GAUNG* took the reins of government, the affairs of the Burmese began to prosper. He succeeded in several successive attacks on the Chinese besieging force in different directions, and at last, as the Chinese suffered severely from these attacks and from an epidemic disease, they, one night in the month of November, 1661, evacuated their entrenchments before *Ava* and fled, leaving most of their baggage and property.

Shortly after, the king of *Ava* was advised not to allow *YOUN-LHI'* and all his Chinese followers to reside together at *Tsagain*, but to make the latter take the oath of allegiance and then disperse them in different parts of the country. The king ordered all the Chinese, with the exception of *YOUN-LHI'* and the governor of *Yunan*, to be sworn; but when the Burmese officers summoned the Chinese to attend at the pagoda where the oath was to be administered, they refused to come unless the governor of *Yunan* accompanied them. He was accordingly invited also, and on coming to the pagoda and seeing many Burmese troops in attendance, he imagined that it was their intention to put the Chinese to death. He and several of the Chinese suddenly snatched the swords out of the hands of some of the soldiers and attacked them, killing many of the Burmese; who, however, at last mounted the enclosure walls of the pagoda, and fired down upon the Chinese, until many of them were killed and the remainder submitted. But as soon as the king of *Ava* heard of this affair, he ordered the whole of the Chinese, with the exception of *YOUN-LHI'*, to be put to death.

In the month of December, 1661, the Tartars marched down a force

of 20,000 men, under AIN-THI'-WENG, the governor of *Yunan*, which took post at *Aung-peng-lay*, and sent a mission to the king of *Ava*, demanding YOUN-LHI', and threatening, on refusal, to attack *Ava*. The king summoned a council of his officers, and observing that in the reign of king DU-PA-YÖUN-DAYAKA, THÓ-NGÁN-BUÁ had been surrendered to the Chinese, and in the reign of king NGA-DAT-DAYAKA they had been made to surrender the Tsô:-buáh of *Ba-mó* to the Burmese, gave it as his opinion, that these two precedents would justify his now delivering YOUN-LHI' to the Tartars. One of the Burmese officers expressed his entire concurrence in his Majesty's opinion; adding, that the Tartars were very powerful, and that the Burmese troops and inhabitants were suffering much from their war with the Chinese. YOUN-LHI' with his sons and grandsons were accordingly, on the 15th January, 1662, forwarded to the Tartar camp, and delivered over to the Tartar general. He, however, sent another mission to demand the person of the Chinese governor of *Yunan*, but the king of *Ava* having replied, that he had executed that governor for ingratitude and treachery, the Tartar camp broke up on the 22nd January and returned to *China*. The mutual surrender of fugitives of every description is now an established principle in the relations between the two kingdoms, and the Chinese are said to enclose carefully in a large cage and forward to *Ava*, any Burmese fugitives required by the king of *Ava*.

For a full century after YOUN-LHI' was surrendered, the Chinese and Burmese appear to have continued in peace, but at last, in the year 1765, in the reign of TSHEN-BYU'-YEN*, king of *Ava*, the second son of ALOM-PRA, another war broke out between the two nations; and as this war is the last which has occurred between them, and is often referred to by the Burmese with pride and exultation, and as its details are recorded with some minuteness, and are really calculated to give European nations a more favorable opinion of Burmese courage and military skill, I shall endeavour to make a free translation of the account of it, which is contained in the 29th and 30th volumes of the *Chronicles of the kings of Ava*.

The causes of that war are said to have been these: a Chinese named LÔLI' came to *Ba-mó* and *Kaung-toán*, with 3 or 400 oxen laden with silk and other merchandize, and applied to the *Ba-mó* authorities for permission to construct a bridge to the north of the village of *Nánbá*, in order to enable him to cross the *Tápeng* river. The *Ba-mó* officers observed, that they must submit the application to the ministers at *Ava*; and LÔLI' considering this answer as equivalent

* Lord of the white elephant, and SYMES'S Shem-buan.

to a refusal, was impertinent and disrespectful. The *Ba-mó* officers suspecting from *Lôli*'s manner, language, and appearance, that he was not a common merchant, but some Chinese officer of rank, seized and sent him to *Ava* with a report of his conduct. He was confined at *Ava* in the usual manner; but after a full inquiry and examination, nothing of political importance transpiring, he was sent back to *Ba-mó*, with orders that he should be allowed to trade as usual, and that if he really wished to construct a bridge, which however appeared to the ministers to be only an idle boast on his part, he should be permitted to do so wherever he pleased. On his return to *Ba-mó*, he declared that some of his goods which had been detained there when he was sent to *Ava*, were missing or destroyed, and insisted upon compensation. The *Ba-mó* officers replied, that when he proceeded to *Ava* he took only five or six of his men, leaving all the rest in charge of his goods, and that if there really was any deficiency, he must look for it among his own people, and not among the Burmese. *Lôli* left *Ba-mó* much dissatisfied, and on his arrival at *Mó-mýn*, he complained to the Chinese governor there, that Chinese traders were ill treated by the *Ba-mó* officers, who had also sought pretences for accusing him and destroying his merchandise.—He then went to *Maing-Tshñ*, and preferred the same complaint to the *Tsöuntú*, or governor general, there. The *Tsöuntú* observed, that he would wait a little and see if any thing else occurred, to prove the truth of *Lôli*'s statement, that Chinese were ill used in the Burmese dominions, and not permitted to trade according to established custom. About the same time, an affray took place between some Burmese and a Chinese caravan of upwards of 2000 ponies with one *Lôta'ri* as their chief, which had come to *Kyáing-toñ* and put up to the north of that town at the great bazar of *Kat-thwáh*. The Burmese had bought some goods on credit, and refused payment when demanded by the Chinese. In this affray a Chinese was killed, and the *Tsô:buáh* being absent at *Ava* at the time, *Lôta'ri* applied to the subordinate Burmese officers for justice, according to Chinese custom. These officers decided, that the man who had committed the murder should, agreeably to Burmese custom, pay the price of a life,—namely, 300 ticals. *Lôta'ri* refused money, and insisted upon the man being delivered over to the Chinese; but the Burmese officers replied that such was not their law, and then proposed that the man who had committed the murder should be put to death. *Lôta'ri* declared that this would not satisfy them, and returned to *China* with some of the principal traders, and complained to the *Tsöuntú* of *Yunan**. That officer being urged, at the same time,

* Within the last six years two cases of accidental homicide occurred at *Ava*,

by the ex-Tsô:buáh's of *Ba-mó*, *Theinni*, *Kyaíng-toŭn* and other subjects of *Ava*, who had taken refuge in *China*, to invade the Burmese dominions, made such a report of the abovementioned circumstances to the emperor of *China*, as to induce his majesty to order an army to march and take possession of *Kyaíng-toŭn*. The Tsóuntú put up a writing on the bank of the *Táló* river containing these words: "Deliver a man to us in the room of our man who was killed, or we will attack you;" and shortly after, a Chinese army under a general named YI'N-TÁ-LÔ YE', consisting of 50,000 foot and 10,000 horse, advanced and invested *Kyaíng-toŭn*. The Tsô:buáh of *Kyaíng-toŭn* at the same time revolted and joined the Chinese.

On TSHEN-BYU'-YEN, the king of *Ava*, hearing of this invasion, he dispatched, on the 28th of December, 1765, eleven divisions of troops, consisting of 20,000 foot, 200 war elephants, and 2,000 horse, under general LET-WE'-WENG-DÔ-MHU' NE-MYÓ-TSI'-THU', to relieve *Kyaíng-toŭn*. The Burmese general, on approaching that place, contrived to send in some men in disguise, and arrange a combined attack on the Chinese besieging force. Their cavalry, which was numerous, was charged by the Burmese with elephants, and the Chinese being defeated, retired to the bank of the *Táló* river, where they took post behind some mud-works which they threw up. The Burmese general again attacked them and drove them to the bank of the *Mé-khaung* or great *Cambodia* river, where the Chinese army again took post; but they were attacked here also, their general YI'N-TÁ-LÔ-YE' killed, and their army driven back to *China* with much loss, and in great disorder. The Burmese army then returned to *Ava*, where they arrived on the 8th April, 1766. THÍ'N-WÍ'-BUÁH and DÔ-BAYÁ, the Tsô:buáhs of *Kyaíng-toŭn* and *Lú-ta-tshay-nhít-paná* sent excuses, stating that they had been forced to join the Chinese; but the king of *Ava* disbelieved them.

In January, 1767, intelligence was received by the king of *Ava* that another Chinese army, consisting of 250,000 foot and 25,000 horse, had entered the Burmese dominions, and that on their arrival on or near *Shyá-mue-loŭn* mountain, to the westward of the *Mé-khaung*

of a Burmese killing a Chinaman; and on both occasions, the Chinese residents successfully used their influence with the Burmese prince, MEN-THA-GYI'H, to have the Burmese executed. Nothing would satisfy the Chinese but the death of the individuals who had slain their countrymen.

* The *Let-wé-weng-dô-mhú* is the officer in command of the northern entrance to the palace. The words mean literally, "left-hand royal entrance chief," and the *dô*, or royal, is often omitted. This is SYMES's *Ledougmee*, and "the governor of the north gate" of some of our officers.

river, a part of the army, consisting of 150,000 foot and 15,000 horse, under general YI'N-TSU'-TÁ-YENG, was detached by the route of *Nuay-leít* near *Mó-wún* against *Bamó*. His Majesty had before, anticipating the return of the Chinese, ordered *Kaung-toñ* to be reinforced and filled with provisions, so as to enable it to hold out under its governor BALA-MEN-DEN, and now directed that two armies should proceed from *Ava*, one by water up the *Eráwadi* to *Ba-mó* under the LET-WE'-WENG-MHU', and the other by the land route to the westward of that river, under the Wún-gyíh MAHÁ-TSI'-THU', who should be joined by all the force he might find at *Mō-gaung*, *Mó-nhyen* and other towns in that neighbourhood, and then march by the *Tsandá* (*Sánta**) route, and attack the Chinese. On the 30th January, 1768, the Wún-gyíh marched with 22 divisions, consisting of 20,000 foot, 2,000 horse, and 200 war elephants; and on the 4th February, the water force, under the LET-WE'-WENG-DÔ-MHU', consisting of 11 divisions, 15,000 men, and with 300 boats carrying guns and jinjals, proceeded up the *Eráwadi* towards *Ba-mó*.

From *Shyá-mue-loñn* mountain another portion of the Chinese army, consisting of 10,000 horse and 100,000 foot, under general TSHENG-TÁ-LÔ-YE' marched by the *Tsandá* route against *Mō-gaung*. A body of 5,000 horse and 50,000 foot also took post on *Thínzá-nuay-lein* mountain, whilst the force under general YI'N-TSU'-TÁ-YENG, when it reached *Ba-mó*, stockaded itself along the bank of the river at the spot where the mart is held.

The governor of *Kaung-toñ*, not having sufficient force to go out and attack the Chinese, employed himself in repairing the old and constructing new defences, &c. about that town. The Chinese, leaving 3,000 horse and 30,000 foot with three generals to defend their stockade at *Ba-mó*, advanced with 70,000 foot and 7,000 horse under general TSU'-TÁ-YENG himself, and invested *Kaung-toñ*, which they assaulted with scaling ladders, axes, choppers, hooks and ropes; but the garrison, as previously arranged, met the assailants, not only with a heavy fire of cannon and musketry, but with large boilers of hot dammer and molten lead, and long pieces of heavy timber, which they let fall upon them. The Chinese were driven back with great loss, declaring that the besieged were not men, but *nats*† or inferior celestial beings. The Chinese then stockaded themselves around *Kaung-toñ* at a distance of more than 140 cubits.

The LET-WE'-WENG-MHU', or Burmese general, commanding the

* The Burmese pronounce *Tsanta* as *Tsandá*.

† The Burmese *nat* is the same as the Hindu *Devah*, and most of the Burmese *nats* are taken from the Hindu Mythology.

water force from *Ava*, on arriving at the mouth of the *Nat-myet-nhá* above the town of *Shuegú*, stopped to allow all his boats to come up, and determined, in the meantime, to throw into *Kaung-toŭn* a supply of ammunition. He selected three officers who volunteered to perform this service with three fast-pulling boats. The Chinese had only three boats, which they had constructed on their arrival at *Ba-mó*. The Burmese volunteers succeeded at daybreak one morning to pass through the Chinese besieging force stationed to the westward of *Kaung-toŭn*, and entered that town with the supply of ammunition, as well as with presents of dresses and money, which the king of *Ava* had sent to the governor. On the same night the Chinese force made another unsuccessful attack. The governor arranged with the Burmese volunteers a plan of operations,—namely, that the water force from *Ava* should first go and attack the Chinese posted at *Ba-mó*, and then fall on the rear of the force besieging *Kaung-toŭn*, from which the governor should at the same time make a sortie. The volunteers again at day-break passed through the Chinese force stationed to the north-west of the town, and rejoined the water force. The general of that force, entirely approving of the governor of *Kaung-toŭn's* plan of operations, now moved his fleet of boats close along the western bank of the *Eráwadi* to *Ba-mó*, and then, landing his soldiers under a heavy fire from his boats, he stormed and carried all the Chinese stockades. The Chinese general before *Kaung-toŭn*, *Tsu'-TÁ-YENG*, dispatched upwards of 1,000 horse in support of *Ba-mó*, but the Burmese general placed 2,000 troops to prevent the Chinese crossing the *Len-ban-gya* river, and *Tsu'-TÁ-YENG* recalled them.

The Burmese general then selected three bold and trusty men to pass through the Chinese force before *Kaung-toŭn* at night, and report to the governor the fall of *Ba-mó*, and the intention of the Burmese general to attack on a certain day the besieging force. On the appointed day, the Burmese general, leaving one division of his force at *Ba-mó*, marched with the remaining nine divisions, and attacked the Chinese before *Kaung-toŭn*, and at the same time the garrison of *Kaung-toŭn* sallied out. The Chinese, although greatly superior in numbers, were much disheartened at the loss of their stockades at *Ba-mó*, and after three days' fighting, the whole of the Chinese works before *Kaung-toŭn* also were taken. Ten of their generals and more than 10,000 men were killed, and the Chinese, after setting fire to the boats which they had been building, closed round their general *Tsu'-TÁ-YENG*, and, taking him up, fled to their force on *Thín-zá-nuoy-lein* mountain. The Burmese followed the

Chinese, and, driving them out of their stockades on that mountain, pursued them as far as *Mó:wún*, taking a great quantity of arms, prisoners and horses.

The land force of 22 divisions, which marched from *Ava* under the *Wún-gyíh MAHÁ-TSI'-THU'*, having arrived at *Mō-gaung*, after repairing the defences of that town, and leaving a sufficient garrison in it, proceeded to meet the Chinese army, which was advancing by the *Santa** route. On crossing the *Kat-kyo-waing-mó*, the *Wún-gyíh* heard that the Chinese army were near *Lízó* mountain, and sent a small party in advance to reconnoitre. This party before it came to *Lízó* fell in with a party of 1,000 horse, which the Chinese general *TSHENG-TÁ-LÔ-YE* had also sent in advance, for the same purpose of reconnoitring, and the Burmese, drawing the Chinese into a narrow pass between two mountains, where their horse could not form line, attacked and defeated them. Judging, however, from this reconnoitring party only consisting of 1,000 horse, that the Chinese army must be of great force, the Burmese party stopped on the bank of the *Nán-nyen†* river, and sent some scouts on in advance. These returned with the intelligence, that, on ascending the top of a mountain and climbing some trees, they had seen the Chinese army, which amounted to about 20,000 horse, and 100,000 foot. The *Wún-gyíh* then appointed six divisions of his army to proceed with celerity by the right, and six by the left, round each side of the *Lízó* mountain, whilst with the remaining ten divisions, he advanced by the centre route slowly, and occasionally firing cannon. The Chinese general hearing of the approach of the Burmese, left one-third of his army to take care of his stockades in *Lízó*, and with the remainder advanced to meet the Burmese, and took post on the eastern bank of the *Nán-nyen* river. The Burmese force under the *Wún-gyíh* came up and joined the reconnoitring party on the western bank of the same river, whilst the right and left wings, which had reached *Lízó* by marching round the rear of the Chinese main army, suddenly attacked and carried the stockades there. The Chinese in those stockades believing that the principal portion of their own force was in front of them, were completely taken by surprise, and fled and joined their army under general *TSHENG-TÁ-LÔ-YE'*.* These wings of the Burmese army then fell in with another Chinese force, which was coming from *China* with a convoy of provisions to their army, and took possession

* The distance between *Mō-gaung* and *Santa* is said to be only five or six days' journey.

† For the Shan word *Nám*, water and small river, the Burmese always write *Nán*.

of the whole of the horses, mules and provisions. The Burmese generals reported their successes to their commander in chief, the Wún-gyíh, by a swift horseman, and proposed that their force should now fall on the rear of the Chinese army stationed on the east bank of the *Nán-nyen*, whilst the Wún-gyíh attacked it in front. The Wún-gyíh sent the messenger back approving of the plan of attack, and fixing the day on which it should take place. On the appointed day, the two wings of the Burmese army fell on the rear of the Chinese on two different points, whilst the Wún-gyíh crossed the *Nán-nyen* and attacked them in front with the main army. The Chinese generals seeing their army placed between two fires, retreated and took post at a spot beyond the *Lízó* mountain; but the Wún-gyíh here again attacked them, and completely routed their army, 100,000 men of which fled to *Santá* and there threw up new works. The Wún-gyíh halted his army at *Maing:lá*, in order to recruit it.

The Wún-gyíh having been taken unwell, the king of *Ava* recalled him, and appointed the LET-WE'-WENG-DÔ-MHU', who was in command of the *Ba-mó* water force, to go and relieve the Wún-gyíh, and with orders to attack and destroy the Chinese army, and then take possession of the eight Shan towns, *Hóthá*, *Láthá*, *Móná*, *Tsandá*, *Maing:mó*, *Tsi-guen*, *Kaing-máh*, and *Mó:wún*. The LET-WE'-WENG-DÔ-MHU' proceeded with his ten divisions from *Ba-mó* and joined the Wún-gyíh's army at *Maing:lá*, and soon after advanced and attacked the Chinese force at *Santá* under general TSHENG-TÁ-LÔ-YE', which had been suffering much from want of provisions, the inhabitants of the eight Shan towns having refused to comply with the Chinese general's requisitions, declaring that they were subjects of the king of *Ava*, and afraid to assist the Chinese. The Chinese were forced to retreat, and the Burmese pursued them as far as *Yunan*, taking a multitude of prisoners, horses, arms, &c. The LET-WE'-WENG-MHU' after taking possession of the eight Shan towns, which had heretofore thrown off their allegiance to *Ava*, joined another Burmese general, the Wún-gyíh MAHÁ THI'-HA-THU'RA, who had been sent with an army by the route of *Lú-ta-tshay-nhít-paná*. The two generals attacked another Chinese force of upwards of 50,000 men, which was posted on a high mountain to the north-east of *Theinní*, and one-third only of these Chinese escaped into their own country. The LET-WE'-WENG-DÔ-MHU' and the Wún-gyíh MAHÁ THI'-HA-THU'RA having completed his Majesty's service, then returned, with the prisoners, guns, &c. which they had taken, to *Ava*, where they arrived on the 21st May, 1767.

In the month of November, 1767, another Chinese army, consist-

ing of 60,000 horse and 600,000 foot, under the emperor of *China's* son-in-law, MYENG-KHOU'N-YE', and his brother TSU'-TÁ LÔ-YE', entered the Burmese dominions by the *Theinni* route, accompanied by the ex-Tsô:buáh of that place, NGA-AUNG-DUON; 100,000 men were sent at the same time against *Ba-mô* by the *Thinzá-nuay-lein* route. On this Chinese army attacking *Theinni*, the governor and other officers evacuated the place with most of the inhabitants. The Chinese general, MYENG-KHOU'N-YE' then advanced with 30,000 horse and 300,000 foot by the *Thibô* road, whilst the other general, TSU'-TÁ-LÔ-YE', having placed a garrison with the ex-Tsô:buáh in *Theinni*, constructed to the south-west of that town, some extensive stockades, in which he took post with 20,000 horse and 200,000 foot, and made arrangements for forwarding supplies of provisions to that portion of their army which was in advance. When a report of this intelligence was received at *Ava* from the Tsô:buáh of *Thibô*, the king appointed 30 divisions, consisting of 30 war elephants, 3,000 horse and 30,000 foot, under the command of the Wún-gyih MAHÁ TSI'-THU', to go and meet the Chinese army advancing by *Theinni* and *Thibô*. This army marched from *Ava* on the 24th December, 1767. Two days after, another army of 20 divisions, 200 war elephants, 2,000 horse, and 20,000 men, under the Wún-gyih MAHÁ THI'HA-THU'RA, marched by *Shue-zá-yan**, up *Nyaung-ben-gyih* and *Pó-gyó*, towards the rear of the advancing Chinese army, in order, after intercepting their communications with *Theinni* and cutting off their supplies, to attack the Chinese in the rear. Four days after a third army, consisting of 200 war elephants, 2,000 horse and 1,000 men, was detached under the command of the LET-WE'-WENG-DÔ-MHU', with orders to advance by the *Mómeit* road, and attack the rear of a Chinese force which was advancing by that road†.

On the Wún-gyih MAHÁ TSI'-THU' arriving at *Ban-gyí*‡ beyond *Thibô*§, he sent forward seven divisions of his army which fell in with the Chinese and were driven back. The Wún-gyih then advanced with his whole army, and made an attack on the outposts of the Chinese force, which were posted on *Gout*¶ mountain to the westward of *Thibô*, for the purpose of drawing the enemy out; but the Chinese

* A pagoda at *Paleit* a village on the *Myet-ngay*, six or seven miles to the S. E. of *Ava*.

† This is the campaign of which SYMES has given some account in p. 69, &c. of the introduction to his embassy.

‡ SYMES'S *Peengee* and *Chibo*.

§ SYMES'S *Goup-toung-taung* is a hill or mountain in Burmese, and *Gout* mountain is near *Thibô*, and not *Bamô*.

general assailing the Wún-gyíh with an immense superiority of force, the Burmese were defeated with loss, and driven back in great disorder. Three regiments were taken prisoners, being unable to extricate themselves from the midst of the Chinese army, which they had penetrated in a charge. The Wún-gyíh collected his troops and retired, thinking only of defending himself. The Chinese general pursued the Burmese with increased confidence, until the advance of his army reached *Bout-the-kay-byen*. The Wún-gyíh sent notice to *Ava*, that every attempt which the Burmese had made to stop the Chinese had failed; that they had penetrated as far as *Bout-the-kay-byen*; and that he had taken post at *Loŭngá-byen-gyíh*. When this intelligence reached *Ava* on the 9th March, 1768, the whole of the ministers and officers were much alarmed, and advised his Majesty to fortify the city, and make preparations for receiving the Chinese, who were but two or three days' journey distant. The king abused his officers, and declared that if the Chinese came, he and the four princes, his brothers, alone would meet and destroy them.

The Wún-gyíh MAHÁ THÍ'-HA-THU'RA, who was ordered to proceed with his force to the rear of the Chinese army and cut off their supplies, sent a strong detachment in advance under the Tsit-kê-gyíh*, TEIN-GYA':MEN:GAUNG, to reconnoitre. This officer reported, that the Chinese were advancing in great force, and that he would stockade himself and oppose them. The Wún-gyíh fearing to divide his force, ordered the Tsit-kê-gyíh to fall back, but the latter, being of opinion that his retreating from the immediate vicinity of the enemy would encourage them, and make them believe that the Burmese force was inconsiderable, urged the Wún-gyíh to advance, and threw up a stockade with large bamboos. The Chinese came up at night and repeatedly attacked this stockade, but without success. As soon as the Wún-gyíh learnt the Tsit-kê-gyíh's determination to make a stand, he pushed on with the rest of his force, which accelerated its pace on hearing the sound of cannon and musketry, and the moment it reached the Tsit-kê-gyíh's stockade, attacked the Chinese with great impetuosity. The Chinese were defeated and forced to retire, and after the Burmese army had recruited a little, the Wún-gyíh followed the enemy, and attacked and drove them out of *Lá-shi* or *Lá-shyó*, where they had stockaded themselves; and again out of *Kyú Shyó*, until they took shelter in *Theinní*. The Wún-gyíh followed and took post on the bank of the *Nán-beng* or *Nán-peng* river to the south-east of *Theinní*, sending three divisions of his army under TEIN-GYA':MEN:GAUNG to the west of the *Salween* river at the *Kuon-*

* Lieutenant-General in war.

loŭn-dá:gu ford, with orders to stop and cut off a convoy of provisions which was coming to the Chinese. This service was successfully performed, and the Chinese general TSU'-TA'-LÔ-YE' and other officers finding their own supplies intercepted, were unable to spare any for their army which was in advance under MYENG-KOUN-YE'. The Chinese near *Theinní* were soon in great distress from a scarcity of provisions, and too uneasy to come out and attack the Burmese. Hearing a report also, that TEINGYA':MEN:GAUNG was coming to attack them with 1,000 *musth* elephants, the whole Chinese camp were watching the clouds*. At this time, the Let-wé-weng-mhú, who had marched by the *Mó:meit* road, arrived with his ten divisions, and joined the Wún-gyih MAHA' THÍ'HA-THU'RA before *Theinní*. The Let-wé-weng-mhú proposed to the Wún-gyih to let him march on at once with 30 divisions, and fall on the rear of the Chinese advanced force near *Thibó*; but the Wún-gyih was of opinion, that the Chinese near *Theinní* should first be disposed of, and believing that the town of *Theinní*, in which Shans and Chinese were intermingled, could be more easily carried than the Chinese works outside under their general TSU'-TA'-LÔ-YE', the Wún-gyih stormed *Theinní* with three divisions of 10,000 men each, and captured it with the whole of the Chinese magazines. The ex-Tsô:buáh, several Chinese officers of rank, and as many of the garrison as could escape, fled into the Chinese entrenchments beyond the town, but nearly 2 or 3,000 Shans and Chinese were killed.

The Wún-gyih MAHA' THÍ'HA-THU'RA then made arrangements for depriving the Chinese camp of their supply of water, and posted divisions of his army in a line along the *Nán-beng* river, from the south of *Theinní* from *Kyañk Koñn* on that river to the east of the town, covering at the same time the *Nán-tú* river, and planting troops at every road or passage leading down to the points at which the Chinese used to come and take water. The Chinese army soon began to experience great distress, no provisions being able to reach them from the rear, as well as being in want of water; and when the Wún-gyih ascertained this fact through some prisoners who had come over to the Burmese in search of water, he attacked the Chinese entrenchments at three points with more than 30 divisions and captured them. The emperor of *China's* brother, TSU'-TÁ-LÔ-YE', finding the army unmanageable, cut his throat with his own sword and died. The Chinese fled pursued by the Burmese, who took a great many prisoners, together with arms, elephants and horses, and

* *Tein* in the Burmese language means cloud, and *akyá*, or in composition *gyá*, means between. This is SYMES's *Tengia Boo*.

killed more than they could number. The Chinese generals YAU'K-AN, KHE'-WA, PAN-THE, YI'N-TSOON-YE', YI'N-TÁ-YI', and KUEN-LÔ-YE' were also taken prisoners with their chargers.

The Wún-gyíh MAHÁ THI'HA-THU'RA then, leaving a strong garri-son in *Theinní*, advanced against the Chinese army under MYENG-KOUN-YE'. The other Wún-gyíh, MAHÁ TSI'-THU', who had posted himself on *Loŋgá-byen-gyíh*, learning by the return of the messenger whom he had sent to *Ava*, that his majesty was highly displeased with him, determined to make another attack on the Chinese, and, marching round the rear of *Thoŋn:zay*, attacked them with three divisions on both flanks and centre, but owing to the great force of the enemy, the Burmese were repulsed, and succeeded only in killing 10 or 20,000 men. The Wún-gyíh rallied his troops, and after recruiting them a little, arranged another attack. He sent 4,000 men secretly at night to the rear of the Chinese army round their right and left flanks, with orders to be concealed during the night, and at day-break to fall upon the right and left wings of the enemy; whilst the Wún-gyíh, on hearing the sound of their attack, would advance with the rest of the army in three divisions, and attack the Chinese in front. This attack succeeded completely; and the weapons of the Burmese were so smeared with the blood of the Chinese, that they could not hold them. The Chinese had before suffered greatly from want of provisions, and their general, now believing that the Burmese from *Theinní* had arrived in his rear, deemed it prudent to fall back with the whole of his 30 divisions of 10,000 men each. The Wún-gyíh continued to attack the retreating enemy, and the whole of the woods and hills were covered with the dead bodies of the Chinese. The Chinese general MYENG-KOUN-YE', collecting as many of his men as he could, retired by *Taung-bain*, avoiding the road to *Theinní*, and on arriving at *Maing:yoŋn* and *Maing:yín*, took post on the top of a hill. The Wún-gyíh MAHÁ TSI'-THU' in the pursuit of the Chinese met the other Wún-gyíh MAHÁ THI'HA-THU'RA advancing with his force, at *Naung-bó* to the westward of *Lá-shyó*. The two armies united and marched towards the Chinese general at *Maing:yoŋn* and *Maing:yín*, but as soon as he heard of their approach, he fled into *China*. The two Wún-gyíh's finding the Chinese had retired, and that the king's service was completed, returned with all their prisoners, arms, &c. to *Ava*, where they arrived on the 17th March, 1768.

The Chinese force of upwards of 100,000 men which had marched against *Ba-mó* by the *Thínzá-nuay-lein* road, repeatedly attacked that place, which was so skilfully defended by BULA MEN:DEN, that they

could not carry it, and after losing a great many men, and suffering much from scarcity of provisions, they heard of the flight of the large Chinese army under the king's brother and son-in-law, and immediately raised the siege of *Ba-mó*, and fled to *China*.

For more than twelve months there was a cessation of hostilities between the two countries, owing apparently to a communication sent from *Ava* to *China* by eight Chinese prisoners, who were released for that purpose. But about the end of 1769, intelligence was received from *Ba-mó*, that another Chinese army of 50,000 horse and 500,000 foot was marching against the Burmese dominions under three generals, THU'-KOUN-YE', AKOUN-YE', and YUON-KOUN-YE'. On the 21st October, the king of *Ava* sent a force of 100 war elephants, 1,200 cavalry and 12,000 foot under the Amyauk-wún*, NE MYO':-THI'HA-THU', to *Mó:gaung*, by the route to the westward of the *Eráwadí*. Three days after, another force amounting to 52,000 men under the Wún-gyíh MAHÁ THI'HA-THU'RA proceeded by water to *Ba-mó*; and in another three days, two more divisions proceeded with the cavalry and elephants under the Mó:meit Tsô:buáh and Kyôden:yázá, by the road to the eastward of the *Eráwadí*.

The three Chinese generals, on reaching *Yóyí* mountain to the north of the *Lízó*, detached 10,000 horse and 100,000 foot under the Kyen-ngan officer, TSHENG-TÁ'-YI'N, to advance by the *Mô:gaung* road, and cutting timber and planks in the most convenient spots, brought them to the bank of the *Eráwadí*, and left the general LÔ-TÁ'-YE' with 10,000 carpenters and sawyers, to construct large boats†. The main army then marched on towards *Ba-mó*, and after throwing up very extensive stockades at *Shue-nyaung-beng*, twelve miles to the east of *Kaung-toñ*, and leaving 100,000 foot and 10,000 horse to defend them under YUON-KOUN-YE', the rest of the army, amounting to 30,000 horse and 300,000 foot, under the other two principal generals and ten officers of high rank, advanced and invested *Kaung-toñ* towards the land side. 500 boats also, as soon as they were built in the upper part of the *Eráwadí*, were brought down and placed with 50,000 men under YI-TÁ'-YI'N, the governor of *Thú-kyeng*, so as to invest *Kaung-toñ* on the river face. *Kaung-toñ* was repeatedly attacked by the Chinese by land and water, but its governor, BULA MEN:DEN, defended it so bravely and skilfully, that the Chinese were obliged at last to confine their operations to

* Chief of artillery; SYMES's *Amion-mee*.

† This statement is opposed to Mr. GUTZLAFF's opinion, derived from the Chinese accounts of this war, that some navigable river from *China* falls into the *Eráwadí*, and that the Chinese army brought boats with them by that means.

keeping up an incessant fire against the place, from the positions occupied by their land and water force.

As soon as the Wún-gyíh MAHÁ THÍ'HA-THU'RA, who was advancing with the water force from *Ava*, heard that the Chinese were closely besieging *Kaung-toŭn*, he ordered TSA'N-LHA-GYÍ'H, DHAMMA-TÁ, BINIÁ UH and SHUE-DAUNG-NGAY with four war-boats and all the boats which had joined him from the different towns on his route from *Ava*, to proceed with expedition before the rest of the army, and endeavour to throw into *Kaung-toŭn* a supply of ammunition and provisions. These four officers attacked the Chinese boats in front of *Kaung-toŭn*, and after defeating and driving them off, and capturing many, succeeded in relieving *Kaung-toŭn*. TSA'N-LHA-GYÍ'H then stockaded himself with 5,000 men in the rear of the Chinese besieging force, on a spot to the south of *Kaung-toŭn*, and north of the mouth of the *Tsín-gan* or *Tsín-khan* river, whilst DHAMMATÁ and BINIÁ UH with their boats, and the Chinese boats which they had captured, took post near the island of *Kyun-dó* on the side of the *Eráwadi*, opposite to that on which *Kaung-toŭn* stands. The Chinese water force returned to its former position in front of *Kaung-toŭn*, and 40 or 50,000 Chinese made an attack on TSA'N-LHA-GYÍ'H's stockade, but being unable to carry it took post round it.

The Wún-gyíh being joined at *Tagaung* and *Malí* by the elephants and cavalry which had marched from *Ava* by the eastern route, detached 100 war elephants, 1,000 horse and 10,000 men under the Let-wé-weng-mhú with orders to proceed to *Mó:meit*, and after putting that place in a state of defence, to watch the state of affairs and seize any opportunity which might offer for attacking the Chinese army. The Wún-gyíh himself then advanced with his boats, and on arriving near *Kaung-toŭn*, took post near the island opposite that place, towards the western bank of the *Eráwadi*. He then ordered 1,500 horse and 15,000 foot, under the Shye-weng-mhú* and Tein-gyá:men:gaung, to cross over and land on the eastern side of the *Eráwadi*, and, marching round the rear of *Moyú* on the north bank of the *Len-ban-gya*, to attack any convoy of supplies and provisions which might be coming to the enemy from *China*, and afterwards fall on the rear of the Chinese army.

The force which marched from *Ava* to *Mō:gaung* under the Amyauk-wún, after placing *Mō:gaung* in a state of defence, advanced to meet the Chinese army coming in that direction. Learning from his scouts

* "Commanding the eastern entrance into the palace," to which honorable post this officer, who had so much distinguished himself in the preceding campaigns, appears to have been elevated.

that the Chinese force of 10,000 horse and 100,000 foot under general TSHENG-TÁ-LÔ-YE', which had been detached towards *Mô:gaung*, had halted on the east bank of the *Eráwadí*, near *Naung-tá-ló* island, above *Kat-kyo-wain-mó*, in order to construct a bridge over the river, which is narrow there, the Amyauk-wún rapidly advanced with his whole force and took post near *Peng-tháh*, an island lying near the west bank, and above and below it along the river, whence he prevented the Chinese from building their bridge or crossing the *Eráwadí*.

The Shye-weng-dô-mhú, having crossed the *Eráwadí* river with his 15,000 men, and landed at the landing-place of the *Ba-mó* mart, marched round the north of the *Len-ban-gya* stream and cut off the supplies of the Chinese, capturing every convoy of men, horses and mules which was approaching by the *Maing:tein* road, and then turned round to attack the rear of the Chinese army; whilst the Let-wé-weng-mhú, who had been detached to *Mó:meit*, having put that town in a state of defence and placed in it a strong garrison with its Tsô:buáh, was advancing towards *Kaung-toñ* with his ten divisions. The Chinese generals, THU'-KOUN-YE' and AKOUN-YE', hearing that the Shye-weng-mhú and Let-wé-weng-mhú were advancing in two directions from the rear to attack them, sent out a force of 5,000 horse and 50,000 foot under YÓ-TÁ-YI'N, the governor of *Lhyín-yín*, to meet the Let-wé-weng-mhú, and another force of the same strength under KÓ-TÁ-YI'N, to meet the Shye-weng-mhú.

As the Let-wé-weng-mhú was advancing from *Mó:meit* and had crossed to the northward of the *Tsín-khan* river, he fell in with 5,000 Chinese horse which were preceding the Chinese general YÓ-TÁ-YI'N, and immediately attacked them with 100 elephants and 2,000 musqueteers and broke them. He then sent against the right and left flanks of the Chinese force 500 Cassay and 500 Burmese horse, whilst he himself penetrated into the very centre of the Chinese force with the rest of his ten divisions. The Chinese were completely defeated and driven back with great loss, and the Let-wé-weng-mhú halted his force, and took post on the north bank of the *Tsín-khan* river.

The Shye-weng-mhú also fell in with the Chinese force sent against him at a spot beyond the *Nán-ma-bué* river, to the eastward of the great Chinese stockade at *Shue-nyaung-beng*, and, dividing his force into three portions of five divisions each, received the Chinese attack. The Chinese horse advanced with great impetuosity, but being received by the fire of 3,000 musqueteers from the Burmese right and left wings, they were driven back with the loss of 5 or

600 men. The whole Burmese force then advanced and attacked the Chinese, and forced them to fall back to their great stockade at *Shue-nyaung-beng* with a heavy loss. This stockade being as large and extensive as a city, the Shye-weng-mhú halted and took post on the east side of the *Nán-ma-bué* river.

On the Let-wé-weng-mhú then sending out a party of 100 horse to open a communication with the Shye-weng-mhú, the latter reported that all the supplies of the enemy had been intercepted, and their communication with the rear cut off, and proposed that the two Burmese forces should make a combined attack on the great Chinese stockades at *Shue-nyaung-beng*, as, after capturing them, the Chinese army before *Kaung-toŭn* would be enclosed like fish in a net. The Let-wé-weng-mhú on receiving this proposition, summoned all his officers, and after praising it to them, advanced with the whole of his ten divisions and joined the Shye-weng-mhú's force before the great Chinese stockades at *Shue-nyaung-beng*. A plan of attack being then arranged, the Chinese stockades were stormed at four points, to the east by six regiments under the Shye-weng-mhú, to the south by six regiments under Men:ngay-bala, to the west by seven regiments under the Let-wé-weng-mhú, and to the north by six regiments under the Láin-bó*. Some of the Burmese entered by ladders, whilst others entered by the openings which were made by elephants employed to butt against and throw down the gates and timbers. Although the Chinese with their general and the whole of their officers received the Burmese on the top of their works, and maintained a heavy fire, the Burmese, urged on by their generals, the Shye-weng-mhú and Let-wé-weng-mhú, succeeded in entering the works, when the whole of the Chinese rushed out of the western face, and joined the army which was before *Kaung-toŭn* under their generals THU'-KOUN-YE' and AKOUN-YE'. The Burmese generals having captured the Chinese entrenchments at *Shue-nyaung-beng*, with an immense quantity of guns, jinjals, muskets and ammunition, and horses and mules, placed a garrison of 5,000 men in charge of these stockades. The Let-wé-weng-mhú with ten divisions then proceeded and took post at *Naung-byit* on the north bank of the *Tsín-khan* river, four miles to the south-east of *Kaung-toŭn*; whilst the Shye-weng-mhú with ten regiments took post on the bank of the *Len-ban-gya* river, opposite to *Mó:yú* village, and eight miles distant from *Kaung-toŭn*.

The Wún-gyih then sent eight divisions of his fleet under the MEK-KHA-RA'-BÓ and seven other officers to attack the Chinese boats

* Officer of *Lain*, a town and district near *Rangoon*.

which were blockading *Kaung-toŭn*. This attack succeeded ; but the Burmese having returned to the Wún-gyíh with the boats and guns they had captured, the Chinese fleet rallied and resumed the blockade. The eight divisions of the Burmese fleet, as soon as they had refitted and repaired, again attacked the Chinese fleet, and after a severe engagement, forced the crews to jump on shore, and leave all their boats, guns, &c. of which the Burmese took possession. The Wún-gyíh's army then opened a communication with the garrison of *Kaung-toŭn*, and the Wún-gyíh sent 10 regiments under MEN:YE'-ZEYA-GYÔ to cross the *Eráwadí* below *Kaung-toŭn* to the eastward, and post themselves along the *Tsín-khan* river to the south east of that town, so as to communicate with *Naung-byít*, where the Let-wé-weng-mhú was stockaded. The Wún-gyíh also sent ten regiments under MEN:YE'-YÁN-NAUNG to cross the *Eráwadí* above *Kaung-toŭn*, and to place themselves along the *Len-ban-gya* river to the north of that town, so as to communicate with *Moyú*, where the Shye-weng-mhú was posted. The Wún-gyíh also, in order to induce the Chinese to believe that strong reinforcements were daily joining him, made large parties of men, elephants and horses cross over every day from the west to the east bank of the *Eráwadí*, and at night brought them all secretly back again to the west.

The Chinese generals THU'-KOUN-YE' and AKOUN-YE', then summoned all their officers, and after describing the defeats which both their land and water forces had so repeatedly sustained, and the severe sufferings which their army was experiencing from the want of every kind of supplies, which the Burmese had intercepted, and observing that even if they succeeded in an attempt to force the Burmese armies around them, the Chinese troops would be unable to go far, owing to the scarcity of provisions, the Chinese generals proposed to depute a mission to the Burmese camp, in order to open a negotiation for peace, and for a passage for their army to *China*. This proposition being unanimously approved of, the Chinese generals addressed the following letter to the Burmese commander-in-chief:—

“The generals THU'-KOUN-YE', AKOUN-YE', and YUON-KOUN-YE' to the (Burmese) general. When we three, who were appointed to march to *Ava* by three different routes, were about to commence our march in the year 1129, (1767-8,) the (Burmese) general sent eight Chinese with a letter, stating that all sentient beings desired rest. We therefore delayed our march a year. Even now, we should be happy only to see our dispute settled, which it will not be for years, if we go on fighting. We are not come, because we want the Burmese dominions. If the sun-descended king (of *Ava*)

sends presents, as was the former custom, in the 16th year of the emperor of *China's* reign, we shall send presents in return. Our master the emperor's orders are: 'Fight, if they fight; or make peace, if they make peace.' We three generals, desirous of settling this dispute, have come with a moderate force only. In our Chinese country we are not accustomed to say more than one word, and are used to speak with truth and sincerity only. The present war has arisen from the circumstance of the Tsô:buáhs of *Theinní*, *Bá-mó*, *Mô:gaung*, and *Kyaing:yoŭn* having come and invited us. We will deliver up the Tsô:buáhs, subjects of the sun-descended king, who are now in *China*. Let them be restored to their former towns and situations. And after the (Burmese) general has delivered up to us all the Chinese officers and soldiers who are in his hands, let him submit to the sun-descended king and great lord of righteousness, and we will also submit to our master, the emperor and lord of righteousness, that the two great countries may continue on the same terms as they always were before; that all sentient beings may be at rest; that there may be no war; and that the gold and silver road may be opened."

The Kue-chow-bó* coming to the advance of the Burmese army with the foregoing letter on the 3rd December, 1769, the Wún-gyíh sent out some officers with a Chinese interpreter to meet the bearer of the letter. One of the Burmese officers, hearing that the object of the letter was to open a negotiation for peace, told the Kue-chow-bó, that in order to establish an important precedent, such negotiation ought to take place on the boundary line between *Ava* and *China*. The Kue-chow-bó replied, "Very true, but only say where the boundary is." The Burmese asked, if Buddhist pagodas were not built in the towns of *Hó-thá*, *Lá-thá*, *Móná*, *Tsandá*, *Kaing:máh*, *Khantí*, and *Khan-nyen*? The Kue-chow-bó said that they were built, and that they are still in existence. The Burmese rejoined, the Chinese do not build or worship Buddhist pagodas, but the Burmese do; such buildings are erected throughout the king of *Ava's* dominions, and their existence in *Hó-thá*, *Lá-thá*, and the other towns, is a convincing proof of those places belonging to the king of *Ava*. The Chinese army ought therefore first to retreat beyond those towns, to the boundary of the Chinese empire at *Mó:myín* and *Kyeng-thi*. (*Kyang-si*?) The Kue-chow-bó then asked, if there is not such a place as *Ta-roup-mó* (Chinese point) in the king of *Ava's* dominions; and on being

* That is, "The officer of *Kue-chow* city;" but this name is generally written in Burmese history, *Kue-tsue-bó*.

answered that there is, below the city of *Prome*,—he asked, if the Burmese history and ancient records do not mention, that in a former king of *Pagan's* time, a Chinese army invaded the country and marched along the *Eráwadí* as far as that place, which was thence called *Taroup-mó*;—and on again being answered in the affirmative, he observed, an army under the son, brother, and son-in-law of TSHEN-BYU'-MYÁ:YEN, king of *Pegu*, only came as far as those towns of *Hó-thá*, *Lá-thá*, &c. during the reign of that king, and built those pagodas;—but if you refer to the spot only to which an army may have happened to reach, the Burmese army ought, on the same principle, to retreat as far as *Taroup-mó**. The letter from the Chinese generals was then taken in to the Wún-gyih, who, after reading a translation of it which was made, sent word that all his officers had not yet joined him, and that the Kue-chow-bó must come again in four or five days.

The Wún-gyih summoned thirty of his principal officers and consulted with them as to the answer which should be made to the letter from the Chinese generals. They all recommended that no terms should be given;—but the Wún-gyih observed, that whenever the Chinese had heretofore erred and attacked *Ava*, the Burmese kings restrained their feelings and granted them peace, recollecting the long friendship which had existed between the two countries;—that even if the Chinese force then before them were entirely destroyed, the empire of *China* would still possess abundance of troops and population;—that if the Burmese refused to grant terms to the Chinese, when asked by them, and cut them to pieces, such a proceeding would be recollected for many successive generations with feelings of animosity and desire of revenge on their part, and the inhabitants of both countries would continue deprived of peace and quiet. For these reasons, the Wún-gyih gave it as his opinion, that terms ought to be granted to the Chinese,—and declared, that if the king of *Ava* disapproved of the measure, he would take the whole responsibility of it upon himself. The other officers acquiesced, and the Wún-gyih then addressed a long reply to the Chinese generals, recapitulating the causes and events of the war, and concluding with an inquiry, whether the Chinese generals desired to settle the dispute by arms or by negotiation. The Chinese generals THU'-KOUN-YE' and AKOUN-YE', (the latter here stated to be the emperor of *China's* son,) next sent a long letter addressed to the king of *Ava*, closing

* The ground on which the Burmese claimed *Hó-thá*, *Lá-thá*, &c. is precisely the same as that on which the Burmese of the present day founded their right to *Kubo* valley, *Manipur*, and even to *Chittagong* and *Dacca*.

with a request, that officers of rank and intelligence on each side, should meet and settle all points of difference; and with this condition, that the Chinese army should not retire until after the Burmese army was withdrawn; for, as the Chinese generals said, if we retreat first, we are afraid the Burmese army may follow and attack us, as was done at *Theinni*. This letter was brought to the outposts of the Burmese camp by the Kue-chow-bó and the interpreter NGA-MYAT-THUON-AUNG, on the 10th December, 1769. The Burmese officers who came out and met him, at first refused to take the letter, observing that the business must be discussed with them; that the king of *Ava* ought not to be addressed; and that, in fact, they dare not forward any such letter to him. The Kue-chow-bó assured the Burmese, that the person who had written the letter from the Chinese generals had made a mistake through ignorance, and that the letter was intended for the Burmese generals and officers. The Kue-chow-bó further proposed, that if the Burmese really desired to make peace, they should permit the Chinese army to retire freely to a suitable situation, at which the negotiation might be concluded; and displayed great anxiety for peace as soon as possible. The Burmese officers sent him back with a promise only to report all he had said to their general.

The Kue-chow-bó returned to the Burmese camp on the 12th of December, when the Wún-gyíh delivered to him a letter for the Chinese generals, expressing his willingness to negotiate a peace. The moment the Chinese generals understood the contents, they sent the Kue-chow-bó back to the Wún-gyíh, to beg of him to fix the day on which certain officers of the two armies should meet and discuss the matter. The Wún-gyíh appointed the following day.

On the 13th December, 1769, fourteen Burmese and thirteen Chinese officers of rank met in a large shed, which was erected for the purpose at the south-east angle of the town of *Kaung-toñ*. On the part of the Chinese the Kue-chow-bó was the principal speaker, and on that of the Burmese, the Wún-dauk NE-MYÓ-MAHÁ-THURA. The Burmese demanded, that the Tsô:buáhs of *Theinni*, *Ba-mó*, and *Mó:gaung* should be immediately made over to them. The Chinese said, that these Tsô:buáhs were not in their camp, and affirmed with an oath, that they should be forwarded to *Theinni* and surrendered to the Burmese there, within six months from that date. The following treaty was then written on white paper with ink, and a copy delivered by the Chinese to the Burmese:—

“ Wednesday, 13th December, 1769, in the temporary building to the south-east of the town of *Kaung-toñ*. His Excellency the general

of the lord who rules over a multitude of umbrella-wearing chiefs in the great western kingdom, the sun-descended king of *Ava*, and master of the golden palace, having appointed, [here follow the names and titles of the 14 Burmese officers,] and the generals of the master of the golden palace of *China*, who rules over a multitude of umbrella-wearing chiefs in the great eastern kingdom, having appointed, [here follow the names and titles of the 13 Chinese officers,] they assembled in the large building, erected in a proper manner with seven roofs to the south-east of the town of *Kaung-toŭn*, on the 13th December, 1769, to negotiate peace and friendship between the two great countries, and that the gold and silver road should be established agreeably to former custom. The troops of the sun-descended king and master of the golden palace of *Ava*, and those of the master of the golden palace of *China*, were drawn up in front of each other when this negotiation took place; and after its conclusion, each party made presents to the other, agreeably to former custom, and retired. All men, the subjects of the sun-descended king and master of the golden palace of *Ava*, who may be in any part of the dominions of the master of the golden palace of *China*, shall be treated according to former custom. Peace and friendship being established between the two great countries, they shall become one, like two pieces of gold united into one; and suitably to the establishment of the gold and silver road, as well as agreeably to former custom, the princes and officers of each country shall move their respective sovereigns to transmit and exchange affectionate letters on gold, once every ten years."

The Burmese negotiators, after receiving the above treaty, applied to the Chinese to make over to them such boats as the Chinese still appear to have had near *Kaung-toŭn*. The Chinese promised to deliver the same after they had been employed in bringing up their stores to *Ba-mó*; but the boats were burnt on the same day by the Chinese generals, and some difference of opinion afterwards took place about them. Presents being exchanged between the Chinese and Burmese generals, and some sent by the Chinese to the king of *Ava*, the Chinese army began their march towards *China* on Monday, the 18th December, followed at a distance of a jinjal shot by the Burmese divisions under the Let-wé-weng-mhú and Shye-weng-mhú, until the Chinese reached the boundary of their country, when the Burmese returned to *Ba-mó* and *Kaung-toŭn*. At the same time, the Chinese commanders-in-chief having sent the necessary orders to that portion of their army which had marched towards *Mo-gaung*, that force also retired into *China*.

The Chinese armies having suffered long from want of provisions, those men only who were able-bodied succeeded in reaching *China*, and the forests and mountains were filled with countless numbers who died on the route from starvation.

When the officer, whom the Wún-gyih sent with a report of the peace which had been concluded with the Chinese, and with a large quantity of silks and satins that had been received from the Chinese generals as presents for his majesty, arrived at *Ava*, the king disapproved of the conduct of the general and officers, for allowing the Chinese army to escape; refused to accept the presents, and ordered that the wives of the general and other chief officers should be placed with the Chinese presents on their heads, in front of the western gateway of the palace; and notwithstanding that the wife of the general-in-chief was a sister of the principal queen, she and the wives of the other officers were exhibited for three days at the appointed place, with the bundles of Chinese silks and satins on their heads.

The Wún-gyih and other officers hearing how highly the king was displeased, were afraid to return to *Ava* immediately, and determined to go first and attack *Manipur*, the Tsô:buáh of which, they heard, had been fortifying himself again. In January, 1770, therefore, the Burmese army crossed to the westward of the *Eráwadi* at *Kaung-toñ*, and marched to *Manipur*, and although the Tsô:buáh of that place made arrangements for checking the progress of the invaders at every defile and narrow pass, the Burmese army succeeded in penetrating to the capital, when the Tsô:buáh fled with his family and as many of his adherents as he could, and concealed themselves in jungles and high hills. The Burmese army seized the whole of the population and property they found in the country, with the princess of *Mueyen*, *Tuonkó*, and princes HE'MÔ and TSANDA-YO'-KAY, and brought them to *Ava*, where they arrived on the 23rd of March, 1770.

The king, still displeased at the Chinese army having been allowed to escape into *China*, refused to see the Wún-gyih and other officers of the Burmese army, and ordered them to be removed out of his kingdom into some other territory. They were conveyed to the eastern side of the *Myít-ngay*, which joins the *Eráwadi* near the north-east angle of the city of *Ava*; and two other Wún-gyih's were also ordered by the king to be taken to the same place, for having presumed to speak to his majesty in favor of the general and other officers. About a month after, the king forgave the whole of them, and allowed them to return to *Ava*.

The Chinese generals, THU'-KOU'-N-YE' and AKOUN-YE', returned and reported to the emperor of *China*, that having made peace with

the Burmese at *Kaung-toŭn* upon these conditions ; namely, that the Tsô:buáhs of *Theinní*, *Ba-mó* and *Mó:gaung*, subjects of the king of *Ava*, should be surrendered at *Theinní* ; that all the Chinese officers and soldiers taken prisoners by the Burmese in the years 1765, 1766, 1767, and 1769, should be given up ; and that ambassadors should be sent by both sovereigns once in ten years, the armies of both nations had retired ; and that two officers, the Kue-chow-bó and KYI'N:MEN:TI'TU'HA, had much distinguished themselves. The emperor of *China* was greatly pleased and desired to promote those officers ; but two of the imperial kinsmen, HÁ-TÁ-YI'N and TSHI'N-TÁ-YI'N, with two Tartar nobles, the governors of *Atsì-kyain* and *Maing:thín*, submitted that they should first be allowed to go down to *Mó:myín* and see how far the statements of the Kue-chow-bó were founded in truth. These four individuals accordingly came down to *Mó:myín* and sent a letter to the Burmese governor of *Kaung-toŭn*, in charge of a subordinate officer and upwards of fifty men ; but the governor finding from a translation of the letter, that its contents were very unfriendly, seized and confined the whole of the Chinese mission. A report of the Burmese governor's proceeding was immediately forwarded to the emperor of *China* at *Pekin*, who ordered the Kue-chow-bó to go down himself and see how the matter could be settled.

The Kue-chow-bó came down to *Mó:wún* with upwards of 1,000 soldiers, and sent a very civil letter to the governor of *Kaung-toŭn*, requesting him to release the Chinese party he had confined, and to send back with them the letter which had been addressed to him by the governors of *Atsì-kyain* and *Maing:thín*, by order of HÁ-TÁ-YI'N and TSHI'N-TÁ-YI'N. The governor of *Kaung-toŭn* immediately complied with this request ; and on the Kue-chow-bó perusing the letter, which had been sent to *Kaung-toŭn*, and finding its contents to be not only uncivil, but warlike and threatening, he forwarded it to *Pekin*. The emperor was exceedingly angry, and ordered HÁ-TÁ-YI'N and TSHI'N-TÁ-YI'N, with the two Tartar nobles who had written the letter, to be sent up to *Pekin* in irons. HÁ-TÁ-YI'N died on the road, but on the arrival of the other three individuals at *Pekin*, the emperor ordered them to be executed. In the same year, in October, 1770, the caravans of Chinese merchants came down as before to *Ba-mó*, *Kaung-toŭn*, and other places in the Burmese dominions.

[To be continued.]

X.—Notice on *Balantium*, a genus of the *Pteropodous Mollusca*; with the characters of a new species inhabiting the Southern Indian Ocean.
By W. H. BENSON, Esq. B. C. S.

In Vol. iv. J. A. S., page 176, I enumerated the genera of *Pteropoda* met with in my voyage from England, and noticed, under No. 11, a new perforate genus allied to *Cleodora*, which I marked as very rare, in consequence of the specimen which fell to my net having been the only one seen during the passage.

On looking over the plates of *Lamarckian* genera of *Testacea* given in the old series of the *London Quarterly Journal of Science*, Vol. XV. I met with a figure, No. 107, Plate VII., which bore a very near resemblance to the shell from which I intended to draw the characters of a new genus; and on reference to the letter-press, page 220, I found a note which had theretofore escaped my notice, containing the characters of the genus *Balantium*, which the anonymous translator proposed to establish in order to receive a shell taken by Mr. CRANCH, in Captain TUCKER's expedition to the *Congo*, and preserved with another shell, apparently of the same genus, in the British Museum. The writer assigned the shell provisionally to the family of *Hyalæana*, merely from the strong analogy which the substance of the shell bore to that of *Hyalæa*, until an opportunity should occur of obtaining more accurate information regarding a species so interesting. That opportunity has partly occurred to me, and I am enabled, by the discovery of a second allied species, to confirm, from an inspection of the animal, the correctness of the writer's conjecture regarding the location of the genus in the order *Pteropoda*. The following is the description of *Balantium recurvum*, as given in *Brande's Journal*.

"Shell transparent, very thin and fragile, hyaline, corneous, hastiform: apex recurved; open at both ends; superior aperture dilated, sharp-edged; inferior round, very minute; *sides acute*; superior disk undulated; inferior rounded; numerous transverse grooves on both sides."

The new species differs from the description in having no recurved termination to the shell, or at least the bend is so inconspicuous, as to be of no value as a character; the terminal aperture is also larger in proportion, being, in my specimen, nearly 0.05 of an inch in diameter. It has on one face three radiating longitudinal ribs, (one central and broadest, and two lateral.) The lateral margins are more regular than in *B. recurvum*, are destitute of the grooves which cross the shell transversely, and are provided with a groove running the whole length of their truncated edge, whence it happens

that they are bicarinate, instead of presenting a single edge or keel. The other face has only one broad central elevation, which expands gradually, and in proportion to the increase in width of the shell, towards the superior aperture. My shell is shorter in proportion than *B. recurvum*. I propose to describe it as

BALANTIUM BICARINATUM.

Testa compressâ sub-triangulari hastiformi, faciebus utrisque transverse sulcatis, superiori triradiatâ, radiis convexis, approximatis ad marginem superiorem provectum undulas tres formantibus; facie inferiore medio convexâ, abbreviatâ; marginibus lateralibus lævibus unisulcatis, sub-bicarinatis.

Long. 0.65, Lat. 0.5 poll.

Habitat in Oceano Indico Australi, non procul ab insulis Amsterdam et Sancti Pauli dictis.

I took the shell on the night of the 28th November, 1834, in S. lat. $36^{\circ} 30'$, and E. long. $75^{\circ} 30'$, in company with *Janthina exigua* and another small flat spired species, *Cleodora*, *Hyalæa*, a small *Cephalopode* of the genus *Cranchia*, an independent floating *Anatifera*, and a crustaceous marine *Centipede*. With the exception of a protrusion of a small portion of the *Molluscum* at the apex, the animal was very similar to that of *Cleodora*, but having been crowded with too many specimens in spirits of insufficient strength, it decayed, and was no longer recognizable, when I had an opportunity of substituting a stronger preservative liquor.

I observe that DE FERUSSAC, in his enumeration of the species of *Pteropoda*, contained in No. 262 of the *Bulletin des Sciences*, has referred *B. recurvum* to the genus *Cleodora*, as *C. Balantium*. As the only habitat given by him is *Congo*, it is evident that he was possessed of no information in addition to that contained in the *Journal of Science*, and that he had arbitrarily assumed the specimen to be defective in the apex. The discovery of another species with a similarly perforated extremity, and a like flattened form, should cause us to hesitate before blotting out the genus indicated by the writer in the *Journal of the Royal Institution*. Nothing but the discovery of an imperforate specimen should now permit its annexation to *Cleodora*, between which and *Hyalæa* it appears to supply a void. The parts of Pelagian shells which are most subject to injury are the delicate edges of the apertures, not the imperforate apices, which even in the tender spinous terminations of the *Cresides* and *Cleodora*, are always met with in a perfect state. *Cuvieria* forms no exception to the rule, as, in that genus, the spinous termination is cut off by a diaphragm, and the derelict portion, therefore, follows the ordinary rule observable in

truncated shells. The terminal volute of *Carinuria* is also liable to decadence, but no perforation is visible in the injured part.

I think that the preceding observations will tend to uphold the claim of *Balantium* to rank as one of the prominent types of form, which, for convenience' sake, are termed genera, and that it is desirable that the anonymous institutor of it should claim his property, in order that we may know to whom we should rightly attribute its first indication.

The other species noticed in the *Journal of Science*, as preserved in the British Museum, would appear, from the figure referred to in PARKINSON'S Introduction, to be a *Cleodora* which we met in a tract of the Indian Ocean contained between the parallels of 30° south and 3° north, and the meridians 86° and 92° east; but PARKINSON'S figure does no justice to the form of that truly elegant and delicate shell.

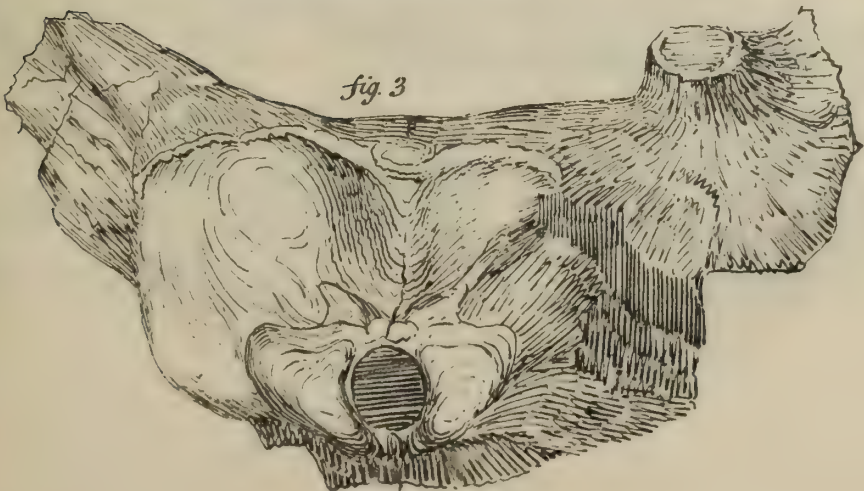
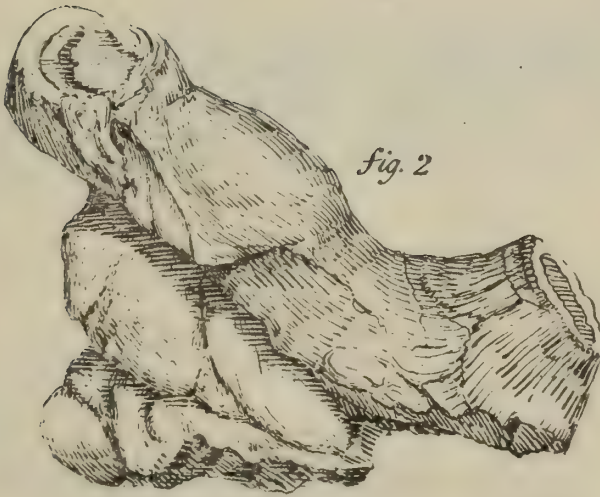
XI.—Additional fragments of the *Sivatherium*.

Before Colonel COLVIN'S departure for Europe, we requested permission to take a cast of the beautifully preserved lower jaw of the *Sivatherium* which he exhibited at the Government House scientific party in January last. In further token of his zeal for science, and of his ever-readiness to oblige, he has, even in the hurry of embarkation, favored us with the accompanying lithographic drawings of the same jaw, and of the larger fragment of the occiput also on its way to adorn some cabinet of fossil osteology in his native land. This fragment is the more valuable on account of its being perfect in the parts deficient in Dr. FALCONER'S specimen published in the *Asiatic Researches*, vol. xix.* We subjoin the Colonel's note explanatory of the drawings, (Plates VIII. IX.)

“ I herewith send you two plates of the *Sivatherium*, one of the portion of the head I was fortunate in having brought in from the lower hills below and west of *Náhan* just before I left *Dádúpur*. It arrived encumbered with a good deal of hard sandstone matrix, most of which I had cleared away. This specimen is valuable, though it has no teeth, from having the occiput very entire, and from its proving the accuracy of Dr. FALCONER'S assumption, founded on examination of the original head, that the animal had four horns with bony cores, as this has the offset of one of the back branched horns very clearly marked; suitable to which I may mention that Captain CAUTLEY has found in his collection a large flat horn. In this Plate, *fig. 1*

* See Journal Asiatic Society, vol. v. January.

SIVATHERIUM
occiput



Scale $\frac{1}{6}$ Natural size.



SIVATHERIUM

lower jaw.

fig. 1.

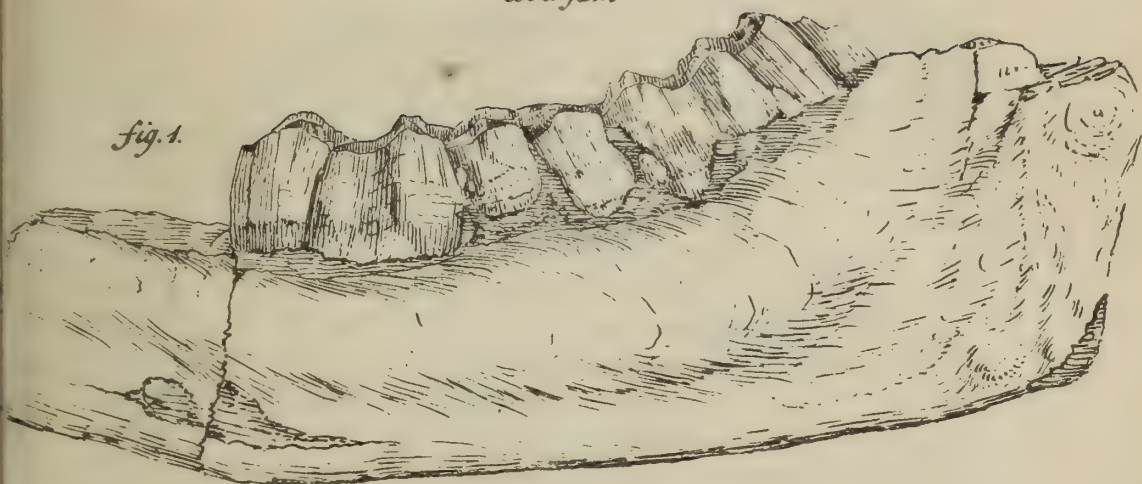


fig. 2.



fig. 3.



Scale $\frac{5}{16}$ th of natural size

represents a front view of my fragment; *fig. 2*, a side view of the same, showing the setting on of the new horn, and the rise of the front one over the eye; *fig. 3* is a view of the occiput:—the whole appear partly distorted from occurrence of a shift. For the left lower jaw of the *Sivatherium*, delineated in the 2nd Plate, I am indebted to Conductor W. DAWE, of the Canal Department, for whom it was brought in, inclosed in a mass of similar sandstone, from near the sources of the *Sombe* river, north of *Dádúpur* and east of *Náhan*, shortly before I came away. It is a very perfect and beautiful specimen, with its molars, four in number, almost quite entire, and is the specimen which you have moulded.

Fig. 1 is of the outside of the left lower jaw.

Fig. 2, ditto crown of the teeth, in which I have endeavoured to be accurate in drawing the flexures of the enamel.

Fig. 3 is of the inside of the same jaw.

In *fig. 1* I have hardly had the jaw perpendicular when drawing it, as it does not sufficiently express the great height of the inner range of the molars over their outer edge, which a cross section would have better shown; but as the specimen is gone on board, I cannot now make it."

XII.—Note on the Hotspring of Lohand Khad. By Capt. C. M. WADE.

Near the village of *Bhasra* and the source of the *Lohand Khad*, (a rivulet, which flows into the *Satlaj* from below the ridge on which the fort of *Chambá* is situated,) there is a mineral spring, the water of which has a strong saline taste, and is said to be very efficacious in cases of goitre, dropsy, and rheumatism. Many people are in the habit of resorting to it from the neighbouring country annually in the months of May and June, December and January, to drink its water, both for the cure of these complaints, and to benefit by the salutary effect it is supposed generally to have on the constitution. A course of seven days is considered sufficient to affect the patient with its peculiar qualities. It is drank early in the morning and at meals, and has a slightly aperient quality. While drinking the water it is necessary, in the opinion of the natives, to observe a strict regimen, eating nothing but dry wheaten cakes kneaded with the water of the spring, and occasionally a few grains of black pepper. When the actual course of drinking is over, abstinence from salt in any form is enjoined for the seven following days. During the hot months it is visited chiefly by those who are affected by goitres. In the cold months it is found to be beneficial in scrofulous complaints, as well

as dropsy and rheumatism. When taken for rheumatic affections the body is said at first to swell and to subside after the water has been drunk the regulated time. Persons of wealth, and those who are not able to proceed to the spring, send for the water from a distance at the proper season, in order to go through a course of it. There are no habitations near the spring of a permanent description. Those who resort to it, generally amounting to two or three hundred at a time, erect temporary sheds for themselves while they remain. The soil is argillaceous, of a reddish blue tint. Though situated near the source of the *Lohand Khad*, there appears to be no connection between the spring and that rivulet, excepting in the rainy season, when the inundation is stated to impair the efficacy of the water, and neutralise its saline taste. The dimensions of the spring are about three feet broad and five deep. It is immediately on the frontier of the *Khalúr* and *Hándúr* territories. *Lohand Khad* forms the boundary between these two States, and flows into the *Satlaj* near *Kiralpúr* in the valley of *Makhowal* above the town of *Ropur*. No sacred character seems to be attached to the spring any more than the reverence with which the Hindus are accustomed to regard these phenomena of nature in all situations. It does not appear to be frequented by any pilgrims, who are led to it from religious motives alone. The *Khalúr* rája attempted some years ago to levy a tax on those who come to drink the water, but was diverted from his purpose by the advice of Captain MURRAY, to whose authority he was subject, for his possessions on the left bank of the *Satlaj*.

[The analysis of this and numerous other specimens of water will be given hereafter.—J. P.]

XIII.—*Proceedings of the Asiatic Society.*

Wednesday Evening, the 1st March, 1837.

W. H. MACNAGHTEN, Esq., Vice-President, in the chair.

Messrs. J. M. MILL and W. CRACROFT, proposed at the last meeting, were ballotted for, and duly elected Members of the Society.

H. TORRENS, Esq. was proposed by Mr. H. T. PRINSEP, seconded by Mr. MACNAGHTEN.

Col. HEZETA, proposed by Major TAYLOR, second by the Secretary.

Mr. W. STORM, proposed by Mr. BELL, seconded by Dr. WALLICH.

The Secretary proposed the Bishop of Cochin-China as an Honorary Member, seconded by Mr. W. H. MACNAGHTEN ;—referred to the Committee of Papers.

Read a letter from Captain H. HARKNESS, Secretary to the Royal Asiatic Society, acknowledging the receipt of oriental works published by the Society.

Read a letter from H. T. PRINSEP, Esq. Secretary to the Government of India, General Department, communicating the following extract from a Letter, No. 15, of 1836, from the Honorable the Court of Directors, dated the 14th September, 1836.

Para. 4. We learn from the *Journal of the Asiatic Society* that you have recently transferred the European portion of the Books of the Library of the College of Fort William to a Public Library in Calcutta, and the Oriental Works to the Asiatic Society of Bengal. We observe that this measure is made dependent upon our sanction, but as we are not aware of the reasons which recommended such a distribution, we refrain at present from issuing any directions upon the subject. With regard to the manuscripts, however, it is probable that the collection comprizes many copies of several of the works or duplicates of those previously in the possession of the Asiatic Society; and we direct that in all such cases two copies be forwarded to us without awaiting the receipt of our decision upon the arrangement which you have made for the distribution of the contents of the College Library. We, at the same time, desire that you cause to be prepared and forwarded to us by the first opportunity, a list of the several works, both European and Oriental, which are included in the arrangement now referred to.

Ordered,—that a list be prepared of the works included in the Court's requisition, and that the manuscripts in question be separated for transmission home through the Government.

The Secretary noted the sale of 2,000 Rupees Company's Paper with which the Printer's bill had been discharged.

Read a letter from Monsieur S. L. LAPORTE, Secretary to the Linnæan Society at *Bordeaux*, proposing a mutual correspondence and interchange of objects of natural history, which M. LAPORTE also offers to individual members from his own rich collection of Zoology.

Read a letter from Professor OTHM. FRANK of *Munich*, acknowledging the receipt of Oriental works published by the Society, and suggesting a list of some of the principal Sanscrit works which it would be desirable to undertake, on the completion of those now in hand.

Mr. E. V. IRWIN presented on the part of the author, a duplicate of the Chronological hypothesis signed VERITAS, which was received from *Van Dieman's Land* some months ago.

Library.

Dr. WALLICH presented a continuation of the Meteorological Register kept at the *Mauritius*, by M. JULES DESJARDINS.

Mr. D. O. DYAS SOMBRE presented a finely illuminated copy of the *Gulistân*, supposed to have been copied for the emperor AURANGZEB at *Bijipûr*, and lately belonging to the Begum SOMBRE's library.

Read a letter from J. BELL, Esq., Secretary to the Agricultural and Horticultural Society of Calcutta, forwarding for presentation a copy of the 3rd vol. of its Transactions.

Mr. JOHANNES AVDALL presented a map of *Armenia*, published at *Venice*, in 1778.

Notice Historique sur CHARLES TELFAIR, Esq. late President of the Société of Natural Histoire of Mauritius, by M. JULIEN DESJARDINS, Secretary to the Society—presented by the author.

Narrative of the wreck of the *Lady Munro* on the isle of *Amsterdam* in 1835, —by Dr. M'Cosh.

The following books were received from the booksellers:

Buckland's *Bridgwater Treatise, Geology and Mineralogy*, Vols. I. and II.

Lardner's *Cabinet Cyclopædia: Foreign Statesman*, Vol. 3rd.

The following works translated and published by Mr. LEWIS DA COSTA, were presented on his part by Mr. GEORGE HILL.

4 vols. 4to. *Elements of General History*, in Hindústani.

1 vol. ditto, *The Book of Common Prayer*, in Persian.

1 ditto, ditto, ditto, ditto, ditto, in Hindústani.

1 ditto, 8vo. ditto, ditto, ditto, ditto.

1 ditto, ditto, ditto, Abstract, ditto, ditto.

1 ditto, 4to. *The Penal Code*, in Persian.

1 ditto, ditto, *Regulations of Distress, Replevin and Sale, &c. of Lands*, do.

Museum.

Mr. DYAS SOMBRE presented to the Society, through Dr. BURLINI, the sword of her late Highness Begum SOMBRE, which she had worn from the year 1778 to the day of her death, and which was always kept by her bedside.

A collection of models of the human hand and foot in plaster of Paris, was presented on the part of Mr. C. W. SMITH.

Dr. WISE, Principal of Húghlí College, intimated that he was desirous of forming a museum in connection with the Húghlí College, and would be happy to receive any duplicates which the Society might be able to spare.

The following memorandum and proposition were submitted by Captain CUNNINGHAM:—

“Having been engaged during the past month in arranging the coins in the Cabinet of the Asiatic Society, I beg to submit to the Members of the Society the following observations upon their collection.

1. The collection of coins belonging to the Asiatic Society is so exceedingly meagre in every series of coins that would be of use to the historian and to the antiquary, and, at the same time, the individual specimens are so very poor in point of preservation, that the whole number of coins, which have been many years in collection, is scarcely deserving of the name of a Cabinet. To prove the meagreness of the collection, I need but to subjoin a list of the coins now in the Cabinet of the Society, in which the only really valuable specimen is a gold coin of MAHENDRA GUPTA.

List of the Coins in the Society's Cabinet, with their value.

	<i>Co.'s Rs.</i>
1 Gold coin of MAHENDRA GUPTA,	30
52 Dekkany gold hoons; some small, others minutely small,	60
7 Modern gold coins, chiefly Nipálese,	25
42 Indo-Scythic coins, including some rudely executed base gold coins,	50
26 Grecian, Arsakian and Sassanidan,	50
30 Músalmán and Nipálese silver coins,	30
227 Músalmán pice, all exceedingly common, except a Mahmud, ..	11
281 Dekkany pice—mostly modern and wanting inscriptions—nearly worthless,	5
115 small silver coins—punch marks and Varáha series, <i>all bad</i> ,	25
156 Chinese and Japanese,	5
25 Continental silver coins,	35
221 Roman coins,	120
	446

2. It is a fact, which must be known to most of the Members, that the Society's collection has not been increased during the last two or even three years by the addition of a single coin; or, in other words, that since private individuals have commenced the collection of coins, there have been few, if any, presented to the Society's Museum: most persons finding more pleasure in obliging a friend, by presenting to him any coins that they may pick up, than in displaying their public zeal by making a donation of them to the Society. I therefore beg to propose,—

As the Society's Cabinet has not been increased during the last three years by the donation of a single coin, and, as from the number of private individuals now collecting coins, there is but little likelihood of any donations being made for the future,—

That the Society do either increase their collection of coins by purchasing such as may offer from time to time, in order that their Cabinet, at present nearly valueless, may be useful to the Antiquary in the elucidation of doubtful points in history,—

Or, that the Society do sell their present incomplete collection to the highest bidder, and apply the proceeds either to furnishing the Museum with subjects more generally interesting or with furniture indispensably necessary."

The general opinion of the Meeting was adverse to the sale of the Society's Cabinet, its preservation being no source of expense ; and it was to be hoped opportunities might occur of rendering it more important and rich.

Mr. BELL submitted the following communication on the subject of the statistical inquiries suggested by the Royal Asiatic Society. The author was thanked by the Chairman for his offer to draw up a series of papers on staple products of India, and his note was ordered to be made over to the Statistical Committee.

TO JAMES PRINSEP, Esq.

Secretary, Asiatic Society.

SIR,

I have read with much satisfaction a pamphlet presented at the last Meeting of this Society, containing a highly interesting paper drawn up by the Right Honorable HOLT MACKENZIE, and JOHN FORBES ROYLE, Esq, " having for its object the formation of a Committee of Agriculture and Trade in relation to the East."

Conceiving, with advertence to the circular, which accompanied this pamphlet, from the Right Honorable Sir ALEXANDER JOHNSTON, Chairman of the Committee of Correspondence of the Royal Asiatic Society, that any information derived from authentic sources, however incomplete, will be acceptable, I feel desirous to become a humble laborer in a field in which I have, from my arrival in India (16 years) felt peculiar interest ; by submitting to the Society, for transmission to the Committee of Correspondence in England, if approved and deemed worthy, the results of information I have endeavoured faithfully to collect on the various productions of India.

It may be deemed presumption in me to propose to myself this task, in the face of so serious an imputation as is borne on the circular in question ; viz. " Few in India know what England requires ; and none of the lights of modern science having been applied to the agriculture of the former country (India), its productive powers have, as yet, been very imperfectly developed."

However undeniable this position is, I hope it may be conceded that there are those in India who are equally ready to impart the little information they do possess on the subject which is to engage the attention of the Committee of Correspondence, as the members of that Committee can possibly be to collect and arrange it.

Impressed with the importance of, and great advantage likely to be derived from, a share of public attention being paid to Statistics in this country, I endeavoured to draw notice to the project of forming a Society, by a communication which appeared in the *India Gazette* of the 15th or 16th of August, 1834, under the signature of " *A Friend to Improvement ;*" and I now rejoice that, although I failed in attracting attention to the scheme, the matter has been recently taken up by an able Committee of this Society, for the purpose of collecting and condensing statistical information generally.

I mention this circumstance only that I may not be thought to write for writing's sake, or to offer suggestions and make promises that are frequently made on the impulse of the moment when any new scheme is adopted, without due deliberation, or without thoroughly understanding the nature of the obligation. I have studied the subject long, and the longer my reflections are brought to bear on Indian Statistics, so much the greater is my desire to be of the least service in endeavoring to develop the resources of this country. And the only excuse I can venture to offer for having been so long a silent and useless observer, is the fact experience has taught me, that to *publish* information of utility at one's own expense in India, is a serious and losing affair ; while, to throw away information, or give it to those who do not appreciate it, is an equally unprofitable task.

A depository has now been opened for the reception of all useful communications by the formation of two Committees almost simultaneously, for the same purpose, and these at a distance of some 13,000 miles from each other,—a coin-

cidence which ought to convince the most sceptical of the demand for information, by no means scarce, but which, for the reasons I have stated, has been kept back by some, scattered to the winds by others, or carefully locked up in Government offices; and now in the year 1837, when any question in political economy is agitated, there is not in all India a book of general reference. What is the consequence? A question that in England would be settled in a month, requires in India at least a year to collect data on which to frame a report.

Now, the least advantage that may be expected from the labors of these Committees, will be a ready reference to all matters relating to political economy, and a sure guide to future legislation. Instead of groping in the dark, and seeking information from numerous and doubtful sources, it would be found carefully collected and condensed from the best authorities at one and the same point.

So grand a design could not be compassed by any one individual, even were his whole time and attention devoted to its accomplishment, and life ten times its present span. But in the hands of a Committee there is no reason to apprehend failure, and I think, that as soon as the objects of the Committee are sufficiently explained and made known, there are many who will willingly and zealously contribute all they can to the general fund.

Without taking up more of the Society's time, (and I beg pardon for this intrusion,) I may merely add that I shall be glad to undertake a series of essays on the principal productions of India. For example, I would begin with "*Cotton*," which, as Mr. HOLT MACKENZIE justly observes, "had become almost a necessary of life to a large proportion of our manufacturers; and it was fearful to think how much we depended for it on a single source of supply."

Without meaning to question the accuracy of this argument, I think I could, without much difficulty, shew, that the English manufacturer is not so entirely dependent on a single source, as it is generally supposed; for these deductions were drawn from what India *has* produced—not from what India *can* and *may* produce.

2. I would endeavour to point out the obstacles that have existed to improving an article now of such vast commercial importance; and how these obstacles can be best removed.

3. What the capabilities of this country are, supposing political events compelled the British manufacturer to depend for supplies of cotton on India alone.

4. The average prices of Indian cotton in the English market for the last twenty years, contrasted with those of American and other foreign grown cotton.

5. That India is capable, under ordinary care and encouragement, of maintaining a successful competition in the British market with any foreign country.

6. The probable quantity of land in India formerly occupied by cotton, which has been thrown out of cultivation, by the great influx of British Twist, and the extent to which this cultivation may be brought back by introducing a superior staple and improved mode of culture.

These remarks would be founded on sound calculations deduced from tabular statements, as well as actual experiment, and not on theoretical argumentation.

Cotton, as I have said, would be the subject of my first essay—which would be followed by a similar statistical view of our Indian *Silk* trade. *Sugar* would thirdly engage my attention, and so on until the list of staples had been completed.

From these I should descend into the hitherto less explored, though not less interesting regions of agriculture, and try to discover whether there are not many productions now left entirely to nature, that could not, with a little attention, be rescued from unmerited oblivion, and brought to form a valuable addition to the *Materia Medica*, and to the present list of exportable products.

I have the honor to be, &c.,

JOHN BELL.

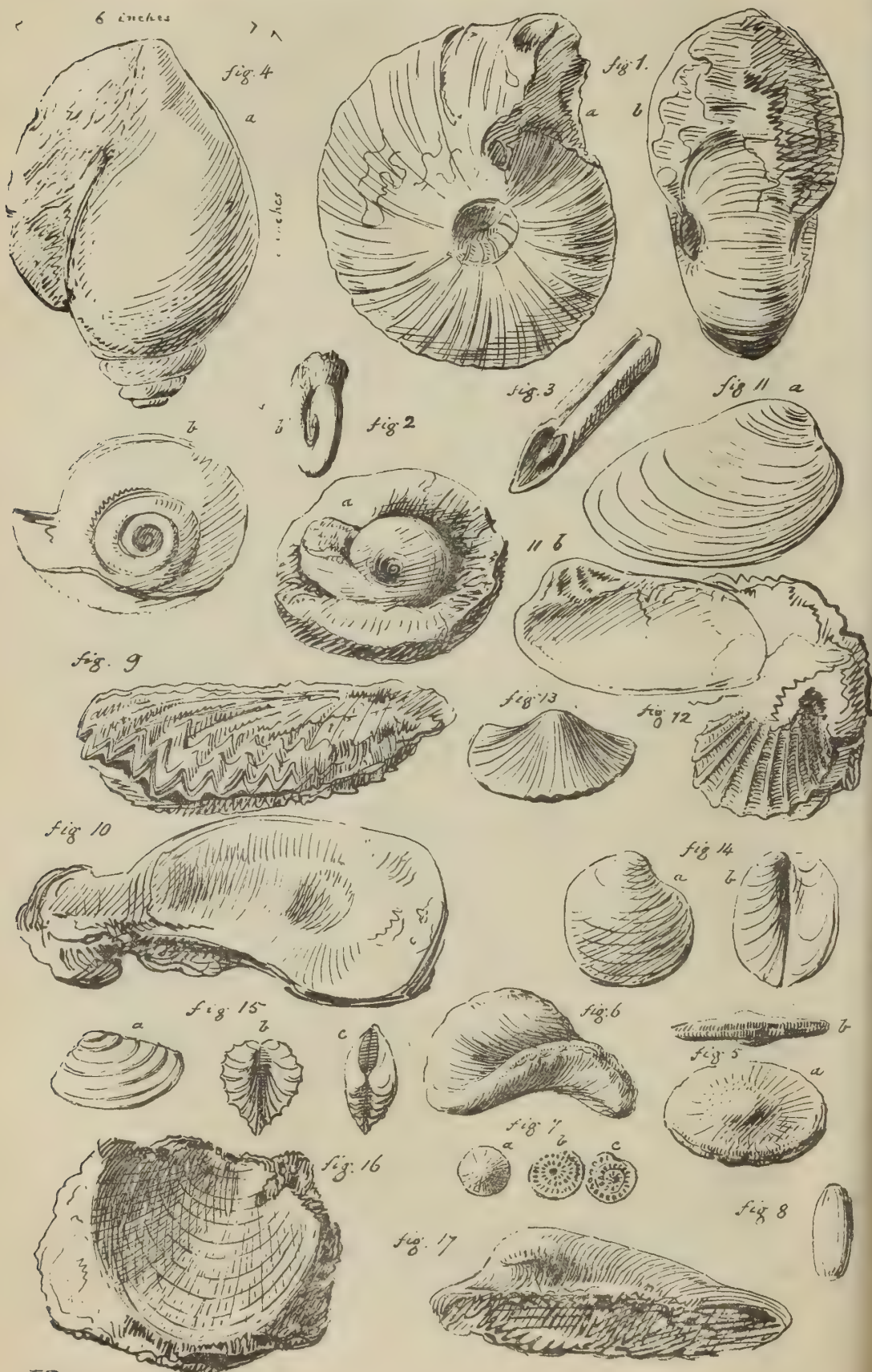
Calcutta, 23rd February, 1837.

Physical.

A very large stuffed specimen of the *Ornithorynchus paradoxus* was presented by Mr. E. V. IRWIN.

A letter from Lieutenant N. VICARY, dated *Sydney*, 28th October, 1836, announced his having dispatched, under care of Captain DAVIDSON, of the *Lady Kennaway*, a box containing a series of the fossil shells of *New South Wales*.

Fossil Shells of the Chari hills in Cutch.



Captain EDWARD H. HARRIS, Commodore on the *Surat* station, presented a box of fossil bones from the *Perim* island in the Gulf of *Cambay*, which he had procured after much difficulty expressly for the Society.

Among these are several very perfect bones—an alligator's head differing from that sent by Lieutenant FULLJAMES—a buffalo's horn—a very large vertebra—a well preserved mastodon's tooth in iron-sand conglomerate—and numerous other fragments.

Captain A. BURNES' series of the geology and fossil conchology of the *Chari* range in *Cutch*, arrived since last meeting, was laid on the table.

"These specimens" (Captain BURNES writes) "are duplicates of what I forwarded to the Geological Society of London about six months ago. Professor LYELL had cursorily looked over them, and a friend writes of some others which had been sent from the same spot: 'Mr. LONSDALE is decidedly of opinion that the fossils are much more different specifically from European secondary fossils, than those received from *Cutch* a few years ago.'"

The principal varieties of these shells, are sketched in the accompanying plate, (ix.) but it is impossible, from the imperfection of most of them in essential parts, to name them with accuracy.

From the *Chari* hills, fig. 4, a large buccinum (?) 8 inches long;—ammonites of several species (1, 2,) enclosed in wacken balls,—sometimes mineralized with a fine red ochre; belemnites, 3, occurring with and inclosed in bivalves 11, 12, 14;—ostrea, two varieties, 9 and 10. From *Wagne*, east of *Bhooj*, the same shelly conglomerate, containing a variety of bivalves, 11, 15 and 16; pecten 16 and 17 (area?) with large ammonites, &c. From *Liseput*, the principal shells are nummulites 5, 6, 7,—some curiously curved in a saddle form;—and small egg-shaped radiata, 9, pentacrinites?

The geological matrix of the *Chari* and *Wagne* specimens is a yellow ochreous limestone similar to the lithographic stone from *Jesulmir*: one specimen has much the appearance of oolite. Also crystallized sulphate of lime, vesicular basalt with zeolites and green earth, septarium iron clay, iron sand, and fossil wood.

From *Hyderabad*; gypsum cryst. compact sandstone and lias (?).

Wara Vechia; granular granite, passing into sandstone basalt—decomposed felspar.

Balmer, south of *Jesulmir*; sienite lithomargic conglomerate, white porcelain clay, red ochre balls.

Liseput; light clayey limestone—and porous basalt.

Paccham island; sandstone and coarse pebbly conglomerate, yellow limestone and gypsum, as before.

Naitra; a basaltic grit.

Tramlow, six miles N. W. of *Bhooj*; iron pyrites.

Toomra; porous red iron clay.

Angier; hillocks of wacken pebbly conglomerate, same as from *Mujjul*; and close-grained basalt from a cone 200 feet high.

Dharniyo; iron veins in sand, worked as an ore; fossil trunk of a tree found in the soil.

Mhur; lithomarge, yellow clay, iron conglomerate.

Badra; continuation of the yellow limestone, with pectens and cytheria?—(16).

Jeradar; low hillocks of a porous light grey volcanic tuffa.

The volcanic field of this province deserves a minute examination—and it is much to be regretted that Captain BURNES did not favor the Society with sections and maps of the country to elucidate his specimens. This enterprising officer is again employed on a mission to *Sinde*, whence we shall doubtless soon hear of fresh researches and discoveries.

Dr. PEARSON read a memorandum on the *gaur* and *gayal*, in justification of the name given to the specimen of the former in the Society's museum.

[This note and Mr. EVAN's, read at the last meeting, will be published in our next.—ED.]

XIV.—Meteorological Register.

Meteorological Register, kept at the Assay Office, Calcutta, for the Month of February, 1837.

Day of the Month.	Observations at 10 A. M.						Observations at 4 P. M.						Temperature of water at 10 A. M.		Rain.	Wind.		Weather.	
	Old Stand. Barometer at 32°.	New Stand. Barometer.	Thermometer in air.	Depression of wet-bulb.	Do. by Les.	Dew-point.	Hair Hygrometer.	Centesimal tension of vapour by wet-bulb.	Do. by hair Hygrometer.	Calculated Humidity.	River.	Well.				10 A. M.	4 P. M.	Morning.	Evening.
1	30.061	30.140	69.9	1.6	2.1		91	90	80				71.2	73.7		S. W.	S. W.	cum. str.	fine.
2	.017	.026	69.4	1.7	2.0		91	90	80				67.3	72.6		S. W.	S. W.	cumuli.	do
3	.094	.066	72.1	2.7	3.2		90	85	78				72.3	73.7		O.	O.	cir. cum.	do
4	.119	.085	73.3	3.9	5.0		87	80	72				68.7	73.6		N.	O.	cum. str.	do
5	.030	.29	93.4	71.9	11.6	3.2	90	65	78							S.	S.	cumuli.	do
6	.087	.016	74.5	6.9	7.8		82	65	63							S.	S.	cum. str.	do
7	.07	.07	73.9	5.3	5.3		89	77	76				71.7	72.3		S. W.	S. W.	cum. str.	do
8	.070	.026	73.5	5.8	7.2		82	70	63				72.3	74.3		S. W.	S. W.	cum. str.	do
9	.034	.006	75.6	9.3	11.5		77	55	54				72.9	73.6		S. W.	S. W.	cum. str.	do
10	.000	.29	95.7	76.7	5.2	5.7	85	75	63							S.	S.	cumuli.	do
11	.29	.909	.861	77.6	6.6	6.0	84	70	66							S.	S.	cumuli.	do
12	.845	.901	76.6	4.4	5.0		88	80	74							S.	S.	cumuli.	do
13	.949	.940	76.5	4.8	4.6		89	75	76							S.	S.	cumuli.	do
14	30.101	30.101	69.5	9.9	3.3		74	47	49							S.	S.	cumuli.	do
15	.136	.130	69.2	11.6	12.8		68	40	41							S.	S.	cumuli.	do
16	.034	.045	69.7	8.0	7.0		79	57	57							S.	S.	cumuli.	do
17	.087	.083	72.2	6.1	7.3		83	67	64							S.	S.	cumuli.	do
18	.123	.099	73.8	4.1	3.0		89	80	76							S.	S.	cumuli.	do
19	.052	.027	74.7	2.3	4.7		91	87	80							S.	S.	cumuli.	do
20	.075	.049	76.0	4.3	4.7		89	80	76							S.	S.	cumuli.	do
21	.136	.114	76.7	10.4	10.0		76	62	52							S.	S.	cumuli.	do
22	.148	.129	73.5	14.3	14.6		67	33	40							S.	S.	cumuli.	do
23	.043	.068	72.4	13.8	15.0		69	35	42							S.	S.	cumuli.	do
24	.03	.003	76.4	12.7			68	42	41							S.	S.	cumuli.	do
25	.29	.331	29.907	76.0	5.6	6.5	70	72	70							S.	S.	cumuli.	do
26	.86	.863	77.9	13.1	15.5	50.0	69	42	42							S.	S.	cumuli.	do
27	.921	.907	77.3	12.4	13.7	44	68	45	49							S.	S.	cumuli.	do
28	.970	.959	79.7	6.1	8.2		85	68	63							S.	S.	cumuli.	do
Mean	30.032	30.010	74.0	7.2	7.3		82	64	63				71.5	73.0					

The barometrical differences at 10 and 4 are .022 and .046. In January they were .024 and .058. From the 20th the old hygrometer, supplied with new hair and properly verified in its scale, is registered.

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I.—*Remarks on M. SCHLEGEL's objections to the restored editions of the Alif Leilah, or Arabian Nights' Entertainments. By HENRY TORRENS, Esq. B. A. and of the Inner Temple, B. C. S.*

At the time of the purchase of the Macan MS. by Mr. BROWNLOW, several of the most distinguished Arabic scholars in this part of India registered in this journal their opinion of its value. The style of the language was declared to be singularly pure, the narrative spirited and graphic, and the collection of stories enriched with many tales either perfectly new to European readers, or else given in a form very different from that under which they have been hitherto known, garbled and abridged by the carelessness of translators, or by imperfection of the MSS. whence they were translated. Since the publication of the opinions above alluded to, a letter addressed by Mons. DE SCHLEGEL to Mons. le Baron DE SACY, upon the subject of the thousand and one nights, has excited some attention in *Calcutta*, with reference especially to the supposed excellence of the Macan MS. Mons. DE SCHLEGEL has asserted of these celebrated tales generally, that many, if not most of them, are plagiarized from a Sanscrit original, and that others are "intercalated" stories, taking their rise in neither India nor Arabia. Hence he concludes that the greater the number of tales, the more frequent the plagiaries and intercalations; and such being the case, "we may be assured," he says, "that the most voluminous edition of the thousand and one nights will be the worst." Without stopping to weigh the soundness of this line of argument, based on a *petitio principii*, and inducing a most inconclusive conclusion, it is worth while (the attack being so sweeping) to assume the validity of this reasoning, and prove the

strength of Mons. DE SCHLEGEL's position by examining the instances with which he supports it. If his conclusion be a true one, then the Macan MS. must be the worst instead of the best form of the thousand and one nights hitherto discovered, for it is "the most voluminous:" the first five nights in this MS. for instance, contain the matter of the first seventeen nights of GALLAND's edition, and an additional tale, entirely new, besides. In deference to so celebrated a literatist as Mons. SCHLEGEL, it is proper to consider what he advances attentively, and, keeping strictly to the letter of his arguments, to refute them, if possible, by their own assertions. It will not be perhaps difficult to show that the critic's reasons for the adoption of the above opinion are remarkable rather for ingenuity than soundness, or to prove by demonstration that the new tales of a "most voluminous" edition may bear not only the stamp of originality, but also strong internal evidence that they are indigenous to *Arabia*.

Mons. DESCHLEGEL supposes that the tales of the thousand and one nights could never have been popular with Mussulmans, owing to the multitude of supernatural beings of different kinds crowded into them, there being, he says, "scarcely another step hence to the doctrine of polytheism." In expressing this opinion, Mons. DE S. has entirely forgotten the extreme superstition of the followers of the Prophet with respect to the existence of *jinn*s, (both believers and accursed,) *ghols*, *ufreets*, and many other classes of imaginary beings, each distinguished by some peculiarity of character and habits. These are introduced in multitudes in the tales in accordance with the ordinary Arab superstitions which obtain most credit with the most bigoted Mussulmans. They are introduced with most liberality in some of the tales abounding especially in the expressions of religious feeling, and the believing spirits invariably make use of the ordinary devotional phrases so constantly in the mouth of an Arab. They are introduced not on the *dignus vindice nodus* principle as what Mons. DE S. calls "semi-deities;" they take part in the action of the story, and from their stupidity are the butts of the superior intelligence of men. So far from showing marks of transmutation to an Arab shape from a heathen original, they appear to be themselves the surest proofs of the Arabian extraction of the stories they figure in. Mons. DE S.'s determination to prove the Indian origin of many of the tales has led him to the singular supposition that a people whose manners they faithfully depict, and whose superstitions they embody, that a people whose very language bears testimony to their passion for fiction, (the same word being employed in Arabic

to express *conversation* and *the relation of stories*) would neglect such tales even though indigenous to their fatherland because the excess of supernatural agency in them savoured of "polytheism!"

With reference, however, to the objection by Mons. DE S. on the point of plagiarised tales, and his attempt to prove the plagiary by anachronisms, an expression in the story of the fisherman and the jinn in the Macan MS. may be cited, not inopportunately, as giving some index to the date at which it was originally composed. The jinn is described as having been shut in a jar for "*one thousand and eight hundred years*" from the time of SOLOMON, the son of DAVID. Now this tale with one of Mons. DE S.'s "*semi-deities*" in it, whom he supposes importations into *Arabia* from an idolatrous source, and abominations in the eyes of orthodox Mussulmans, was by the above account composed during the third century of the Hejira, at the very height of Mussulman orthodoxy.

Arguing on the supposition of the transmutation of most of the tales from heathen originals, Mons. DE S. proceeds to point out how the Koran might have been introduced instead of the Vedas, and the name of HAROUN UL RASHEED made to supersede that of VICRAMADITYA; and with reference to the introduction of that Khalif's name, he cites the expression in the commencement of the thousand and one nights, "the chronicles of the Sassanians" as constituting a palpable anachronism. Now the expression quoted does not exist in the Macan MS.: the words are *a king among kings descended from the dynasty of Sassan*; and the mention of Islamism among descendants from Sassanian princes does not appear to be in any way anachronous. Again, Mons. DE S. has ingeniously discovered in the four colors of the fish, (vide the tale of the fisherman) who in their natural shape were a population of Christians, Jews, Mussulmans, and Idolaters, a type of the four castes of the Hindoos; for, says he, "the metamorphosis in the original was brought about by a *jeu de mots*; *varna* in the Sanscrit signifying *colour* as well as *caste*." This will hardly hold good when we look to the Arabic wherein special mention is made of the different *religions* of the men transmuted into fish of different colors. Now the Hindus have, it is true, four principal castes, but their *religion* is a common one. Another instance on which much stress is laid by Mons. DE S. of the internal evidence of an Indian extraction offered by the tales is cited from the tale of the king and the physician. The position is this. 1. The king is poisoned by a MS. 2. Some Indian MS. are saturated with a solution of orpiment to protect them from insects. 3. No other MSS. are

so saturated. 4. This was, therefore, an Indian MS. thus prepared. 5. This was, therefore, an Indian king. 6. This was, therefore, an Indian story. The answer to this somewhat illogical sortie is—1. That an Indian king turning over an Indian MS. would not, as did the king in the story, have exposed himself to the chance of being poisoned. 2. That the supposition of the MS. being an ordinary Indian MS. would utterly take away the moral of the tale. 3. That (as the tale tells us) the supposed MS. was no MS. at all, for “the king turned over six leaves, and looked upon them, *and found nothing written upon them*,” which induces a further search into the book, and a more certain death in consequence. But perhaps a literal translation of the latter part of the story from the Arabic of the Macan MS. will best show the futility of Mons. DE S.’s argument, the moral of the tale being the retribution inflicted by the victim on the oppressor by means of the knowledge he is in the commencement said to possess of “all modes of healing, *and of hurting*.”

Extract from the Story of the Physician and the King.

“And after this the executioner stepped forward, and rolled his eyes fiercely, and drew his sword, and said, ‘Give the word;’ and the physician wept, and said to the king, ‘Spare me, spare me, for the love of God, and kill me not, or God will kill thee,’ and commenced extemporaneously reciting,

‘If I live no man I’ll profit; if I perish curse for me
All the good, when I’m no more, with every curse of infamy.
‘I was kindly; others cruel; they were prosperous; I lost all;
And benevolence hath made me master of a ruined hall*.’

Then said the physician to the king, ‘This is the return I meet from you; you return me the reward of the crocodile.’ Then said the king, ‘And what is the tale of the crocodile?’ The physician replied, ‘It is not possible for me to tell it, and I in this state; and as God is with you, spare me as God will spare you.’ So then the physician wept with exceeding weeping, and certain of the king’s private attendants arose, and said, ‘Oh! king, grant us the life of this physician, for we have not seen him commit one fault towards you, and we have not seen him save as healing you from your disease, which baffled all physicians and men of science.’ Then said the king to them, ‘You know not the cause of my putting to death this physician and this it is, that if I spare him, surely I myself am doomed

اذا عشت لم انصَحْ وان مت فالىعدو*
ذوى البضم من بعدى بكل لسان
نصحت فلم افلح و خانوا فافلحوا
واورثني نصحى لدا ر هو ان

to death without a doubt, for by healing me of the disease which I had by something held in the hand, surely it is possible he may slay me with something given me to smell ; hence I fear lest he kill me, and take a bribe for doing it ; since he is a spy, and has come hither for no end but to compass my death ; so there is no help for it,—die he must, and after that I shall be assured of my own life.’ Then said the physician, ‘ Spare me, spare me, for the love of God, and kill me not, or God will kill you.’ Now when the physician, Oh ufreet, knew for certain that the king would put him to death without a doubt, he said to him, ‘ Oh king, if there is no help for it, but that I must die, then grant me a space that I may go down to my house, and appoint my people and my kindred where they may bury me, and that I may relieve my soul from its obligations, and distribute my books of medicine. And I have a book, rarest of the rare ; I offer it to you as an offering ; keep it as treasure in your treasury.’ Then said the king to the physician, ‘ What is in this book ?’ He replied, ‘ Things countless beyond the power of computation ; and as a small portion of the secrets that are in it, if you directly after you cut off my head open three leaves of it, and read three lines of the page on your left hand, then the head will speak with you, and give you answers to every question which you ask it.’ So the king wondered with exceeding wonder and shrugged with satisfaction and said, ‘ Oh physician, what ! directly I cut off your head will you speak to me ?’ He answered, ‘ Even so, O king.’ So replied the king, ‘ This is a strange matter,’ and forthwith sent him away closely surrounded by a guard ; and the physician went down to his house, and performed all his obligations on that day, and on the next day he went up to the king’s hall of audience ; and the umeers and ministers and chamberlains and deputies in office and the supporters of the state went up also, the whole of them, and the presence chamber was as a flower bed of the garden : and lo ! the physician came up into the presence chamber and stood before the king surrounded by guards, and with him he had an old volume, and a bottle for holding antimony, and in it a powder : and he sat down and said, ‘ Give me a charger,’ and they gave him a charger ; and he poured the powder upon it, and spread it out, and said, ‘ Oh king, take this book and open it not until you have cut off my head, and immediately you have cut it off, place it on this charger, and order its being thrown upon that powder, and directly you have done that, the blood will stop flowing ; then open the book.’ So the king gave orders for the cutting off the physician’s head and took the book ; and the executioner arose, and struck the physician’s neck with the sword, and placed the head in the middle of the charger, and threw it upon the powder, then the blood stopped flowing, and the physician Dooban opened his eyes, and said, ‘ Open the book, O king ;’ so the king opened the book, and found the leaves stuck together, so he put his finger to his mouth, and moistened it with his tongue and opened the first leaf, and the second, and the third, and each leaf did not open but with much trouble ; so the king turned over six leaves and looked upon them, and found nothing written upon them.

Then said the king, ‘ O physician, there is nothing written upon these ;’ and the physician replied, ‘ Turn over more still ;’ so he turned over three more, and there had but a short space elapsed before the drugs penetrated his system at one time and on the instant, for the book was poisoned, and forthwith the king began to be convulsed, and cried out, and said, ‘ The poison has penetrated me,’ and the head of the physician Dooban began to repeat extemporaneously,

‘ They issued savage mandates, but not long
Survived they in their cruelty, for lo !
’Twas but a little, and the mandate was not.
Had they done justice, justice were done them—
But they did ill, and evil was their portion ;
And fortune turned against them, strongly armed
With acts of woe and trouble. Thus they passed hence,
And the mute eloquence of their condition
Repeated to them, “ This is your reward.—
Blame not the retribution ! ” ’

(So goes the tale) ; so when the physician’s head finished its speech, the king fell down on the instant a dead corpse.”

The above extract will give some idea of the literal style of a tale so popular under GALLAND’s paraphrase, but expressed in the Macan MS. (as will be observed on comparison) much more in detail, and more graphically.

There remains now but to allude to Mons. DE SCHLEGEL’s remaining assertion, that the more voluminous the edition of the thousand and one nights the worse will it be. The best reply to this will be the citation of a new tale forming part of the recital of the fourth night in the Macan MS. It offers a fair occasion for the formation of a judgment on Mons. DE S.’s sweeping assertion, for it has never been found save in this voluminous edition, and is now translated of course for the first time.

The Story of the King Sundabad.

“ It is said that there was a king among the kings of Fars, who was fond of sport, and of exercise, and of hunting, and of trapping game, and he had always a certain hawk near him, which he let not be separated from him by night nor by day ; and all night long he had it sitting on his hand, and whenever he rose up to hunt he took the bird with him. And he made for it a cup of gold hung round its neck, to give it to drink out of. Now it fell out as the king was sitting, behold the chief falconer began to say, ‘ Oh ! king of the age, these are the days for going forth to hunt.’ Then the king ordered that they should set forth, and took the hawk on his hand ; and they journeyed till they arrived at an open plain, and they

struck out the circle for the battu, and forthwith a doe antelope came within the circle. Then said the king, 'Over whose head the antelope shall leap and get away, that man will I kill.' Then they narrowed the circle of the battu about it, and, behold, the antelope came before the king's station and stood firm on its hind legs, and gathered in its fore feet to its breast, as if about to kiss the earth before the king; so the king bowed his head in acknowledgment to the antelope; then it bounded over his head, and took the way of the desert. Now it happened that the king saw his attendants winking and pointing at him, so he said, 'Ho! vuzeer, what are my attendants saying?' The vuzeer replied, 'They say you proclaimed that over the head of whomsoever the antelope should leap, that man shall be put to death.' Then said the king, 'By the life of my head, surely I will follow her up till I reach her;' so the king set forth in pursuit of the antelope, and gave not over following her till she reached a hill among the mountains. Then the antelope made as she would cross a ravine, so the king cast off his hawk at her; and the bird drove its talons into her eyes, to blind and bewilder her, and the king threw his mace at her and struck her so as to roll her over. Then he dismounted, and cut her throat and flayed her, and hung the carcass to the pummel of his saddle. Now it was the time for the mid-day sleep, and the plain was parched and dry, nor was water to be met with in it; and the king was thirsty, and his horse also; so he went about searching for water, and he saw a tree dropping water, as it were clarified butter. Now the king wore gloves of the hide of a beast of prey, and he took the cup from the hawk's neck, and filled it with that water, and set down the water before the bird, and lo! the hawk struck the cup with its talons, and overturned it. So the king took the cup a second time, and caught the drops of water as they were falling until he filled it, for he thought the hawk was thirsty; so he set the cup before it, but she struck it with her talons and upset it. Then the king was annoyed with the hawk, and got up a third time, and filled the cup, and put it before his horse, but the hawk overturned it with its wings; then said the king, 'The Lord take you, you unluckiest of birds! you keep me from drinking, and keep yourself from drinking, and keep the horse from drinking!' So he struck the hawk with his sword, and cut off its wing, but the hawk began lifting up its head, and saying by signs, 'Look at what is beneath the tree.' Then the king lifted up his eyes, and saw below the tree a young snake, a poisonous one, and this which was dropping from the tree was its poison. Then the king repented him of having cut off the hawk's wing, and arose and mounted his horse and went, taking with him the antelope's carcass until he arrived at his tent within the hour, and he gave the antelope to the cook, and said to him, 'Take, and make this ready.' So the king sat down in his chair, and the hawk on his hand, and the bird struggled gaspingly, and died. Then the king cried out, wailing and lamenting for having slain the hawk, and it was the cause of saving him from death! And this is what occurred in the story of the king *Sundabad*."

The above short tale is valuable as answering more than one of Mons. DE S.'s arguments. It contains instances of the same power of description and habit of close observation which form the principal charm of the known tales. Any one who has been in the custom of watching the antelope, or observing the natural motions of the hawk, will recognise the action of the one and the other faithfully described in the attitudes common to them when scared or excited. The mention too of *hawking the antelope* proves the story to be purely Arabian: no other nation but the Arab using the hawk against large animals. The Persian hawks the hare, but only the Arab flies his bird at the antelope. Thus then, so far from the additions to the "most voluminous" edition being the cause of its deterioration, as unnaturally adapted from foreign sources to Arab manners, the very first of those additions is found to be a spirited tale describing graphically and naturally the progress of passion, (excited originally by a trifle, and ending in the blind commission of an act of ingratitude) and giving indisputable evidence of an Arab origin.

The judgment of those infinitely better qualified than myself to pronounce on the merits of the Macan MS. is, it is submitted, fully supported by the result of this brief inquiry. The translation having been made literally from the Arabic, this will account for a singularity of expression which may be displeasing to most readers. In undertaking to introduce the new tales to the English reader, I would be glad to avail myself of opinions upon the expediency of holding to this style of translation, or adopting one more consonant with European idioms.

[NOTE.—As far as we may be allowed to be capable of judging on such a point, we think our correspondent's style of expression is particularly felicitous and suitable to the work, of which we are happy to see this public acknowledgment of his having undertaken the translation.

We had rather that the stories should retain the terseness, the simplicity, the very turns of expression as well as of idea so peculiar to the language as to the literature of Arabia, than that they should be dressed up in the uncongenial disguise of modern idiom however elegant. There is at the same time nothing, in the style adopted, repugnant to our ears, already familiar from childhood with the oriental phraseology of the translated scriptures:—but, on the contrary, the total foreignness and antiquity of the incidents and reflections, and the admixture of the supernatural, now discarded from our own works of fiction, seem to acquire support and harmony from a corresponding style of diction. We need only refer the reader to the parallel passages quoted in the *Minute on the Macan MS.* by Dr. MILL (vol. V. page 598) to prove the great superiority of tone and keeping, as an artist would say, in the strict dry nervous copy of the original, as contrasted with the smoothened, mannerized, and totally Frenchified, though in many respects pleasing, picture of M. TREBUTIEN.—ED.]

II.—*Journal of Captain C. M. WADE's voyage from Lodiana to Mithankot by the river Satlaj, on his Mission to Lahór and Baháwulpur in 1832-33. By Lieut. F. MACKESON, 14th Regt. N. I.*

On the 8th December, after some days spent in constructing temporary locks on the *nala*, and here and there widening and deepening its channel, the boats arrived at its mouth and entered the river *Satlaj* about a mile above the village of *Wallipura*.

Our fleet consisted of eight boats, three built by Captain WADE at *Lodiana* for the accommodation of the mission, after the model of those used on the river *Ravi*; one of a similar construction, the property of *Lodiana* merchants, also built at *Lodiana*; two common *Satlaj* ferry boats, belonging to *Lodiana* baniahs; and two small boats with oars, for the convenience of communicating with the shore and taking the bearings of the reaches of the river.

The *Ravi* boats are flat-bottomed, and nearly square fore and aft, with the prow and stern slightly raised: those built at *Lodiana* varied in length from fifty to fifty-five feet, and in breadth from eleven to twelve feet, having a depth of two and a half to two and three quarters feet. They drew, when not laden, from ten to fifteen inches water, and going down the stream in the actual state of the river were capable of carrying from two hundred and fifty to three hundred maunds.

The ferry boats in use in this part of the *Satlaj* are not much better than rafts, from which they differ little in appearance. They are very broad at the stern, and terminate in a point at the prow, which is carried up high into the air. Although calculated for no other purpose, they are well adapted to the transport of hackeries and cattle across the river; the side planks being low, laden hackeries are easily lifted over them into the boats; or the ground at the ghât is raised to a level with them, and the time lost in embarkation and disembarkation is comparatively trifling. Accidents to cattle can seldom occur, as they are able to step into the boats without difficulty, and no space being lost in cross beams or partitions, a great number can be accommodated at a time.

Wallipura is a small village, containing from thirty to forty mud hovels: it belongs to Sirdar FATEH SINGH ALAWALLA. We remained there on the 9th in expectation of the arrival of a party of Mahá-rája RANJI'T SINGH's irregular horse, which was to escort the boats along the left bank of the river.

The breadth of the river at this point, where not intersected by sand banks, measured two hundred and fifty yards. The deep channel

under the left banks gave from fourteen to fifteen feet water, which decreased to seven and six feet within twenty yards of the shore, beyond which it was extremely shallow.

From *Ropur*, where the *Satlaj* enters the plains to where it is joined by the *Lodiana nala*, it may be said to have run a course of near fifty miles. At *Ropur* its bed consists of large smooth pebbles mixed with a slimy mud; after leaving that place it runs over a loose sandy soil through a flat country, and during this part of its course the present left bank is generally low. There is a high bank passing close under *Chamkaur*, *Balolpur*, *Máchiwára kum*, and *Lodiana*, which points out the old channel. This is now pretty nearly the course of the small *nala*, which rises in the marshy ground between *Ropur* and *Chamkaur*, and enters the *Satlaj* a little above *Wallipura*. The slip of land between it and the present channel of the *Satlaj* varies in breadth from eight to two miles and less: it is low and much intersected with *nalas*, most of which are without water during the greater part of the year; but their beds and banks retain a degree of moisture when the rest of the country is parched and dried up, and afford an abundant supply of grass of a good quality within a convenient distance from the cantonment of the troops.

The right bank from *Ropur* downwards is generally high and the face of the country elevated, sloping gradually from the hills, which recede northwards, towards the river, near which it is much broken and cut up by ravines. On both sides the country is tolerably open and free from heavy jungle, but on the right sparingly cultivated. Water is found much nearer the surface on the left than on the right bank, and cultivation is more uniform. There is a tract of grass jungle on both sides of the river near *Chamkaur*: it forms excellent pasture for buffaloes which are numerous and particularly large. Wild hogs are sometimes found in this vicinity: they come from the hills on the opposite side, and swim the river at night to feed on the sugar-cane.

The tamarisk jungle is seen in small quantities near the river at *Talore*, and even higher up, but never grows to any considerable height, and is thin and straggling: the soil left by the overflowing of the river in which it chiefly grows, does not appear to have acquired that richness which it is said to possess at a greater distance from the river's source.

During the cold weather when at its lowest, the *Satlaj* is fordable in many places between *Ropur* and *Lodiana*, and even to its junction with the *Béas*; but it can no where be forded in a direct line; it is necessary to follow the shoals or sand banks, which make the passage

circuitous and tedious; and owing to the numerous quicksands, it must always be considered an affair of danger for bodies of troops to attempt. As the sands are constantly shifting, the fords also are liable to change.

I am not aware of the exact number of boats between *Ropur* and *Lodiana*. The principal ghâts or ferries are those opposite to *Râhon*, *Mâchiwâra* and *Fabor*; the two first lie in the route from *Jâgadri* on the *Jumna* to *Amritsir*, and a considerable traffic passes by them. There may be sixteen boats at *Râhon* and eight at *Mâchiwâra*. The ghât at *Fabor* has upwards of fourteen, and is also much frequented, lying in the direct route from *Ambâla* through *Lodiana* to *Amritsir* or *Lahôr*. There is also a ghât at *Kirâna*, which may have eight boats, and another near *Ropur* which has four. Besides the boats at the ghâts there are a few scattered here and there at the different villages on the banks of the river belonging to the zemindars, and used by them for the convenience of crossing to and fro, and transporting grain and firewood.

On the morning of the 10th we left *Wallipura*. The river was swollen and muddy from rain, which had fallen higher up during the two previous days, and which somewhat increased the rapidity of the current. As near as I could judge from the rate at which people were walking on the bank, it must have averaged near three miles in the hour. Our boats kept chiefly in the shallow water for the convenience of using the pole to push them along; they are furnished with oars, but the *Satlaj* and *Ravi* boatmen seem to be unaccustomed to their use; and the oars are so very clumsy and unwieldy, that they would require at least four persons to each to serve them with effect.

Leaving *Wallipura* the deep channel runs under the left bank for upwards of a mile, when the river separates into three branches; the main one, which we followed, running under the right bank to *Dhâdhûra*, near which the three branches again unite and form an uninterrupted channel 400 yards broad. On our left we passed the ghât of *Talwandi*, where there were ten boats similar to those already described. Judging from the number of people we saw crossing, it must be a considerable thoroughfare; a small traffic passes by this route from *Jhajraon* and the *Mûlk Rohie* to *Doab bist Jalimdar*.

After passing *Talwandi* the deep channel again crosses over to the left bank, and on approaching near to *Bhundri*, makes a long sweep in towards the left, running close under that village.

The country on our left to-day was low and uncultivated, subject to inundation, and consisted chiefly of pasture land; that on our

right appeared high. There were fields of stubble and patches covered with the cotton plant. We passed one inlet from the river on the right, and a *jharí* jungle extending a short distance on the bank, but low and thin. We stopped at *Bhundri*, estimated distance from *Wallipura* four kos. This village, like the rest which we passed to-day, is hardly deserving of remark: it contains a small *paka* mosque, which is in much danger of being destroyed by the river. The dwelling houses, of which there may be 100, are all of mud, either thatched or with *kacha* terraced roofs. It has two *baniahs'* shops. The inhabitants are chiefly Mussalman zemindars. *Bhundri* and *Khánpur*, *Wazir ke Gaur*, villages in the neighbourhood, are inhabited by a caste of Putial Rajpúts, who claim descent from Rájás HOSPÁL and JAGPÁL. Their ancestors were converted to Islamism some five centuries ago by HAZRAT SHÁH KATÁL CHISHTI, one of the descendants of HAZRAT SHEIKH FARID, the famous saint of *Pák Patan*. His relics are deposited somewhere between the villages of *Talwára* and *Sheikh Chishti* under the shade of a grove of *bábul* trees: there is his *khángáh* or shrine, which the surrounding inhabitants visit in great crowds on certain days of the year to pay him the honors due to a saint.

The Patiáls retain many of their Hindu customs, especially the ceremonials at births and marriages, in which the Brahmin priest often assists and claims the usual fees.

They intermarry only among themselves, it being thought a disgrace to give their daughters in marriage to a person of different caste or descent.

The Jats, Gujars, Harnis, Arráins, who chiefly compose the peasantry of the country from above *Lodiana* down to *Firozpur*, all claim descent more or less remote from a Rajpút stock. They are generally ill-looking, tall and thin, but with large bones and sinewy limbs. The usual dress of the better sort is a blue-colored *dhóti*, tied somewhat differently from the common mode, reaching down nearly to the ankles, and seeming to embarrass their motions in walking. With this they wear a large cotton *chadder* or sheet, which is either flung in double folds over the shoulder and across the breast, or used to cover the whole body; it is exchanged for a blanket in the cold weather. The turban is of cotton, either plain or dyed blue, and tied sometimes Sikh fashion in a high *topí*, and sometimes in loose folds, leaving great part of the head uncovered. The coarse cotton cloth which forms their ordinary wear is a home manufacture. The poorer among them are little troubled with clothing of any description.

Their women share in the labour of the field, and perform all the menial and laborious offices about the house. They fetch water from the wells, prepare the cakes of cow-dung (*opla*) for fuel, and cleanse and plaister their mud hovels and *chabútras*, while the husbands are smoking their pipes, or employed in making rope of the *múnjh* grass and repairing their implements of husbandry. Disputes among them are referred to a *panch* or council of the Chaudries (elders of the village), or to arbitrators chosen by the parties. The men are addicted to the use of *bhang*: are turbulent, quarrelsome, revengeful, and careless of the shedding of blood. Their prevailing vice is petty thieving. Female infanticide is practised, but is not very common among these tribes.

After the decline of the *Dehli* empire, the whole tract of country from *Ropur* down to *Mamdot* on the left bank of the *Satlaj*, fell a prey to RAI AHMAD MUNJ, one of the numerous adventurers who rose to a temporary consequence in those days. When RANJIT SINGH crossed the *Satlaj* in 1808, and took *Jagraón*, the portion of this extensive territory which still remained in the possession of RAI AHMAD'S family was subjected to that conqueror, and *Jagraón* and its dependencies were bestowed by him in *jaghir* on Sirdar FATTEH SINGH ALAWALLA, under whose rule they still continue. His territory joins that of the *Jhind* rája near *Lodiana*, and reaches with few interruptions to within a short distance of *Firozpur*. It is ill cultivated and almost destitute of wood, which is no where used for fuel by the villagers. *Jagraón*, the *Dár-ul amal*, is about 10 miles inland from *Bhundri*.

On the 11th we left *Bhundri*. For two miles beyond this place the left bank of the river is excessively high; the deep channel runs rapidly under it, undermining large fragments of the soil, which continued falling as we passed, and raised large waves on the river. After passing the villages of *Khát* and *Gursian*, the deep channel crosses over to the right bank, leaving the villages of *Talwára* and *Sheikh Chishti* far away to the left, at the extremity of a wide tract of sand. Further on, at the same distance from us, we passed *Bhamál* and *Sálampur*, when the river again doubled round a point, and the deep channel brought us under the village of *Sidhuan* on the left bank.

To-day the river was devious and winding in its course, much intersected with sand-banks, which from a distance appeared to stretch quite across the channel and threaten a serious obstacle to further progress. The shoals were numerous, appearing to cross each other.

in all directions; insomuch, that it required great care and attention to steer clear of them. None but an experienced eye could distinguish from a long distance what the boatmen call "*kacha*" from "*paka-jal*." A villager who accompanied us from *Bhundri* pointed to a number of temporary huts on the left bank near that place, the inhabitants of which had, in his memory, removed no less than three times from one bank to the other, in consequence of the river changing its course and undermining its banks. Abounding as it does with shoals and sand-banks, and running over a loose soil through a flat country, this frequent change in its channel is the less surprising: it generally occurs after the rains, when its waters are swollen and impregnated with earthy particles. The prevalence for a length of time of a particular wind occasions the choaking up of the old channel, which the waters leave on subsiding, to pursue a new direction.

The country to-day differed little in its features from that we had passed the day before. At this season there are no crops standing, and, save in the vicinity of villages where a few garden vegetables give an appearance of verdure, the whole has an unvaried arid aspect. Trees are only seen near the villages, and those generally of the common *bér*, with here and there a *pipal*. The *jhán* is met with only in small patches, low and straggling. There was a great improvement observable in the soil of the banks of the river, especially that of the right bank, which exhibited strata of a rich red clay with mould of a darker color beneath. During the first part of our course after leaving *Bhundri*, the current was rapid, running under the high bank at the rate of four miles an hour; as we approached the end of our journey it became sluggish, scarcely averaging a mile and a half. We had a depth in some places of eighteen and twenty feet, and in others not more than four: in the deepest part this occurred where there were many channels, and we might not have been in the deepest, although we always chose those which in appearance promised to have the greatest body of water.

In passing *Sidhuan* I observed immense flocks of wild geese feeding on the sand-banks, and close to them an alligator, the first I have seen on the river, though they are said to have been found as high up as *Ropur*, and small ones are sometimes caught in the *nala* near *Lodiana*. Perhaps the coldness of the weather may account for my not having hitherto seen them in greater numbers. There appear to be few wild ducks or teal. The *jál kawá*, which we call the black diver, is common.

We came to about a mile beyond *Sidhuan*; estimated distance from *Bhundri* eight kos.

There is a ghât at *Sidhuan*. It is in the road to *Ropur*, in the *Doab bist Jalimdar*, and has ten boats, but the traffic by this route is inconsiderable. The duties are levied by the officers of Mahá-rája RANJÍ'T SINGH and Sirdar FATTEH SINGH ALAWALLA, on either side respectively. The village of *Sidhuan* is large, but has no bazar; contains from two hundred to two hundred and fifty mud and *paka* dwelling houses; with three *baniahs'* shops or *hattis* which supplied our people with food.

On the 12th we left *Sidhuan*. The channel continued under the left bank for upwards of two miles, when it passed the village of *Shaffipura*, and, crossing over to the right with considerable winding, brought us in the fourth reach nearly opposite to *Tihara*; there dividing into two branches, the smaller one ran directly under that town, while the larger struck off to the right towards *Kannian* and *Bhaggian*.

Tihara is the site of extensive ruins, which shew that it was once a place of some consequence; native authorities mention its being inhabited so long ago as the time of the Persian SECANDER SHÁH's expedition. The ruins now standing are of more modern date. It has suffered great damages from the inroads of the river. The present dwelling houses of the inhabitants are of mud, and mingle disagreeably with the half dilapidated but substantial brick walls of its former buildings. In the time of the *Dehli* emperors, it was attached to the Suba of *Lahór*. It was taken from the descendants of RAÍ AHMAD MUNJ (after they had been driven from *Mamdot* by the Pathán family of KUSUR) by RANJÍ'T SINGH, and given by him in *jaghir* to FATTEH SINGH ALAWALLA. The soil in the vicinity is good, and there are a number of fine *paka* wells, but little cultivation. The zemindars are *Arráins*, more commonly called *Mollies*, to the eastward; a class who seldom engage in cultivation on a large scale.

About six miles beyond *Tihara* is the village of *Tariwála*, opposite to which the right branch of the river again divides, the main stream making an immense circuit to the north-west, and leaving an island of three or four miles in breadth between it and the left channel which ran under *Tihara*. Night overtook us before we arrived at the junction of the three branches, and we were obliged to stop opposite to a village on the right bank called *Ramé-ke*. We were separated from our land party, and *Ramé-ke* could furnish no provision for our boatmen and camp-followers. From *Sidhuan* to *Ramé-ke* fourteen kos.

On the following morning, the 13th, we continued our journey, having previously sent on one of the boats at an early hour to purchase provisions. At *Talwandi* we came up with our advanced party; they had been able, with much difficulty, to procure a rupee's worth of *árad* from that village. There is a ferry, but I saw only one boat. After leaving *Talwandi* the river makes a very sudden turn to the right, round a point which we had much difficulty in weathering; and when this was accomplished, our boats drifted to the opposite shore and grounded on the sand-banks. A mile or more beyond this the three branches unite, and from the point of their junction to the ghát of *Miáne* and *Rerú* the river runs in a straight uninterrupted channel, confined by moderately high banks, and presenting in front, as far as the eye could reach, an unbroken surface of water. It is here a fine stream passing by *Punián* where the river is again broken by shoals and sand-banks. The next reach brought us near *Fattehpur*, from whence, leaving *Jhanián* on the left, the deep channel crosses over to the right bank, and in the next sweep to the left under *Maháráj-wála*.

The banks to-day were studded with villages at a distance of a kos, more or less, from the river. Those in the district of *Dharamkot* belong to Mahá-rája RANJIT SINGH, who has a small detachment of cavalry there and a fort; those in the *Fattehgarh* district are held by SHER SINGH BANDEICH, a thanadar under the Mahá-rája, and the rest by Sirdar FATTEH SINGH ALAWALLA. In some the authority is divided, half the village belonging to the *khalsa* and half to the *jághirdár*. They are all small and thinly inhabited.

We stopped at *Maháráj-wála*; estimated distance from *Ramé-ke* ten kos by the river.

This village is in the *Fattehgarh* district, now held by SHER SINGH BUNDEICH as thanadar. The lands are *khálisa* (or rent-free). *Fattehgarh* and the neighbouring country formerly belonged to TARA SINGH GHAIBA of *Kang* on the other side. Like most of the Sikh Sirdars, this person rose from an obscure origin to sudden, but, in his case, temporary power. He was originally a common shepherd, and acquired the name of "*Ghaiba*" (or wonderful) in his boyhood, from the circumstance of his having constructed a rude bridge of rope over the river *Weh*, which falls into the *Satlaj* below *Andrísá*, and across which he was in the habit of driving his sheep to graze on the opposite bank where the pasture was of a better quality. He joined the camp of the *Lahór* chief, who was just then entering on his career of conquest, as a needy soldier, and after serving a campaign returned laden with spoil which he disposed of in collecting a few followers. With these

he commenced a system of depredations on the country. Many needy adventurers flocked to him, till by degrees he found himself at the head of a formidable band; he then raised the standard of independence, proclaimed himself a Sirdar or chief, and commenced adding to his small patrimony by preying upon the weaker of his neighbors. Village after village submitted to his rule, till, by fraud and force, he became master of a large tract of country on both sides of the river. He had scarcely time, however, to enjoy his good fortune, when the extent of his territory attracted the notice of the *Lahór* chief, who did not long want a pretext to dispossess him. The whole of his ill acquired possessions fell into the hands of the Mahá-rája, by whom *Fattehgarh* was confirmed in *jághir* to HARI SINGH, the same person who had held it under TÁRÁ SINGH GHAIBA. At a subsequent period HARRI SINGH became disaffected toward the *Lahór* chief, and in 1825-26 was one among the Sirdars who openly threw off their allegiance to him, and, in virtue of their possessions on the left bank of the *Satlaj*, claimed the protection of the British Government, whom they wished to acknowledge as lord paramount. The others were Sirdar FATTEH SINGH ALAWALLA, Sirdar CHET SINGH of *Kot Kapara*, and QUTUB-U'-DIN KHA'N KASARIA, the Pathán chief, whose family are now in possession of *Mamdot*. It was not thought expedient to comply with their wishes, and they were directed to return to their allegiance to the Khálsa Jí. Sirdar HARI SINGH dying soon after, the territory of *Fattehgarh* was taken possession of by the *Lahór* chief, and has since continued to be *khálsa* land.

On the 14th we left *Maháraj-wála*. The river pursues a very winding course from this place till it passes between *Mundhiála* on the right and *Wála Káli Raon* on the left hand; from thence it runs in a straight direction past *Asappura Tibbi* and *Pipal* on the right, and *Malha Jungh Lúlu-wála* and *Tibbi Kusainé-wála* on the left. These villages are all small and insignificant, averaging from thirty to sixty mud hovels.

The current to-day was so sluggish and the wind so foul, that where the deep channel ran under high banks we had recourse to the tracking rope. There was too great a depth of water to admit of using the bamboo, and where the banks were unfavorable to tracking we had recourse to the oar. The boatmen only used one at a time, and that alone required the services of more than half the crew; the rest were occupied at the stern oar (which is used for a rudder) in counteracting the efforts of the rowers. We made but little way by these

means, and the boatmen seemed very glad to abandon the oar for the rope where the banks admitted of tracking.

After passing the village of *Pípal* we came in sight of the right bank of the *Beáh* or *Beás*, stretching across the horizon from N. E. to S. W. It is very high, and has a commanding appearance contrasted with the flat country which it overlooks. Before arriving at the junction of the *Beds* and *Satlaj* we passed a small river on our right, near the village of *Andrísá*. This was the *Wenh*: it measured in breadth at the mouth forty yards, but was much narrower a little higher up, and had a depth of 12 feet. The *Wenh* rises in the hills which recede northwards from *Beláspur* at a place called *Ghar Shan-kar*, and in its course through the *Doáb Bist Jalindar*, passes between *Phagwára* and *Jalindar*; from thence southward to *Dakni ká Sarái*, and south-west to *Nakodir*. From *Nakodir* its direction is west to near *Sultánpur*, when it turns to the south and enters the *Satlaj* below *Andrísá*. The length of its course may be roughly stated at sixty kos; its bed is never quite dry, but it has very little water during the months of January, February, and the early part of March.

The *Beás* joins the *Satlaj* about two kos below *Andrísá*. It has by no means so large a body of water at the junction as the latter river, but its current is stronger and water clearer. The high bank which was visible from *Pípal*, is more than a mile from the present channel. After meeting, the two rivers are split into numerous channels, divided by shoals and sand-banks. The *Satlaj* throws off one large and a number of smaller branches to the left, but its main channel continues its course under the right bank past the ghât of *Hari-ke*, carrying with it the water of the *Beás*. The large branch to the left runs under a high bank past the village of *Bhídan-wála*. The ghât at *Hari-ke* is near three miles below the present junction of the two rivers. The village itself and *chháoni* are on the top of the high bank at a distance of a mile and a half across the sand from the ghât. *RANJIT SINGH* has always a party of horse from one to two hundred strong stationed at this place. From the 14th to the 28th December the boats were detained at *Bhídan-wála* in expectation of the arrival of the mission from *Lahór*. During this time I had ample opportunity of judging of the extent of traffic passing by this ghât. Thirty-two boats with three men to each were unceasingly employed from morn to night in transporting loaded hackeries and beasts of burthen of every description across the rivers. I observed little difference on one day from another—it was a scene of constant activity and bustle.

The passage of the ghât generally occupied from fifteen to twenty minutes.

Nearly the whole of the trade of *Affghánistán*, *Kashmír* and the *Panjáb* with *Hindustán*, and by *Bombay* and *Calcutta* with Europe, passes by this ghât. Independent of the foreign trade, it is a great commercial thoroughfare for the interchange of the productions of the countries more immediately on the banks of the river *Satlaj*. The *Mulk Róhi* from the neighborhood of *Farid koth*, *Ropur koth*, &c. sends by this route the immense quantities of grain which it supplies to *Lahór* and *Amritsir*. Lighter articles, the *báfta* and fine cloth for *pagrís*, manufactured in the *Doáb Bist Jalindar* at *Ráhon*, *Phagwára* and *Hushiarpur*, which are in greater demand in the upper part of *Hindustan*, pass also by this route.

I was unable to ascertain the average amount of daily collections at the ghât, from the circumstance that the duty of great part of the merchandize which passes is not levied till its arrival at *Amritsir*, and merely pays for a *rowána* in crossing the river. It is the same with merchandize coming from *Amritsir*, which is taxed before leaving that place; this refers to the right bank of the river.

The following list, obtained from the ghât munshí, shews the rate of collection on the left bank.

For a camel loaded with grain,	0	5	0
For ditto ditto with salt,	0	5	0
For ditto ditto with <i>qund shakar</i> ,	0	7	6
For ditto ditto with <i>shakartari</i> and first kind of <i>kirana</i> ,	3	0	0
For ditto ditto with cloth,	4	11	0
For a large <i>tári gári</i> , loaded with any description of articles, except grain,	1	15	0
For a <i>gári</i> load of grain to merchants,	1	5	9
For ditto to brahmans, to <i>faqirs</i> and <i>bhais</i> ,	0	13	0
For ditto to a maund of coarse <i>kirana</i> ,	0	1	9
For ditto to a maund of <i>pushmina</i> ,	4	1	0
For ditto to a maund of opium and indigo,	2	0	0
For ditto to a donkey load of grain,	0	1	3
For ditto to a bullock or pony load of grain,	0	1	9
For ditto to a <i>gári</i> load of salt,	1	13	0

At *Jané-gill*, 12 miles below *Hari-ke*, the united streams of the *Beás* and *Satlaj* are called the *Ghara*, but known to the natives by the name *Nai*. Between *Hari-ke* and *Firozpur* are the ghâts of *Húmad-wála* and *Talle-wála*: the former has twelve, and the latter ten boats. Part of the trade of the *Panjáb* with *Hindustán*, and a small portion of that from *Khorasán* and *Affghánistán* which enters the *Panjáb* at *Dera Ismael Khán*, crosses the *Satlaj* at these ghâts. The roads by which the

trade passes from them and from *Hari-ke* are much infested by robbers. In the immediate vicinity are the Dogrí and Jat zemindars who are notorious for their thieving propensities. From *Hari-ke*, and lower down the river, to *Lahór* and *Amritsir*, the Akalis; and from *Firozpur* and *Hari-ke* to *Ambalah*, the country of the Sodhie Sahebs has to be passed. The merchants engaged in this trade contract with the owners of the camels and *gárís* for the safe conduct of their goods to their place of destination, and these latter make their own arrangements with the disorderly tribes whose territory they have to pass through; the escort, one of their number, is generally sufficient to ensure safety.

Below *Hari-ke* on the left bank of the river a tract of heavy grass jungle extends for several miles—it is here and there interspersed with the *jhau*; and there are numerous inlets and creeks from the river which insulate great portions of it. The islands thus formed are covered with the thickest jungles; those of the *jhau*, which is strong and elastic, are almost impervious to horsemen, while those covered with grass rising to the height of twelve and fourteen feet, are cut into deep ravines and contain large pitfalls. Tigers are found in these jungles. I went out in pursuit of them with Sirdars RATAN SINGH, GHIRJA REA, and a large number of his followers mounted on horseback. The Sirdar gave strict orders to his men not to use their matchlocks, and I anticipated the novel gratification of seeing a tiger attacked and killed sword in hand. The traces of them were innumerable. Every *nala* we crossed presented fresh foot marks; and though not so fortunate as to encounter any, we must have been following close upon them the whole day. The ground is unfavorable to the sport both for horsemen and elephants, owing to the number of *daldals* and quick-sands.

On the 3rd of January at *Firozpur*. The fort which is distant about three miles from the river was built by Sultán FERÖZ III. nephew to the emperor GHÍAS-U'-DIN (TUGHLAK), and who reigned from A. D. 1351 to 1387. It is an irregular building, of no strength, and having little means of defence. The interior is filled up with soil to half the height of the outer walls, and crowded with paltry brick houses and mud hovels separated only by alleys about six feet wide. The present possessor of the fort and adjacent territory is RÁNI LACHMAN KAUR, widow of DHANA SINGH.

NOBÁHU SINGH, the brother of GUJAR SINGH, one of the joint Sikh rulers of *Lahór*, was the first among the Sikhs who conquered and held this territory. From him it descended to his son GUR

BAKHSH SINGH, who added to it large possessions on both sides of the river. On the death of GUR BAKHSH SINGH, his four sons divided the territory between them, and the fort and adjacent lands fell to the share of DHANA SINGH before mentioned. DHANA SINGH dying without male issue, his three surviving brothers put in their claim to the estate, but the widow LACHMAN KAUR referred her cause to the Political Agent at *Ambála*, and it was ultimately decided in her favor by a reference to the Sháster law.

The *Kaggar* river, from which FIROZ SHÁH III. dug a canal to the *Kerah*, is said to have emptied itself into the *Satlaj* near *Firozpur*. We found no trace of it. If the *Kaggar* be understood to be the same river with the *Gaggar* which ran between *Ambála* and *Sarhind*, and afterwards received another river from *Shahabad* and the *Saraswati* from *Thanesar*, there must be some mistake in supposing that it ever joined the *Satlaj* near *Firozpur*. The old course of the *Gaggar* is well known; after reaching the *Bhatnér* frontier it went by the name of *Sótre*, and its direction through the desert to near *Dilawen*, where it was lost in the sands, may be traced by the forts of *Suratgarh*, *Chehárgarh*, *Phulra 1st*, *Phulra 2nd*, *Mojhgarh*, *Marrath*, *Rukkanpur*, which were built on its banks. This channel has long ago been filled up with sand, and it is only here and there at long intervals that any traces of it remain.

From the 3rd to the 12th of January we were detained at *Firozpur*, surveying the boundary of the Sirdarni's little territory. We found it very ill defined and disputed on every side. Of the country we saw, not more than one-thirtieth part was under cultivation; the rest was either entirely barren or covered with a low straggling brushwood of no value. There was a large tract of *karil* and *jhand* jungle, and I also heard of a forest of *sisu* at some distance, but did not visit the spot to ascertain the fact.

In the *jhand* and *karil* jungles, which I traversed in following the *Firozpur* boundaries, I observed several sites of towns and villages, and a great number of fine *paka* wells, now half filled with rubbish and fallen to decay, but which sufficiently prove that the country was formerly thickly inhabited. It has suffered much from the misrule which has long prevailed. The petty states by which it is surrounded are so promiscuously interwoven in their limits that it would be difficult to point to one among them which is not at variance with all the rest as to its boundaries. To this circumstance must be mainly attributed the immense quantity of waste land which meets the eye in every direction; for no sooner does one party

attempt to reclaim a portion from the desert, than the rest interfere to dispute their right to the soil. As we receded southward from the river, the sand assumed that undulating appearance which is described as characteristic of the skirts of the Indian desert, small mounds occurring at intervals, the soil of which was hard and covered with thorn and brushwood. The wells at a distance from the river were of considerable depth; but the territory, as was once the case, might be made independent of them and fertilized at very little expense. The dry bed of a *nala* called the *Sukrí* traverses it in various directions, and it would only require a canal a mile in length to let into it the waters of the *Satlaj* near *Tihára*.

The zemindars are Jats and Dogres (also a caste of converted Hindus); they are chiefly engaged in pastoral pursuits, rearing large herds of buffaloes, on the sale of the *ghee* and milk of which they depend for subsistence. It is probable they have been driven to this life by the unsettled state of the country, which precludes in a great measure all agricultural employment; it does not appear that they are from remote time a pastoral people. The country, as I before observed, bears marks of having been much more generally cultivated at an earlier period; and though the present race have become addicted to predatory habits, arising from the circumstances of their situation under petty authorities at variance with each other, it would not be difficult, under a better ordered government, to give them a taste for more peaceful and industrious occupations. At present they are miserably low in the scale of civilization, and the feuds existing among them, which are fomented rather than suppressed by their rulers, are not unfrequently the cause of bloodshed. The faith they profess is the Muhammedan, but they are grossly ignorant on the subject of their religion, and do not pay much attention to the outward forms of it. The Korán is little consulted. The elders of the village decide most of their differences, and the parties not abiding by their decision are left to seek their own redress.

In the detection of theft and other offences, the practice of chewing rice and immersing the head under water, and other equally infallible tests, are commonly resorted to. Every species of torture is put in practice by the authorities to obtain forced confessions.

There is little difference observable in the appearance of the peasantry here from the same class in the vicinity of *Lodiana*; but beyond *Firozpur* the Dogre caste are distinguished by a greater swarthinness of complexion and harsher features. They are also more dirty in their dress and persons, and many among them go bare

headed. The Hindu merchants, from the command which they have of money, exercise a preponderating influence in the internal management of the *Firozpur* domain. The ryots, from their extreme poverty, are forced to mortgage their crops to provide themselves with seed and the necessary implements of husbandry. Money is advanced at an enormous rate of interest, the lowest in the most favorable seasons being half an anna per month for every rupee; but the necessities of the people are such, they are now frequently obliged to pay $1\frac{1}{2}$ anna per month, and compound interest is charged after three months. The cattle and even the ploughs (which resemble those used to the eastward), are the property of merchants. It requires three pairs of bullocks to work a well during twelve hours of the day, and the quantity of ground cultivated is fifty *kacha* bigahs. The poor from the neighboring territories bordering on the desert resort to the banks of the river to cultivate the autumnal crops and earn a bare subsistence, but their attachment to the desert in preference to the climate near the river prevents their settling.

On the afternoon of the 11th we took leave of the Sirdarni and started next morning for *Mamdot*. A mile beyond *Firozpur* the river divides into two branches, the deep channel continuing under the left bank running separate for more than a mile; they again unite, and soon after splitting again unite at a short distance above the ghât of *Bare-ke*. *Bare-ke* is in the direct road from *Firozpur* through *Kasur* to *Lahôr*, from which it is distant thirty kos. It is the nearest point of approach of the *Satlaj* to that city. There are only four boats at the ghât, which is not a very considerable thoroughfare.

The boats here are quite different from those higher up on the *Satlaj*. They are flat-bottomed, but have high sides, and both ends are pointed; they measure about thirty feet in length by ten in breadth, with a depth of two and a half to three feet, and are very strongly built: the waste is partitioned by heavy beams running across, which give strength to the sides. The poop and forecastle are planked. Altogether there is an appearance of lightness and hardness about them which makes them as much surpass the *Ravi* boats as those do the craft in use higher up the *Satlaj*. The mode of propelling them is somewhat the same as sculling. An immense oar is lashed to the stern, the arm of which usually consists of two, or three joined pieces of wood, and is curved in such a manner that the end or handle stretches horizontally over the poop, where one, two, or three persons are placed to work it to and fro. It serves both to propel and direct the boat in its progress.

Near the village of *Kilcha*, where a small *nala* enters the *Satlaj* from the south, we were met by the headman of the Pathán chief of *Mamdot*. He was attended by a small party of Pathán horsemen armed with bows and arrows for the chase. They were all equipped and well mounted, and distinguished by a soldierly bearing. They escorted us along the bank, occasionally flying a hawk or discharging an arrow at the black partridge, which their progress through the *jhau* and cultivation disturbed from their hiding places.

The soil on the left bank was a rich loam, the deposit of the river ; when dry it is much split into fissures, and riding over it rendered exceedingly disagreeable, if not dangerous, and where moist it is barely capable of supporting the weight of a horseman.

Between the villages of *Kandi-ke* on the left and *Chawála* on the right bank, we passed another ghât, where there were four boats of the kind last described. The country partially cultivated on both sides, and the river broad and uninterrupted in its channel. After passing *Futtuáwala* we saw no villages near the banks for a distance of five kos, the *jhau* jungle in most places obstructing the view. The river again intersected with sand-banks and banks low.

We halted below *Mamdot* ; estimated distance from *Firozpur* $11\frac{1}{4}$ kos.

The fort is distant two miles from the present channel of the river. (In the rainy season the river runs within half a mile of its walls.) It is a square with a round tower at each corner and one in the centre of each face. To the east and west are gateways. The outward walls are of burnt bricks fifty feet high, and ten thick, of *paka* and *kacha*. The interior space is filled up with the soil from the outward moat, and rises to half the height of the walls : the whole is crowded with houses, separated only by narrow alleys barely two yards in width. The towers command an extensive view of the surrounding flat country.

The present possessors of the fort and adjoining territory are a Pathán family, formerly masters of *Kasur* and other large possessions on the opposite side of the river. The old fort, on the side of which the present one was raised, is said to have been built in the time of MUHAMMED SHÁH III. the son of the GHIAS-U'-DIN TUGHLAK SHÁH. In the reign of AKBAR and his successors it was attached to the sirkar of *Debálpur* in the Súbah of *Multán*. After the decline of the *Delhi* empire it was destroyed by the Dogre zemindars to prevent its being used as a stronghold by the marauding Seiks ; but soon after, when the *Lahór* province and the greater part of the *Báwuní*

of *Sarhind* fell into the possession of these adventurers, SOBHÁ SINGH KUAHEEA, one of the three joint rulers of *Lahór*, overran the country and bestowed it in *jághir* on one of his followers, KAPU'R SINGH THOGA. This person repaired the fort and held undisputed possession for a long period; he extended his territory as far as the *Baháwalpur* and *Khai* frontier, but owing to some measures highly offensive to his Mussalman subjects the Dogres, they rose against him and he was compelled to flee for assistance to SOBHÁ SINGH. SOBHÁ SINGH sent a force with him and reinstated him. The Dogres again rebelled and called in RAI AHMED MUNJH to their aid; but it not being in his power to assist them at that time, they were obliged to effect a reconciliation with KAPU'R SINGH, who continued in possession. At a subsequent period RAI AHMED MUNJH expelled KAPU'R SINGH from the country and established himself at *Mamdót*. He razed to the ground the remains of the old fort, and built the present one on its site: it remained the seat of authority under him for upwards of nine years. At his death he was succeeded by his son RAI ILIÁS, on whose death shortly after without issue, the Dogre zemindars, fearing a return of their old enemies the Sikhs, sent a deputation to wait on NIZAM-U'-DIN KHÁN, and QUTUB-U'-DIN KHÁN, the Pathán chiefs of *Kasur*, and to invite them to come and take possession of the fort. Accordingly the retainers of RAI ILIÁS's family were expelled, and QUTUB-U'-DIN KHÁN and his family formally reinstated as their rulers.

NIZAM-U'-DIN KHÁN and QUTUB-U'-DIN KHÁN had been troublesome enemies to Mahá-rája RANJIT SINGH, during the time they held possession of *Kasur*, and had resisted by every means in their power, and by inciting others to resist, the ambitious designs of that chief. He made repeated attacks upon their forts, in all of which he was repulsed; at length, finding force unavailing, he had recourse to other measures, and by bribes and artifices succeeded in sowing dissension in the family of NIZAM-U'-DIN KHÁN, and instilling treachery into the minds of his kinsmen and followers, two of whom basely murdered their chief in his sleep at *Kasur*. His brother QUTUB-U'-DIN, who was absent at the time, returned and surrounded the fort, but failed to secure the traitors. Suspecting all alike, he withdrew his confidence from his own kinsmen and committed the custody of his forts to a family of Syeds. He then entered into negotiations with the ruler of *Lahór*, in the course of which SAIF-U'-DIN SHÁH, one of the Syeds above-mentioned, was won over by the Mahá-rája and betrayed the trust reposed in him by QUTUB-U'-DIN. The Syeds under his orders delivered up to the Mahá-rája's officers all the forts in their custody.

The widow of NIZÁM-U'-DIN was leagued with the Mahá-rája against QUTUB-U'-DIN, who, unable to stand his ground, came to the resolution to abandon *Kasur* and his possessions north of the *Satlaj*, and soon after retired to *Mamdot*. There he remained in undisputed possession till the Mahá-rája crossed the river in 1808-9, when, seeing that resistance was useless, he wisely conciliated his enemy by a voluntary submission. The Mahá-rája confirmed him in the possession of *Mamdot* on the usual condition of military service, and he continued to furnish a quota of two hundred horse for the service of the state.

QUTUB-U'-DIN KHÁN died about a year ago at *Lahór*; he had always been anxious to throw off his allegiance to the Mahá-rája and be taken under the protection of the British Government. In 1826 he openly sought the protection of Captain MURRAY, Political Agent at *Ambála*, but on that occasion was, after some correspondence, directed to return to his allegiance to the *Lahór* Rája.

The present possessor of the *jāghir* is JAMÁL-U'-DIN KHÁN, the son of QUTUB-U'-DIN KHÁN. He was not at *Mamdot* when the Mission passed, but his younger brother, a fine lad of about fourteen years of age, paid us a visit, which we returned. The interior economy of their establishment showed a thorough disregard of the conveniences of life. Men and horses were indiscriminately huddled together in the different court-yards inside the fort, and of the two the horses were perhaps the better lodged.

Hawking and hunting the deer seem to be the great occupation and business of their lives. At our interview with the young chief, the subject of merchandize on the river happened to be introduced, and some questions were asked as to the relative price of grain at *Mamdot* and lower down the river, at which the whole assembly stared with unfeigned astonishment, and referred us for an answer to our questions to some *baniahs* who were sitting at one corner of the house tops when our interview took place.

The *Mamdot* territory extends upwards of thirty kos along the banks of the river, and varies in breadth from fifteen to seven miles. It has been much improved since it came into the possession of the present family both in its productions and population.

From *Lodiana* to *Mamdot* there is little difference of soil and produce. The ground near the river becomes harder and richer. As you leave *Lodiana* and approach *Firozpur* the light sand disappears. In the autumn are sown *géhun*, *nakhud*, *chola*, *kangani*, *munj*, *barrera*, *massan* and *jo-chana*, which are reaped in the spring, or during April and May. The garden vegetables of that season

are *benghan*, *kire*, *chulai ság*, *tarkakril*, *tarbuze*, *karbuze*, *khurja chaka*. Tobacco is also grown in small quantities. In the spring and as late as June are sown *nai shakar* or sugar-cane, *mákí*, *júar*, *másh*, *mung*, *moth*, *kanjad* or *til*, *bájra*, *pambzár*; and the vegetables are turnips, carrots, spinach, *sohá*, *gandana* or leek, *gandálon ká ság*, *karam ká ság*, onions. If rain falls plentifully in January, they have an intermediate harvest of coarse rice and other small grains, which is reaped in June. Above the *Mamdot* territory the ground requires much manure to render it productive, but below it commences what is called the *Serab* country, where the overflowings of the river leave a rich deposit, which requires but one turn of the plough to yield a plentiful harvest, and where wells are little used for purposes of agriculture. Gram is not grown in any quantity below *Mamdot*, and the sugar-cane totally disappears.

On the 14th we started from *Mamdot*. The banks of the river in some places higher than we have hitherto anywhere observed them. The land is here irrigated by means of *káhrez* or water-courses; pits are dug close on the banks of the river, and water let into them by channels dug through the banks and raised from them by the Persian wheel.

We passed a few temporary hamlets near the river, but villages were at a distance, and distinguishable only by the clump of trees by which they were surrounded. Opposite the village of *Bábul-ke* was a *ghât* with two boats.

The *jhau* jungle on both sides of the river high and thick, but parched up. At sun-set we came to on the right bank near the village of *Kagge-ke*, where was a remarkably fine *pipal* tree. Estimated distance from *Mamdot* $11\frac{1}{2}$ kos. Our land party halted at *Mohan-ke* on the left bank, about three kos from the river, as it is said to be a larger place than *Mamdot*.

On the 15th we arrived at *Bagge-ke*, estimated distance by the river 10 kos. Villages at a distance from the banks, which were for the most part covered with *jhau* jungle and the *kana* reed. Now and then a small patch of cultivation intervened.

The channel much intersected by sand-banks: winding in the river inconsiderable. We passed one *ghât*, at which there were two boats.

On the 16th at *Ladhu-ke*, estimated distance by the river $7\frac{1}{2}$ kos. At the village of *Johad-ke*, the only one close on the banks, there were two boats and a number of the temporary wells or *káhrez* before described. I observed one where the water was conveyed over a sand-bank across the bed of the river for the distance of half a mile,

and was then raised by a well and Persian wheel to a higher bank, over which another channel conducted the water to the permanent banks of the river. Here the same apparatus raised the water to a level with the country to be irrigated.

The river increasing in breadth and more winding than yesterday; the banks occasionally twelve and fourteen feet high, and covered to the water's edge by heavy *jhau* and grass jungle, which are likely to prove embarrassing to boats tracking up the river.

On the 17th we arrived at *Jagveré*, estimated distance $15\frac{1}{2}$ kos. About four kos beyond *Ladhu-ke* we passed the boundary of the *Mamdot* territory opposite to *Kallandir-ke*, and, a kos further on, entered that of Nawáb BAHÁWAL KHÁN, opposite *Rana-watta*. Between these places there is a dense forest of the *jhau* which rises to the height of twenty and more feet, and is almost impenetrable. The zemindars of these parts find it a secure refuge from the oppressive demands of their rulers. The little cultivation they engage in depends much on the course of the river. They have no settled habitations, but wherever the banks of the river afford facility for digging their temporary wells, they erect their hamlets of grass and *kana* reed, and commence cultivating. A slight change in the course of the river often obliges them to remove to a more favorable spot, and it rarely happens that the same people cultivate the same fields for three seasons together.

We passed the ruins of a village, *Watter Shah*, on the right bank, where there was a ghât with two boats. Opposite the village of *Azmut-ke* we were met by the officer in charge of the Khán's frontier district, ULLA BACHAYA, the nephew of the Khán's Vizier, a sufficiently mean-looking personage, and who, in dress and manner, led us to draw no very favorable conclusions as to the style of the *Baháwalpur* court. He was attended by a handful of ill-mounted and dirty-looking horsemen, whose sombre and uncombed appearance formed a striking contrast to the gayer equipments of our Pathán friends.

Winding in the river considerable. In a few places where confined by high banks, we had an uninterrupted deep channel averaging seven hundred yards in breadth.

At *Jagveré* we found Nawáb GHULÁM QÁDIR KHÁN, the mehmándár sent on the part of BAHÁWAL KHÁN to attend us to *Baháwalpur*, and who had been waiting our arrival at this barren spot for the last three months. On the morning of the 18th he paid us a visit, and we were introduced to a corpulent, good-humoured, *baniah*-looking person, whose manners, if not highly polished, were frank and

unaffected. He was richly dressed in cloth of *khimkáb*, with a handsome *lúngí* for a turban, and wore a superb shawl for a *kamarband*; but the whole was in bad taste, and his attendants were as wretchedly shabby and mean as he was fine. The Nawáb spoke a very intelligible Hindustání, but the language of his followers was quite foreign to us. It differs from Hindustání, not so much perhaps radically as in the termination of the words, and the peculiar tone and manner in which it is spoken, which is drawling and nasal, much more disagreeable to the ear than the Panjábí of the bawling Sikhs. We were better pleased with the boatmen of the *Baháwalpur* boats than with any one we saw in this train of our new acquaintances. Their manners contrasted favorably with the rude specimens we brought with us from *Lodiana*. They have much the appearance of a sea-faring people—much of the alacrity and briskness which we admire in our own sailors.

The *Baháwalpur* boats are strongly built, but clumsy. In shape they are square fore and aft; the poop and forecastle are planked, and the former raised very high, so that the person steering is able to look over the *chappared* apartment which is in midship. The rudder is of curious and unhandy build, but has great power. The largest of the boats there measured eighty feet in length and about three feet in depth. They are all furnished with a square sail and masts which strike; and have two oars of immense size, the largest requiring six and seven hands to ply each of them.

On the 19th at *Bunga Jawán-ke*, estimated distance $7\frac{3}{4}$ kos. On starting from *Assap-wála* we were greeted with the novel and pleasing sound of a sailor's cheer from the crews of the *Baháwalpur* boats. Each boat's crew, as their boat left its moorings and dipped oars into the water, gave out a long pealing sound, which was responded to by all the rest in succession. The cry, as near as I could distinguish the words, was "*Bhum, Baha al Hai.*" (*Baha al Hai* is the name of a patron saint of the boatmen of this country and on the *Indus*.) The boatmen stand to their oars, and every muscle of the body is brought into play in the motions which they go through. When the oars are dipped deep into the water, the outside men are frequently suspended from the handles which they drag down by their weight till the opposite ends or shafts are disengaged from the water. I should say there is more exercise with less fatigue in this than in our method of rowing. The rowers keep good time.

We had to contend against a strong wind, which prevented our making much progress to-day. We passed only two or three villages

on the right bank. We left the district of *Assap-wála* (which begins from *Rana-watta*) and entered that of *Gurjiana* or *Fattehgarh* about four kos before we arrived at *Bunga Jawán-ke*.

The country from *Rana-watta* to *Gurjiana* was formerly taken possession of by LAINA SINGH, one of the joint rulers of *Lahór*. Mahá-rája RANJIT SINGH subsequently took it from CHET SINGH, the son of LAINA SINGH. It was afterwards held by BHAI LÁL SINGH, and taken from him by QUTUB-U'-DIN KHÁN, who annexed it to the *Mam-dot* territory. About three years ago, BAHÁWUL KHÁN, called *bará* BAHÁWUL KHÁN, in distinction to the present KHÁN, conquered it from QUTUB-U'-DIN KHÁN, since which time it has remained annexed to the *Baháwalpur* territory.

The country increasing in wildness and the jungles thicker the further we proceed.

On the 20th to *Chine*, estimated distance seven kos. The villages at a distance from the river. On the right bank heavy jungle nearly the whole way. We came down a noble sheet of water to-day, where the river ran without a curve for some miles between moderately high banks.

On the 21st to *Bachian-wála*, estimated distance eight kos. We passed a few temporary hamlets on the river side, but the *jhau* jungle prevailed with little interruption on both banks throughout the journey. The banks high and the channel less intersected by sand-banks than usual. We left the district of *Gurjiana*, and entered that of *Musáferan-wála*, about two kos before we arrived off *Bachian-wála*.

A few bricks of an enormous size were picked up at a village on the way down, (*Bharám-ke*.) They had been taken from some ruins laid open by the river about three months previously. The ruins were described by the villagers as the remains of the wall and turret of a fort sunk more than six feet below the present surface of the surrounding country. They said that the marks remained in the banks where the bricks had been washed away, that by digging other parts of the ruin would be found more perfect. It was determined to visit the place on our return from *Baháwalpur*. The bricks were marked with three curved lines in the shape of a horse-shoe, and from that circumstance referred by the Hindus of our party to the period of the *Treta Yug*.

On the following day, the 22nd, we crossed the river and went to *Pákpattan*, distant about eight miles from our boats and about five from the nearest point of the river. It is approached from a perfectly level and open plain of four miles in extent, and, seen from that distance,

has the appearance of a citadel perched on the summit of a lofty eminence. It is built on the *thae* or site of the ancient fort of *Ajwadin* or *Ajodin*, and is a place of great sanctity, having been the residence for a number of years of the celebrated Mussalman saint Shekh FARID-U'-DIN, to which circumstance it owes its present name of *Pákpattan*, or the ferry of purity. Under its former name of *Ajwadin* it is celebrated as the spot near which the *Satlaj* has been so often passed by Mussalman conquerors in their invasions of *Hindustán*. In A. D. 997 *Ajwadin* was taken and plundered by Sultán NÁSIR-U'-DIN SABACTAGI'N; but accounts vary as to whether he crossed the *Satlaj* in that expedition: in some he is stated to have extended his ravages as far as *Bhatnér*, the capital of the *Bhatti* country. In A. D. 1001, Sultán MAHAMED GHAZNAVI, the renowned son and successor of SABACTAGI'N, forded the *Satlaj* in the vicinity of *Ajwadin* and plundered *Bhatnér*. In his subsequent numerous invasions of *Hindustán* he followed this route more than once.

In A. D. 1079 Sultán IBRÁHIM crossed the *Satlaj* at this point in his second Indian expedition. After the Ghaznian dynasty, Sultán MAHAMED GHORI', called SHAHÁB-U'-DIN, passed by this route and by *Bhatnér* when he took *Asi* (or *Hansi*) in his battles with rája PITHAURA. In A. D. 1397-8 the conqueror AMIR TIMOUR in his invasion of *Hindustan*, after laying in ruins *Débalpur* and *Ajwadin*, proceeded across the river with part of his forces and destroyed *Bhatnér*, whither the inhabitants of the two former towns had fled for protection.

Close under the town to the north is the dry bed of a river which they call the *Dandi*, probably the *Dond* mentioned by Major RENNELL. Four kos more to the north is another dry bed of a river which they call the *Sohag*; and beyond this about ten kos from *Pákpattan* is the old bed of the *Beás*, which, separating from the *Satlaj* below *Hari-ke*, formerly ran close under *Kasur* and did not again join that river till within twenty miles of *Neh*. In the time of AKBAR, the *Doáb Bist Jalindar* extended to *Hamadpur Dar Behli*, fifteen kos above *Neh*.

To the south of *Pákpattan* in coming from our boats we crossed a *nala* which had a very high bank; its bed was in some places dry, in others it had one and half feet of water. I inquired of the villagers if they had any particular name for it, but they said not; neither did they know any thing about the *Harari Narnay* or *Qoud* mentioned by Major RENNELL. The ground between this *nala* and the *Satlaj* was low, covered with thick jungle of the tamarisk and patches of fine-looking wheat. It is no doubt overflowed in the rainy season, when

the breadth of the river from the bank of this *nala* to the opposite high bank must be more than four miles.

We remained at *Pákpatan* till the 26th, making arrangements for reducing to order the predatory tribes of that neighborhood.

On the 23rd we visited the shrine of Hazrat Shekh FARID SHAKARGANJ* in the town of *Pákpatan*. We had to ascend more than forty feet to the top of the mound on which the town is built. The ground sounded hollow to our horses' hoofs as we threaded through numerous narrow streets and alleys, many of which were lined with miserable objects of charity, among whom here and there might be seen females enveloped in the *burkhá*, pretended descendants of the Prophet, who importuned for alms with a perseverance which we found it difficult to resist. After descending again by a flight of steps to a level with the surrounding country, we were conducted into a small square paved court surrounded by the lofty brick walls of the adjacent houses. In the centre of this stood the *maqbará*, a plain insignificant building, having one small apartment, in which was the grave of the saint covered with faded drapery. There were two doors to this apartment, one to the north and one to the east. That to the east, called the "door of Paradise," is never opened but on the fifth day of the sacred Moharam, when numbers of pilgrims, both Hindus and Musalmans, come to visit the shrine, and all who pass through this doorway are considered saved from the fines of perdition. The doorway is about two feet wide, and cannot be passed without stooping, and the apartment itself is not capable of containing thirty people crowded together; yet such is the care which the saint takes of his votaries on these occasions, that no accident or loss of life has ever been known to occur. A superlative heaven is allotted to those who are first to enter the tomb on the day mentioned. The rush for precedence may, therefore, be better imagined than described. The crowd of pilgrims is said to be immense, and as they egress from the sacred doorway, after having rubbed their foreheads on the foot of the saint's grave, the air resounds with their shouts of FARID! FARID! Several relics were shewn to us, among which the most curious was, a round flat piece of wood of the size and shape of an Indian's bread or *chapáti*. In the long fasts which the saint imposed on himself, he is said to have solaced his hunger by gnawing this hard substance.

There is a couplet very common throughout the *Panjáb* which has reference to this story.

The ancestors of Shekh FARID-U'-DIN first came to *Multán* in the

* See some account of the same saint by Munshi MOHUN LA'L in the last volume.—ED.

train of BEHRAM SHÁH, of the Ghaznavi family, and continued to fill situations of trust and emolument in that province, until it fell into the hands of Sultán MAHAMED GAURIE, (SHAHÁ'B-U'-DIN.) When Hazrat JALÁ'L-U'-DIN, the father of Shekh FARID, fled to *Cháwe Múshaikh*, a village on the banks of the *Satlaj*, where he lived the life of a hermit, practised great austerities and became celebrated for his great sanctity. At this place Hazrat Shekh FARID-U'-DIN was born; he was sent for his education to *Multán*, and afterwards spent many years in travel. At *Multán* he became celebrated as a *Sáheb Kárámat*, or worker of miracles, and many ridiculous stories are told of his performances. Among others it is related that whenever he felt hungry he would throw into his mouth a handful of dust or pebbles which immediately became sugar. He practised similar metamorphoses on the goods of other people, and turned so many things into sugar that he was universally known, and is so to this day, by the affix to his name of *Shakar-ganj*. Hazrat Shekh FARID-U'-DIN SHAKARGANJ and his posterity were chiefly instrumental in converting to Islámism the numerous different tribes of Játs and Gujur or Gickers, descendants of the Rajpút shepherds, who so often fought bravely against the invading armies of the north. The descendants of Bábá Shekh FARID are supposed to have inherited from him the power of performing miracles, and several of them became celebrated throughout *Hindustán* for their sanctity. At *Agra*, *Síkru*, and *Dehli* their shrines witness to the respect in which their memory is held by the Mussalman population. AKBAR SHÁH owed to the prayers, we are told, of one of the family (Shekh NUR-U'-DIN, or NIER-U'-DIN) the birth of his son JEHÁNGIR. In the early attempt of the Sikhs to lay waste the country between *Multán* and *Lahór*, one of the descendants of Shekh FARID-U'-DIN at *Pákpattan* placed himself at the head of a number of converts, Ját peasantry, and kept his ground so well against these marauders that they thought it advisable to come to an amicable arrangement with him; and, in a treaty which he concluded with one of their chiefs, he was allowed to enjoy in independence the revenues of *Pákpattan* and several villages attached to it. At a later period, when the Sikhs became united under one chief, the Shekh-zadas were despoiled of their possessions. The Mahá-rája now allows them one thousand rupees a year for their maintenance, derived from the town duties of *Pákpattan*; besides which, they have a fourth share in four small villages in the neighborhood.

On the 27th to *Toba Sádát*, in the district of *Musá-íran-wála*, estimated distance nine kos.

On the 28th to *Akú-ke*, in the district of *Cásim-ke*, estimated distance nine kos.

On the 29th to *Dola*, where we entered the district of *Jheddo*, estimated distance seven kos.

On the 30th we passed through the districts of *Jheddo* and *Sháh Farid*, and entered the *Hásilpur* district about two miles before we came to our halting place at noon, estimated distance nine kos.

On the 31st we halted at noon.

On the 1st of February at *Palra*, estimated distance $8\frac{1}{2}$ kos. The face of the country varies little in appearance, being day after day the same succession of tamarisk jungle, the deep green of which is now here and there relieved by a shrub resembling the willow in leaf and color, which the natives call *jhat*, and from the root of which the *miswaks* or tooth-cleaners are commonly made. From *Ráná-watti* near the *Mamdót* and *Baháwalpur* frontier the signs of cultivation gradually disappear; and near *Pákpattan* the country becomes extremely wild; we lose all trace of habitations near the river, save, par hazard, a few temporary grass hamlets. After entering the *Hásilpur* district an improvement is perceptible. We again see the Persian wheel at work, and the banks of the river occasionally lined with a wonder-gazing populace. The canals and water-courses increase in number as we progress onwards. Those we have hitherto seen vary in breadth at their mouths from ten to twenty yards, and are at present dry, being much above the level of the river, but from early in May to the end of September they serve to irrigate the country to the distance in some instances of thirty miles from its banks. Smaller branches are cut in every direction from the main canals, so that the whole country is covered with them, and travelling in that season rendered disagreeable and difficult.

During our journey of the last two or three days we have been pleasingly reminded of having entered a Mussalman country by the strict attention every where paid to the time of prayer. In the open fields, where a minute before the air has resounded with the voice of labour, every thing is suddenly hushed,—the shrieking Persian wheel is at rest, the cattle are freed from the yoke, and the peasants may be seen ranged together in small parties on their mats of the palm tree, going through their forms of devotion with an air of the greatest decorum. The sight struck us from its frequent occurrence.

Of the tribes which inhabit along the banks of the river from *Firozpur* to *Baháwalpur*, those in the neighborhood of *Pákpattan* and below that place, are said to be the most wild and disorderly and the most

addicted to predatory habits. The Dogre and Dogre Badela are chiefly confined to the *Mamdot* territory and higher up. At *Loadi-ke*, below *Mamdot* they are succeeded by the *Wattu Karral Chishti* and other branches of the Jat tribes, descendants of the Rajpút shepherds, who formerly inhabited the country on the *Ravi* between *Multán* and *Lahór*. These people still lead a wandering pastoral life, seldom building anything but temporary sheds, and may fairly challenge the name applied to them of "*khána badásh*." They are a race inured to every hardship, ill fed and worse clothed, but capable of enduring great fatigue under every privation. They are much celebrated for the length and rapidity of their journeys on foot in their nightly excursions to carry off cattle from neighboring territories. Nothing in their appearance would indicate their possessing a superior share of physical strength or activity; they are tall spare men, generally ill made, and without any great shew of bone or muscle. If their hardiness of constitution is any where perceptible, it is in their harsh swarthy features, which though not pleasing are manly.

These tribes, even in the best days of the Mogul empire, were never brought into any proper subjection or made to feel the influence of a well-ordered government. They continued embroiled in feuds among themselves, in the settlement of which the arms of authority seldom interposed. A system of *sálahang*, or retaliation, than which nothing can be conceived more productive of crime and general disorder, has prevailed among them from time immemorial. This system authorizes the redressing an injury not only on the person or property of the injurer, but on any of his relations, friends or neighbors whom chance may throw into the power of the injured party; consequently a few disorderly persons have it in their power to involve the whole country in their quarrels. The original cause of their feud is generally a dispute as to the right of pasture, or a few buffaloes may have strayed from the herds of one village to those of another. This leads to reprisals, in which blood is sometimes shed, and blood calls for blood long after the original cause of dispute has ceased to be remembered. If this was the state of affairs when the country on both sides of the river was under one authority, we may judge of what it must be now that the river separates two hostile powers.

The system of *sálahang* which was before confined to villages near each other, now extends along the whole line of the opposite banks of the river. Instead of a few buffaloes stealthily abstracted during the night by ten or twelve herdsmen, villages are now openly attacked and plundered at noon-day by gangs of from one hundred to two

hundred desperate freebooters acting under acknowledged *Sir-kurde*, (leaders.) The river affords them an easy means of escape, and, owing to the existing relations of one of the powers with our Government, prevents their being pursued by the authorities of the opposite side. This security from punishment would of itself be sufficient encouragement to their predatory habits, but they are moreover instigated and abetted by the petty district officers of their own governments, who share in the spoils without incurring any of the danger of their enterprises.

Female infanticide prevails generally among these tribes. Mothers appear to have little affection for their offspring and little respect for their marriage tie, if one may judge by the frequency with which it is violated. A wife leaving the protection of her husband and absconding with another man, is frequently claimed and restored by the intervention of the authorities after an absence of nine or ten years, and any children she may have borne to her paramour in her absence, are equally divided between him and her lawful husband.

On the 2nd February at *Tufiere*, estimated distance $11\frac{1}{2}$ kos. The banks of the river low, and the river perceptibly diminished in breadth. We passed a town on the right bank hidden in a deep and extensive grove of palm trees; the cupola of a mosque peeping through the foliage, and a few solitary palms standing far apart, thrown out from an horizon lighted by a brilliant sunset, reminded us forcibly of Bengal scenery.

The country on the left to-day was more open, the river excessively winding.

On the 3rd to *Durpur* near *Khairpur*, estimated distance $10\frac{1}{2}$ kos. The country on the right was well cultivated and apparently rich, dotted with clumps of the beautiful palm tree, and the banks of the river abounding in temporary wells and water courses;—that on the left was low and barren and covered with a very thin jungle of the tamarisk, the river extremely winding in its course.

Early in the day we were met by SARFARA'Z KHÁN, and at a later hour by MIR MUHAMMED QÁIM and MUHAMMED DÁIM, native gentlemen of the Khán's household and relations of the Khán's Vizier. One of these gentlemen, although holding the responsible appointment of Mír Bakhshí, is said to be quite uneducated and ignorant of his letters; but we found him more polished in his manners than the generality of those we had met.

About half way on our journey we passed the road to *Mailsian*, a town on the right bank, the former capital of BAHÁ'WAL KHÁN's terri-

tory on that side. It once boasted a very strong fort, but from the time this territory was first threatened by the Siekhs it became the policy of the *Baháwalpur* government to destroy all their forts and *garhís*, and this among the rest was razed to the ground.

As we approached *Khairpur* we came in sight of the *Rohi* (or desert), and were for some time quite at a loss to conjecture what object it was which skirted the horizon for many miles. The sand-hills rise abruptly from the plain which intervene between the desert and the river, and from a distance the intervals between them are not perceptible. Seen from our boats, they formed a distinct and well defined outline resembling an unbroken chain of low hills. The *Rohi* runs in the shape of a promontory directly up to the town of *Khairpur*, which is about a mile distant from the present channel of the river: in the rainy season the town only intervenes between the sand of the desert and the waters of the *Satlaj*. When we visited it, we ascended from one of the streets directly on a steep hill of sand and found ourselves fairly in the desert surrounded by sand-hills and the debris of houses, walls and huts more than half buried under them. The desert encroaches on the town every year, and many of the present inhabitants remember the time when *Khairpur* was distant at least two miles from the nearest point of it. The houses are chiefly of unburnt bricks, and the round domes of the mosque are also built of the same material. It is said to be very durable, but the secret of its durability lies more in the paucity of rain which falls in this country. The town has a tolerable bazar, and contains 400 shops of all descriptions; it was formerly a place of considerable traffic, but has fallen off since the time of the great *BAHA'WAL KHÁN*. Small *kafilas* occasionally arrive here from *Hánsi* and *Hissár* across the desert, and the tobacco grown in this vicinity and in the *Hásilpur* district is exported by this route in large quantities to *Delhi*, where it is not unfrequently sold as *Multán* tobacco.

The only *paká* building in the town is a large mosque now in ruins: it is ornamented with painted tiles to represent enamel, but too little remains to give any idea of the effect of this style of ornament when in perfect preservation. In the neighborhood are the ruins of several mud forts, formerly the seat of *Dáudputra* chiefs of the Keharani branch of the tribe, who arrived in this country sometime before the Pirjani branch, of which the present *Khán* is the head. They were engaged in constant feuds with the 2nd *BAHA'WAL KHÁN*, and made several attempts to subvert his power, but were unsuccessful, and at last forfeited their own possessions in the struggle. The only surviving

member of this family is now a fugitive at the court of the *Bikánir rája*.

The morning of the 4th being a halt, we made a short excursion into the desert with the intention of looking for floricans and antelopes : the former, as well as the leek and bustard, are very numerous where the desert approaches near to the river ; but they are much more frequently put up in the stunted tamarisk bushes which crown the sand hills within the skirts of the desert, than in the tamarisk coppices nearer the river. After crossing the first ridge of sand-hills, the highest of which might measure sixty feet, we came in sight of a level plain of hard soil extremely bare, with only here and there a small mound of shifting sand, and extending for several miles till the eye was arrested by what appeared to be a ridge similar to the one on which we stood. One could have fancied that this tract had recently been usurped from the river by the desert. We learned from the people with us that the whole of it is usually cultivated after a favorable rainy season, when it produces plentiful crops of the smaller kind of grain on which the inhabitants of this country chiefly subsist. Owing to the unusual drought of the last five years, it had remained a waste. The ridge on which we stood was the site of what had been an extensive town now buried many feet under the sand ;—the soil between the sand hillocks was covered with particles of burnt brick, and I was able to trace the ruins of houses for upwards of a mile along the ridge. These have, no doubt, arrested the sand in its progress when it is carried in volumes by the south-west monsoon towards the river, and may account for the high and very abrupt appearance of the skirts of the desert at this point.

After a short walk in the sand, rendered disagreeable by a dreadfully scorching sun, we returned towards our boats. The *Dáudputras* who accompanied us as guides were highly amused at our style of sporting, which they termed *jarida-tor*, and only becoming a *shikári* by profession. We were little less amused at their strange jargon and at the readiness of their sporting equipments. Their weapon is the rifle with the curved stock common throughout *Affghánistán* and the countries west of the *Indus*. The length of the barrel varies, but is never much longer than that of our musket. They have a great contempt for our use of small shot and for small game, which they only pursue with the hawk. The flesh of the hog-deer and antelope is esteemed a great dainty. In pursuit of the latter a *Dáudputran* will take his provisions for three days, mount his camel, and sally forth in the hottest season ; when, to use their own expression, “ to face the

desert is to face death." In these excursions he sometimes remains out as long as five days, wandering about after the tracks of the deer, until his supply of water is exhausted; when, if he has not been successful, he makes for the nearest pool and takes his chance of the deer coming to drink. These pools are not of frequent occurrence in the desert, and none but a person acquainted with every stump bush and hillock, and every feature of the ground, could attempt to go in search of them. That many of the *shikáris* have this intimate knowledge of the desert, is proverbial:—"they know it better than the scholar his book, or the Háfíz his Korán;" and their knowledge is the more astonishing when we consider the narrow and minute observation which it implies. So much do the sand-hills resemble each other, that a common observer might be removed to fifty different stations in the course of the day and fancy every one the same.

The prohibitions to shooting game which are strictly enforced in the Nawáb's preserves and jungles near the river, do not apply to the desert, where the *shikáris* are at liberty to roam at large; and the knowledge they acquire of its localities is highly prized by their chief. They are sometimes lost, but casualties of this kind are attributed to a stroke of the sun, or to exhaustion from want of water, or to the bite of a reptile called the flying-snake, (said to be numerous,) rather than to their losing their way. The stars assist to guide them when, as is often the case, they travel by night.

One of our guides proved himself a good marksman by taking off the head of a carrion kite with a ball from his rifle at fifty yards; he brought the bird up to us and observed that "that was the manner in which his master would serve the káfir Sikhs, if we would allow him to cross the river." The Khán, it would appear, finds it politic to impress his subjects with the idea, that nothing but a fear of the displeasure of the British Government has hitherto prevented his taking steps to recover his lost dominions;—while they on their part assure their chief, that but for this fear they would conquer the country to-morrow, and not leave a light burning from the *Indus* to *Lahór*.

The familiar manner in which our guides spoke of the former possessors of the old forts and gardens about *Khairpur* as we passed through, struck me as highly characteristic of the primitive state of society of the people. Their greatest chiefs they designated by their simple surnames. In speaking of the Khán, they called him simple *BAHÁWAL KHÁN* or *Khañ*, never adding any affix of respect. Every garden or fort we passed had its anecdote of the feuds that had existed between the Keharani and Pirjani branches of the tribe. Much

was said about the "*baháduri*" of the fallen chiefs, the devoted courage of their adherents, and the time which a few resolute men had kept the second BAHÁWAL KHÁN and his whole army at bay. The knowledge possessed by our guides of these affairs seemed to be intimate; and could I have understood clearly all that they said, I might during our walk have learnt the whole history of the tribe. On their first settlement in the country, the Dáudputras, to add consequence to their name, as well as to increase their power, are said not to have been very scrupulous how they swelled their numbers, and people of all descriptions were admitted into their tribe.

The opinion I formed of the lower orders from what I saw to-day was not very favorable. One cannot be long in their society without being struck with the absence of that urbanity which is so universal among all orders in *Hindustán*. With each other they appear to be on easy terms, using little ceremony. With strangers they are either rough and betray a suspicion and distrust in their manner, or their courteousness is awkward and descends to servility. One of our guides, whose garments would hardly have gained him admittance into any gentleman's gateway, gave me to understand that he was no common person, but one who lived in the Khán's presence. I should not have believed him but for an anecdote which I heard of one of the former chiefs soon after my return to camp, and which was to the effect "that the first BAHÁWAL KHÁN would have given a severe bastinado to any person who had dared to come to his *darbár* in new or clean clothes." The person who related this anecdote to me, lamented the degeneracy of the present ruler, "who has brought himself," said he, "to look upon clean clothes without aversion, and, what is worse, allows his prime minister to ride in a *baili* or a bullock carriage, for which last innovation he will one day be sorely visited."

We remained at *Darpur* on the 5th. This place is pleasantly situated at about half a mile from the present channel of the river. A fine piece of grass turf sprinkled with dwarfish palm extends from it down to the banks of the river. The fort of *Darpur* is still in good preservation, but has not been occupied since the family was dispossessed by the second BAHÁWAL KHÁN. It is of mud and *paká* bricks, in form a square, with turrets at the angles; the outer walls enclose an area of nine hundred square yards. Near the fort are the lines of one of the Khán's disciplined battalions, stationed here under the command of a half-caste Portuguese; their uniform was a blue coat with scarlet facings, flaming scarlet shakos, with brass ornaments. They were drawn out to receive us on the day of our arrival. Evening had

closed in before we arrived, and they burnt blue lights, the effect of which with their salute was good, but so much cannot be said for the stunning noise of their barbarous drums and fifes which accompanied it. The battalion mustered about three hundred firelocks; besides these, there were two small pieces of artillery with a few gulandáz dressed in red *pagrís*, brown vests, and blue cossack *paijâmas*. They were very cleanly in appearance, and I was told that the whole of the Khán's troops had been newly clothed in anticipation of the arrival of the mission.

On the 6th to *Goth Nur Muhammad*; estimated distance by the river $8\frac{1}{2}$ kos. The *Khairpur* district extended for two-thirds of the way, when we entered that of *Goth Nur Muhammad*. In consequence of the unusual drought of the last four years, and the floods from the river having inclined to the right bank, the districts from *Khairpur* to the eastern frontier now barely pay the expenses of collecting the revenue.

Throughout this extensive tract of country, embracing a length of more than one hundred kos, there are only three officers in authority for the collection of revenue and the preservation of order. One is at *Khairpur*, one at *Goth Qáim Ráís*, twelve miles beyond, and the other moves alternately from *Gurjiána* to *Múbárákpur*, but resides chiefly at the latter place. In harvest time, *mutsaddis* or *muharirs* are dispatched from *Ahmadpur* to collect the revenue in these parts, but they never remain long. So little authority does the Nawáb possess over the districts east of *Múbárákpur*, that he may be said to levy rather an occasional tribute from them than any fixed revenue. The property of the zemindárs consists chiefly of cattle, and is consequently moveable; and as the Nawáb finds it more troublesome than advantageous to be continually sending large forces to overawe them, they frequently escape two or more seasons successively without paying any thing to his treasury, either by crossing to the opposite side of the river, or concealing themselves and their cattle for a time in the large tracts of jungle which every where abound. Once in two or three years a force is sent, when, if the zemindárs refuse to come in and pay their rents, their houses and the little land they cultivate are laid waste, and all their cattle that can be found seized and carried off. They are at liberty to release them on paying what is called the "*triuni*" or tax for pasturage, and the arrears of their tribute in kind. The amount of this varies with the means which the government officers have of enforcing, or the *ryats* of resisting the demand. A tax is also levied from them, commonly designated and known among them as the "theft licence," with a view, perhaps, of eradicat-

ing their propensity to thieving, but which most probably encourages the habit. As it is a tax openly paid by the principal Ráth or Ját zemindárs to the Nawáb, free-booting is in a measure countenanced and rendered honorable by it. The present Nawáb, I am told, has never hitherto visited the country to the east of *Mábárákpur*, from a dislike to trust himself among these tribes.

The river diminishing in breadth and the banks low; country more open on both sides, but still presenting large tracts of heavy *jhau* jungle.

We lost sight of the Desert soon after leaving *Darapur*. The scenery near *Goth Nur Muhammad* is rather pleasing from the number of palm trees in its neighborhood; here also are ruined forts and a few ruins of *paka* bricked houses, the former residence of chiefs of other branches of the *Dáudputra* tribe.

On the 7th to *Dera Baká*, near which the district of *Goth Nur Muhammad* terminates. The villages are more substantial, and the country more open and better cultivated as we proceed. The people also appear to be less rude, and not so scantily clothed as we found them in the frontier district. The revenues are collected regularly and with little trouble.

On the 8th to *Bakarpur*, the ghát opposite to *Baháwalpur*; estimated distance by the river $4\frac{1}{2}$ kos. The river narrowed extremely during the two last days' journey. The banks have become very low and the current sluggish, running about $1\frac{1}{2}$ miles in the hour. The country is well cultivated on both banks of the river, the people are more engaged in agricultural pursuits, and herds of cattle are less numerous than they were above *Khairpur*.

From the 8th to the 25th of February the Mission remained at *Baháwalpur*, employed in negotiation with the Nawáb. The town of *Baháwalpur*, the most populous in the Khán's dominions, is situated about two miles south-east of the present channel of the river; during the floods a branch of the river runs close under its walls and the intervening space, at present a moist sand covered with low straggling *jhau*, is then one sheet of water. At the present season only the beaten tracks to the ghát are passable on horseback and the rest is quagmire. The walls of the town enclose a number of gardens, and from the river the only signs of buildings we could descry through the trees were the minarets of the large mosque. The approach to the town from the river is by a number of narrow lanes separating gardens, in which the bed-mushk, the apple and orange tree, the mulberry, and rose bushes are seen in great profusion. A bridge of

one arch built of burnt bricks conducts over an insignificant moat to the *Multán* gate by which we entered the city. On the day of our visit to the Nawáb, the tops of the houses in the streets were crowded with spectators, who observed a profound silence as we passed: this was so remarkable that I cannot but think particular orders must have been given on the subject, as the same circumstances attracted the notice of the Honorable M. ELPHINSTONE and his party on their passage through *Baháwalpur* in their Mission to *Cábul*. We passed through a long narrow street which forms the principal bazar, and it appeared well inhabited; the other parts of the town betray a decreasing population. Many houses are empty and in ruins. It now contains 2,025 shops of all descriptions. The number of its inhabitants may be estimated at 20,000. The second BAHÁWAL KHÁN always spent some months of the year at this place, but since his death it has been quite deserted by the court, and other causes have not been wanting to account for its diminished importance. Before the Nawáb relinquished his territory on the opposite side of the river, the greatest portion of his revenue, which he receives in kind, was collected here, as also the indigo and rice for exportation. This is no longer the case, and the trade of *Affghánistán* with Central India, to which it chiefly owed its flourishing condition, has both fallen off in quantity, and no longer pursues so exclusively as formerly the route by *Baháwalpur*. The decreasing income of the present Nawáb and his father has compelled them to levy arbitrary contributions from the merchants, who have deserted the place in consequence. The *Amritsar*, *Shikárpur* and *Márwár* mercantile houses have still their agents here, but comparatively little business is transacted between them. A'GÁ RAFFI, a Jew, who had formerly a house at *Derá Ghází Khán*, and is connected with the Jews of *Bokhára* and *Kaúb Chand Shikárpurí*, are the most wealthy merchants at the place. *Baháwalpur* still maintains its celebrity for the manufacture of silk cloth or *lungís* and *gulbadans*, which latter are of a superior texture, and more lasting than those of *Amritsar* or *Benares*. The quantity exported is not very great, and chiefly to *Sindh*. Rifle barrels are also made of very superior workmanship both at *Khairpur*, *Baháwalpur* and *Khánpur*, but the handsomest are made only to order, and to be sent in presents to *Sindh*, *Lahór* and other places.

The inhabitants of *Baháwalpur* and of the few other towns in the *Baháwalpur* territory, are chiefly Hindus, and these in appearance the very outcasts of their race, dirty, squalid and miserable. Though they are tolerated in the practice of their religion, and have a high

priest or *gusáin* who enjoys some consideration with the Nawáb, they are looked down upon by their Mussalman fellow subjects with the utmost contempt, and subjected to every kind of oppression. Some few of them enjoy offices of trust near the Nawáb and the other great men of his court, but this they owe to the indolence and ignorance of their masters, which quite unfits them for the tiresome details of business.

On the 25th we again started in our boats from the *Bindra-wála ghât* at *Baháwalpur* to proceed to the junction of the five rivers of the *Panjáb* with the *Indus* at *Mithankot*.

We arrived sometime after nightfall at *Nahur-wáli*; estimated distance from *Baháwalpur* $11\frac{1}{2}$ kos. The banks of the river were exceedingly low almost throughout our journey, and the river still diminishing in size, not measuring more in some places than 150 yards across. The current not averaging $1\frac{1}{2}$ miles an hour. There were numerous sand-banks, and the river, saving that it is deeper, is more insignificant in appearance here than at any part of its course from *Ropur* downwards. The numerous canals which are cut from below *Khairpur* might account for this, but very few of them are fed from the river in the cold weather.

The country on both sides of the river was tolerably open, and cultivation more general, with fewer tracts of the *jhau* jungle. The inhabitants on both sides of the river are chiefly of *Ját* origin, mixed with a few *Dáudputras* and *Baloches*; they are not generally addicted to predatory habits, but the dismemberment of the *Khán's* dominions has involved them in the general disorder which now prevails.

On the 26th to *Mahabatpur*; estimated distance by the river 3 kos. At about two miles from *Nahur-wáli* we came to a heavy *jhau* jungle on the left bank, one of the Nawáb's preserves or hunting seats, where he had proposed that we should take our leave of him. We joined him towards the afternoon, and after witnessing the slaughter of a few hog-deer returned to our boats, with the promise to hunt with him again on the following day.

On the 27th we passed the day in hunting with the Nawáb. The following is a description of his mode of following that pastime.

The jungles in which the game is preserved, are divided and traversed in their whole extent by strong hedges made of twisted boughs of the *jhau* running at acute or at right angles with each other in the form of a funnel, into which the game is driven. The hedges are not made to join at the apex of the triangles, but a space is there left open and cleared of jungle in which the ambuscades are formed.

These ambuscades resemble in their relative positions an inverted funnel, the mouth of which joins that into which the game is driven. The Nawáb occupies the first place in front of the opening; at a short distance behind him, branching out to right and left, are two more ambuscades not far apart; behind these are others farther apart, and so on with the rest, which are so arranged that the sportsmen fire clear of each other. The ambuscades are formed of small hedges of the *jhau* high enough to conceal a person when seated on the ground: in the very high jungles platforms of eight and ten feet high are used for the same purpose.

When the tract of jungle is circular, it is first surrounded by a very high fence of the *jhau*, between which and the jungle a space is left for a road; then from the circumference fences are drawn towards the centre like the radii of a circle; the centre is freed from jungle and left open for the formation of the ambuscades. A number of dogs of all sizes and breeds, and from three to four hundred *sawárs*, according to the extent of line they have to cover, are then sent into the jungles from the outside, and close their ranks as they approach the narrow end of the enclosed space, hooting and shouting to drive the game before them. The Nawáb and his courtiers meanwhile lounge at their ease in their ambuscades. Conversation is carried on, at first freely, but as the beaters draw near, in whispers only. A crackling of the jungle or a waving of the grass is sufficient to put every one on the alert—the hand is instinctively directed towards the trigger, and you are prepared for tiger, deer, hog, or any thing that may make its appearance. The eye is strained to bursting to catch the moment of the beast's leaving the jungle, when, whatever he is, he will assuredly give a spring on finding himself in the open space. At last he bursts cover, and the object of your fond anticipations proves to be nothing more than a jackal; but before you have time to recover from your vexation at having your nerves unstrung by so unworthy a beast, and before you have time to brace them again, the jungle again crackles, the boughs break—you catch a glimpse of something bounding through the grass, and out springs a fine buck deer with his head low and haunches hard pressed by the hounds. He either stops for an instant amazed, or he has passed you before you can raise your gun to your shoulder: in either case you miss. At the report of your gun he stamps the ground in disdain and bounds on to fall a prey to some cooler sportsman among the twenty or thirty who send their balls whizzing after him. The Nawáb has as many as eight or nine rifles loaded and placed before him, and he uses them

so quickly and efficaciously, that unless the game comes very thickly, it is a bad day's sport for those who are permitted only to shoot after him. Dinner is always cooked at his hunting seat and sent out into the jungle for him, and served at noon. Several of his *musáhibs* (courtiers) partake of the meal with him, and inferior fare is distributed to the whole of his attendants. Even down to the *saises* and grass-cutters no man is allowed to remain hungry. After dinner all indulge in a siesta, and then to the sport again. Where the jungle is very extensive and not well enclosed, and the efforts of the horse-men are baffled by the game doubling round them, it is not unusual on a windy day to set fire to it. This is a sight to be witnessed. The sport is very exciting while it lasts, but the pauses during the time spent by the beaters in driving the game towards the ambuscades are tedious. The Nawáb and his minister frequently occupy these intervals in reading the *Korán*.

The Nawáb's hunting seats are mere temporary hamlets, the sides of which are formed of the *kana* reed, and the roofs thatched over with grass. A large enclosure is set apart for the Nawáb himself, which is surrounded with a strong and high fence of the *jhau*, making it quite private. This enclosure varies from two to three hundred yards square; at different angles of it are a place for his *daftar-kháná* or secretaries, a place for his cook-room, and a place for his huntsmen or *shikáris*. He has sometimes an under-room attached to his own bungalow in the rear. In front of the bungalow is a rude *chabutrâ*, raised from the ground about two feet, on mud pillars, and covered with an awning or canopy of cloth under which he holds his *darbár* and receives the reports of *shikáris*, who are sent out in all directions to bring tidings of game. In front of the *chabutrâ* his horses are picketed. His minister and two or three others of the most consideration about him have separate hamlets prepared for them, but the rest of his followers rough it in the open air. Canvas tents are very little used even by the wealthier classes.

On the 28th we arrived opposite to *Mirpur*; estimated distance by the river 10 kos. As we approached the end of our day's journey the river became broader. There were still fewer tracts of jungle to-day, and the country rich and well cultivated, with many substantial-looking villages on either side.

March the 1st. We arrived at *Makhanbelâ*, the ghât opposite to the town of *Uch*; estimated distance by the river 16 kos.

The river increased to-day to a fine broad stream; it was joined by an inlet from the *Chináb* river soon after we left *Mirpur*, and for the

last twelve miles, before its junction with the *Chináb*, it ran in a tolerably straight course, forming a fine body of water. There was one considerable winding near *Shirna Buchri*. The *Chináb* joins the *Ghára* a little above *Makhanbelá*, and these streams run together for a considerable distance without appearing to mix their waters. The line marked by the opposite color of the two streams is very distinct. The red-colored water of the *Chináb* and *Raví* is prized by the people here much above that of the *Ghára*. The Nawáb when residing at *Ahmadpur* or *Diliwar* sends to this ghát for a weekly supply for his household, which is conveyed on hackeries in large brass vessels.

The breadth of the *Panjad* at *Makhanbelá* in the present season is perhaps under 900 yards, but during the rains it is sometimes six miles across from *Uch* to the opposite side.

The country on the left continued well cultivated and open. On the right we had the dry bed of *Beah* and several creeks of the *Chináb*, forming islands covered with heavy *jhau* jungle and apparently pasture land. Numerous herds of buffaloes were grazing near the bank.

In the afternoon we went to visit *Uch*, from which we were distant about three miles; the road was through a good deal of *jhau* jungle and over the beds of inlets of the river which scarcely supported our horses. The *Uch Bokharian* is situated on the banks of the river, and was formerly the seat of a Hindu principality, which extended to near *Multán*. The town itself was then called *Walhaur*. Towards the latter end of the reign of IBRA'HÍM 1st of the Gaznaví dynasty in 1105, a number of wandering Musalmán devotees took up their abode there, and were tolerated by the ruling prince, Rájá SHAM SHÁD, from the apparently harmless austerity of their lives. Among the number of these devotees was Shekh SYED JALÁL, who was gifted with the power of performing miracles, by which many were convinced of the truth of his doctrines.

Rájá SHAM SHÁD was one of the first of his converts, and giving up all worldly affairs, he made over his territorial possessions to the Pír for the support of his followers. One or two others also deserve to be mentioned, as they gave their name to the towns now comprehended under the general name of *Uch Bokharian*. Among these was a chief of the tribe of zemindárs called *Lálás*, who inhabited the country in the neighborhood. On the conversion of their chief the *Lálás* followed his example, and on his death built a sepulchre to his memory, round which they formed habitations; hence the *Uch* of *Lálás*, the *Uch* of the Moghuls, and the *Uch* of the Jumals, were also named by the Pír after two of his favorite disciples, who died of the austerities which they practised, and were buried there.

We visited the tomb of the Pír Shekh SYED JALÁ' BOKHA'RI'. The interior of the building was curious ; the roof was supported by more than thirty arches resting on four colonades of wooden carved pillars ; there were a great many graves and some relics from distant countries. Amongst these were the preserved spinal bones of several saw-fish. The pilgrims who go to *Mecca* from *Affghánistán* and the *Derajat* by passing down the *Indus*, frequently come thus far out of their way from *Mithankot* to visit the shrine of Shekh SYED JALÁ'L, and implore his intercession for the safety of their journey. A descendant of this Pír is still living at *Uch*, but the lands formerly belonging to the family which enabled them to live in a style of splendour and comparative refinement among a barbarous people, have long since been usurped, first by the názims of *Multán*, and since then by the Dáudputra chiefs. They have now barely sufficient for their support ; their influence over the common people is, notwithstanding, very considerable, and they are generally respected.

From *Uch Bhokhárian* we proceeded to the *Uch* of the Gilanis, which appears to have been formerly joined to it, but is now distant about half a mile ; on our way we passed through large topes of date trees. Hazrat Shekh MUHAMMAD GHOS JILA'NI', round whose shrine this town was built, and after whom it was named, was descended from Hazrat Shekh ABDUL QÁDIR JILA'NI' BAGHDÁDÍ', and came to *Uch* about the year A. D. 1394. The Dáudputras have continued to be his *murids* and the *murids* of his successors from the time of their first leaving *Shikárpur*.

This Pír's family had considerable assignments of lands in the vicinity of *Uch* before the arrival in the country of the Dáudputras, and up to the time of the 2nd BAHA'WAL KHÁN their territory and wealth had continued increasing, and MAKDUM GANG BUKSH, who was then the Pír Múrshid, was second only in influence to the Khán, and kept in his pay a considerable standing force ; he built a fort at *Uch* and surrounded the town with a wall. His son, also named MAKDUM GANG BAKSH, headed a revolt of the Dáudputra tribes against the second BAHA'WAL KHA'N in 1799, and releasing BAHA'WAL KHA'N's son, MUBÁRAK KHA'N, from confinement, set him in opposition to his father. The Khán besieged him in the town of *Uch*, destroyed the fort, and laid the town in ruins, and obliged the Pír with his son to flee to the territory of the Amírs of *Sindh*. The lands belonging to the Pír's family were on that occasion forfeited to the state, and have never been restored. A few years since a grandson of this Pír returned from the *Sindh* country to take up his abode at *Uch*, and six or eight wells have been allowed by the present Khán for his subsistence.

On the 2nd March to opposite *Núrwálá*; estimated distance 10 kos. We came to on the right bank of the river about three miles below *Sitpur*, and went in the afternoon to see that town. It is surrounded by an extensive grove of palm trees, and is celebrated for its dates and mangoes, which it produces in great abundance. The site is very elevated, and its name indicates its having formerly been a Hindu town. The old buildings are all of burnt brick and lofty, the streets dreadfully narrow and filthy, the country round it is pretty, but must be very unhealthy during the hot months, when it is entirely overflowed, leaving no means of communication saving by boats. It was formerly thickly inhabited, but now the half of the houses are in ruins, and it may have about 200 shops of all descriptions. The inhabitants of the town are chiefly Hindus,—those of the country, round, *Játs* and *Beloches*. Cattle are numerous, and the *zemindars*, both *Játs* and *Beloches*, predatory in their habits. *Sitpur* is said to have been formerly on the right bank of the main stream of the *Indus* which fell into the *Panjnád* immediately above it: it is now about 10 miles on the left side of the main stream, but during the hot weather the whole intervening space is one sheet of water. It is recorded that *qísids*, messengers with letters, were formerly in the habit of leaving *Multán* or *Derá Ghází Khán* in the morning, mounted on an inflated oxhide, and reaching *Sitpur* and *Ouch* by the rivers *Chináb* and *Indus* at noon. This mode of conveying letters is still sometimes-adopted between *Derá Ghází Khán* and *Shikárpur*, and during the height of the floods is very expeditious.

On the 3rd to *Cháván*; estimated distance 12 kos. The country on both sides appeared very rich, but without any great variety of foliage.

On the 4th we arrived at *Mithankot* on the right bank of the *Indus*; estimated distance 10 kos. The rapidity of the current increased very much as we approached the junction of the two rivers. The *Panjnád* all the way from *Ouch* is a beautiful stream, and, with the exception of one or two windings, runs straight to the south-west. On the 7th of March the Mission left *Mithankot* to return by a new route through the *Panjáb* to *Lodiana*. The boats were left under my charge to prepare for their return voyage up the river, with the exception of those belonging to the *Lodiana* merchants, which continued their voyage to *Shikárpur*.

From Lodiana to Baháwalpur by the rivers Satlaj and Ghara.

Villages on the left bank.

Length of Stages and date.	Names of Villages.	Distance Kos.		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance Kos.		Caste.	Jurisdiction.
		Apart.	Inland					Apart.	Inland		
Dec. 9th.	Lodianá, ..						<i>Villages on the left bank.</i>				
12 kos by the ná. 6.	Rájpúrá, ..	1	$\frac{3}{4}$	Ráin, ..	J. R.	14 kos by the river.	Giddarvindi, ..	$\frac{1}{2}$	$\frac{1}{2}$	Ját kheir	F. S. A.
	Haibuwal, ..	$\frac{1}{2}$	$\frac{3}{4}$	Ranghar	ditto.		Tihára,	$\frac{1}{2}$	$\frac{1}{2}$	Ráin, ..	ditto.
	Baranhara, ..	2	$\frac{1}{2}$	ditto, ..	R. S.		Kannean, ..	3	1	ditto, ..	ditto.
	Malakpúr, ..	2	$\frac{1}{2}$	ditto, ..	J. R.		Laddiwálá, ..	$\frac{1}{2}$	$\frac{1}{2}$	Gújar, ..	D. & K. B.-ke.
	Salempúr, ..	1	$\frac{1}{2}$	ditto, ..	F. S. A.		Tariwálá, ..	1	1	ditto, ..	ditto.
10th	Ghanspúr, ..	$\frac{1}{2}$	$\frac{1}{2}$	Gújar, ..	ditto.	Bhore,	1	$\frac{1}{2}$	ditto, ..	ditto.	
	Hanbar,	1	$\frac{1}{2}$	ditto, ..	ditto.	Chahaur, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
	Wallipura, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Bhedánwálá, ..	$\frac{1}{2}$	1	ditto, ..	ditto.	
	Baniawálá, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Bassian,	1	$\frac{1}{2}$	Ját,	ditto.	
	Wallipúr, (purána), ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Kamálpúrá, ..	$\frac{1}{2}$	$\frac{1}{2}$	Gújar, ..	ditto.	
4 kos.	Talvandí, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Picha-ke, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
	Aliwal,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Sungalli, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
	Bhundrí, ..	$\frac{1}{2}$	$\frac{1}{2}$	Rájpút		Abdul Rahmán, ..	1	$\frac{1}{2}$	Gújar, ..	K. S. B.	
				Púliab, ditto.		Mianá Guzr, ..	2	$\frac{1}{2}$	Malláh, ..	D.	
	Koth,			Gújar, ..	ditto.	Pipli,	1	1	Gújar, ..	ditto.	
8 kos.	Gursian, ..	1	$\frac{1}{2}$	ditto, ..	ditto.	10 kos by the river.	Ismáilpúr, ..	1	$\frac{1}{2}$	ditto, ..	F.
	Tarivára, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Fatthepúr, ..	1	$\frac{1}{2}$	ditto, ..	ditto.
	Shekh						Jhánéan, ..	2	$\frac{1}{2}$	Ját,	ditto.
	Chishtí, ..	$\frac{3}{4}$	1	Chishta	ditto.		Jhabelánwálá, ..	1	$\frac{1}{2}$	Jhabeil, ..	ditto.
	Bhamál,	$\frac{1}{2}$	1	Rájpút, ..	ditto.		14th	Mahárájwálá, ..	1	$\frac{1}{2}$	Ját Maharáj, ..
Salempúr, ..	$\frac{1}{2}$	1	Ráin, ..	ditto.	Múndi,	$\frac{1}{2}$		$\frac{1}{2}$	Ját,	ditto.	
Sidhuán, ..	1	1	Ját, ..	ditto.	Wára Kálí				Ját Kálí		
Shaffipúrá, ..	1	$\frac{1}{2}$	Rájpút, ..	ditto.	Ráon,	3		$\frac{1}{2}$	Ráon, ..	ditto.	
Abbupúr, ..	$\frac{3}{4}$	1	Ráin, ..	ditto.	Malhá Jang, ..	1		$\frac{1}{2}$	Naipál, ..	ditto.	
12th	Malsian, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Láluwálá, ..	1	$\frac{1}{2}$	ditto, ..	ditto.	
	Harbuwál, ..	$\frac{1}{2}$	$\frac{1}{2}$	Ranghar	M. R. K.	Tbibi Huseni,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
	Ballú-ke, ..	1	$\frac{1}{2}$	Gújar, ..	ditto.	<i>Villages on the right bank.</i>					
	Baghé-ke, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Kanmán Ját, ..	1	1	Ráin, ..	R. S.	
	Baghé-ke (bárrí), ..	1	$\frac{1}{2}$	ditto, ..	K. S. B.	Kannean2nd, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
12th	Ghura,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Bhagian, ..	1	$\frac{1}{2}$	ditto, ..	ditto.	
	Burj,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Thammúwálá, ..	1	$\frac{1}{2}$	ditto, ..	K. S. B.	
	Burj Bará, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Amír Sháh, ..	$\frac{1}{2}$	$\frac{1}{2}$	Seyads, ..	ditto.	
	Sanghú-wálá	$\frac{1}{2}$	$\frac{1}{2}$	Dogres, ..	R. S.	Qasimwálá, ..	$\frac{1}{2}$	$\frac{1}{2}$	Gújar, ..	ditto.	
	Sadare-wálá, ..	$\frac{1}{2}$	$\frac{1}{2}$	Gújar, ..	ditto.	Rampúrá, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
12th	Bhundrí, ..	$\frac{1}{2}$	$\frac{1}{2}$	Harni & Ráin, ..	ditto.	Kanjaráwálá, ..	$\frac{1}{2}$	$\frac{1}{2}$	Ráin, ..	ditto.	
	Burj,	$\frac{1}{2}$	$\frac{1}{2}$	Ját, ..	ditto.	Abdulpur, ..	1	$\frac{1}{2}$	ditto, ..	ditto.	
	Dahdhara, ..	1	$\frac{1}{2}$	Dogres, ..	ditto.	Bajáur,	1	$\frac{1}{2}$	Ját,	ditto.	
	Koth,	$\frac{1}{2}$	$\frac{1}{2}$	Gújar, ..	ditto.	Sálepúr,	1	$\frac{1}{2}$	Ráin, ..	ditto.	
	Gursiom, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	Bamanián, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
12th	Purjion					Tahirpur, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
	Beharépúr, ..	1	1	ditto, ..	ditto.	Rámé-ké, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.	
	<i>Villages on the right bank.</i>										
	Gugg,	$\frac{2}{2}$	1	Gújar, ..	ditto.						
	Hujra,	2	$\frac{1}{2}$	ditto, ..	ditto.						
12th	A Ghât,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.						
	Sudhpúr, ..	$\frac{1}{2}$	$\frac{1}{2}$	Ráin, ..	ditto.						
	Maddipúr, ..	1	1	ditto, ..	ditto.						
	Purjion										
	Beharépúr, ..	1	1	ditto, ..	ditto.						

N. B.—R. S. stands for Ranjit Sing. F. S. A. for Fateh Sing Aluwálá. K. S. B. for Kotsháh Bundh-ke. J. R. for Jindh Rájá. M. R. K. for Mai Rúpán Kákar. D. for Dharmkot.

Length of Stages and date.	Names of Villages.	Distance		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance		Caste.	Jurisdiction.
		Apart.	Inland					Apart.	Inland		
12½ kos. Jan. 12th	Pattú	1	1	Ját,	K. S. B.		Mattar Ba				
	Talwandí, ..	1	1	ditto, ..	D.		bul-ke,	1	1	Dogre, Mamdot.	
	Bern,	1	1	ditto, ..	Loian.		Madu-ke,	1	1	ditto, .. ditto.	
	Puneán,	1	1	ditto, ..	ditto.		Baje-ke,	1	1	ditto, .. ditto.	
	Jaggúpúra,	1	1	Ráin, ..	ditto.		Mahitam, ..	1	1	Mahitam ditto.	
	Kamálpúrá,	1	1	Ját San-	ditto.		Baje-ke 2nd,	1	1	Dogre, ditto.	
				du,			DullaMohan-				
	Kákar,	1	1	Ját Ká-	K.-K. S.		ke,	1	2	ditto, .. ditto.	
				kar, ..							
	Kang,	1	1	Ját							
				Kang,	K. S.W.						
11½ kos. Jan. 14th	Kusalghur, ..	1	1	ditto, ..	ditto.		Andresa,	1	1	Ját,	F. S. A.
	Mandi,	2	1	Ját Dha-			Singhi-ke, ..	1	1	ditto, ..	ditto.
				wara, ..	L.		Chamba,	1	1	ditto, ..	A.-ka.
	Mandhiála,	3	1	Ját,	ditto. ..		Kamboh, ..	1	1	ditto, ..	ditto.
	Usafpura, ..	1½	1	ditto, ..	R. S. S.		Kirrian,	1	1	ditto, ..	ditto.
	Tibbi,	1	1	Ráin, ..	F. S. A.		Harri-kePat-				
	Pippal,	2	1	ditto, ..	A.		tan,	1	1	ditto, ..	ditto.
	Nakki,	1	1	Ját,	F. S. A.		Talli,	1	1	AsulJát,	Kasúr.
							Gandhár				
							Singhwálá,	1	1	Mixed,	ditto.
							Fattú-kewá-				
							lál,	1	1	Ráin, ..	ditto.
11½ kos. Jan. 14th	Mannúwálá,	1	1	Machí, ..	F. S. A.		Kujian,	1	1	ditto, ..	ditto.
	Rúknwálá,	1	1	Naipál, ..	ditto.		Chúri wálá,	1	1	ditto, ..	ditto.
	Singhi-ke, ..	1	1	ditto, ..	ditto.		Fatú wálá, ..	1	1	Dogre, ditto.	
	Jhínd,	1	1	ditto, ..	ditto.		Kilcha,	1	1	Bhatti	
	Bhedá wálá,	1	1	Do.Mul-						Rájput,	ditto.
				lál, ..	ditto.		Sultán Chu-	1	1	Ját Chi-	na,
							na,	1	1	na,	ditto.
	KilcháGolám			Dogre			Mathianwálá	1	1	Dogre, ditto.	
	Husenwálá,	1	1	Bah-			Wásti Seide-				
	Báre-ke,	1	2	loche, ..	F.		ke,	1	1	Ráin, ..	ditto.
				ditto, ..	F. D. K.		Sheik Himal,	1	1	ditto, ..	ditto.
							Bahek Bodle-				
11½ kos. Jan. 14th	Kilcha,	2	1	ditto, ..	Mamdot.		ke,	1	1	Boddle, ditto.	
	Kande ke, ..	1½	1	Dogre			Wásti Patrí-	1	1	ke,	
				Bah-			ke,	1	1	Ját, ..	ditto.
				loche, ..	ditto.		Ratniá wálá,	1	1	Ráin, ..	ditto.
	Kande ke						Thulti Jos-				
	2nd,	1	1	ditto, ..	ditto.		ke,	1	1	Dogre, ditto.	
	Bahak Bodle						Doburji,	2	1	ditto, ..	Khudian
	Khudá,	1	1	Bodle			Pattar ke, ..	1	1	ditto, ..	ditto.
	Bakhsh			Faqr, ..	ditto.		Sahite ke, ..	1	1	ditto, ..	ditto.
	Khán-ke, ..						Khimi Jallú				
	Farid Khán						ke,	1	1	ditto, ..	Mahmke
	wálá,	1	1	Kahur			Pirá Jallu-ke	1	1	ditto, ..	ditto.
11½ kos. Jan. 14th				Patton, ..	ditto.		Dhing-ke, ..	1	1	ditto, ..	ditto.
	Rahmuke, ..	1½	1	Dogre, ..	ditto.		Mujahna-ke,	1	1	ditto, ..	ditto.
	Lakmir-ke, ..	1	1	ditto, ..	ditto.		Dhurji,	1	1	ditto, ..	ditto.
	Mamdot, ..	1	1	Mixed							
				Cast, ..	ditto.						
	Vehre,	1	1	Dogre, ..	ditto.						
	Wásti Kheire										
	ke,	1	1	ditto, ..	ditto.						
	Wásti Muja-										
	had-ke, ..	1	1	ditto, ..	ditto.						
	Mátam, ..	1	1	Máhtam,	ditto.						
	Bodalwálá, ..	1	1	Dogre, ..	ditto.						

Village on the right bank.

Villages on the left bank.

Villages on the left bank.

N. B.—K. S. B. for Kárák Singh Budulep. K. K. S., for Khuwar Karak Singh, R. S. S. for Rája Seochet Singh. A. for Akhalian. F. for Firozpur. K. S. W. Karri Singh's widow. F. D. K. for Fateh Diakhan's jágir.

Length of Stages and date.	Names of Villages.	Distance Kos.		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance Kos.		Caste.	Jurisdiction.		
		Apart.	Inland					Apart.	Inland				
9½ kos.	Toje-ke,	½	1¼	Dogre,	Mamdot	16th	Kari,	¾	¾	Dogre Kara, K.			
	Rukna Bodela,	¾	1¾	Bodelá	ditto.		Mahitum, ..	¾	1	Mahit- tam, .. ditto.			
	Shekh Bodela,	¾	¾	ditto, ..	ditto.		Sháh báz-ke, Sandar-ke, ...	¾	1	Dogre, ditto.			
	Rulla Keire-ke,	1	1	Dogre Bodela.	ditto.		Jada Vazed-ke, ..	1¾	1¾	Wattú, A. D.-ke			
	Rehma Kheire-ke, ..	¾	1	Dogre, ditto.			Bagge,	1¾	..	ditto, .. ditto.			
	Dulle-ke, ..	¾	1	ditto, .. ditto.				2	2	Jarril Ját, .. ditto.			
	Middha,	1½	2	ditto, .. ditto.			Vazid-ke, ..	1¾	2	Wattú, ditto.			
	Pire-ke, ..	2	2	ditto, .. ditto.			Khewah Vazid-ke,	1	1½	ditto, .. ditto.			
	Dhandhi, ..	1½	2½	ditto, .. ditto.			Gujar Vazid-ke, ..	1½	1½	ditto, .. ditto.			
	Shabaz-ke, ..	1	1	ditto, .. ditto.			Pahulwan Lado-ke, ..	1	1	Wattú, Atari.			
	Bagghe-ke, ..	1	2½	ditto, .. ditto.			Wásti Lakhe-ke,	¾	1	ditto, .. Dhunian			
	Sadar Alam-ka, ..	¾	2½	ditto, .. ditto.			Wásti Bhi-ke,	¾	1	ditto, .. ditto.			
	Kári Bagge-ke, ..	¾	2½	ditto, .. ditto.			Villages on the left bank.						
	Luddú-ke, ..	¾	2½	ditto, .. ditto.			Gagan-ke, ..	2	½	Joyiá .. A.			
Lammochur, ..	¾	2½	ditto, .. ditto.		Súbhân-ke, ..	1½	2	Wattú, ditto.					
Keah,	1	1½	Bodela, ditto.		Mohamad-ke, ..	1½	2	ditto, .. ditto.					
7½ kos.	Bahak Mohan-ke, ...	1¼	3	ditto, .. ditto.		Kándar-ke, ..	3	¾	Karral, ditto.				
	Bahak Jamâl-ke, ...	1	1½	ditto, .. ditto.		Asafwálá, ..	1	1¾	Chisi, D. U.				
	Bahak Sak-ke-ke,	1¼	1½	ditto, .. ditto.		Jagvere,	3	..	Wattú, A.				
	Lado-ke, ..	½	1	Wattú, ditto.		Lakhe-ke, ..	1	¾	Bhatti				
	17th	Bahak Lashkar,	1¼	2½	Bodle, .. ditto.					Faqirs, ditto.			
		Bodle-ke, ..					Amru-ke, ..	¾	¾	Wattus, ditto.			
		Bahak Kalandar-ke, ..	1	1	ditto, .. K. B.		Bare-ke,	¾	2	ditto, .. ditto.			
		Rana Waltu, ..	1	½	Waltu, A.		Peropi,	1	1	Karrol, F.			
		Villages on the right bank.						Búngá Juvan-ka,	3	3	Pathán, G.		
		Bahbul-ke, ..	1	¾	Dogre, M.-ke.								
15 kos.	Mahmun-ke, ..	¾	1¼	ditto, .. D. U.		20th	Bahak Qalandar, ..	1	½	Bodle, .. Gúrjianá			
	Khugge-ke, ..	1	..	ditto, .. ditto.			Bedle-ke, ..						
	Jhuggian, ..	¾	..	Bodla, .. M.-ke.			Bubak Tawakkul, ..	2	½	ditto, .. ditto.			
	Parj Girain, ..	1	¾	Dogre, ditto.			Bodle-ke, ..						
	Lakke-ke, ..	¾	1½	Faqir			Gaddho-ke, ..	2½	¾	Wattú, ditto.			
				Butter, K.			Ratto-ke, ..	¾	¾	ditto, .. ditto.			
	Ajebwálá, ..	¾	1¼	Mokul			Chuni,	¾	¾	Chuni, ditto.			
				Ját, .. ditto.			Rehmû-ke, ..	1¾	..	Wattú, ditto.			
	Bhalil-ke, ..	1	¾	Bhambá			Kálu-ke, ..	1	¾	ditto, .. ditto.			
	Sarwan-ke, ..	1	1½	Bhambá, ditto.			Jassu-ke, ..	1	..	ditto, .. ditto.			
	Khanne-ke, ..	2½	..	Bhugge-ke Dogre, .. ditto.			Shurf Ali						
							Sháh,	1½	..	Seyad, ditto.			
	Khane-ke 2nd,	¾	1	ditto, .. ditto.			Bharam-ke, ..	1½	..	Wattú, ditto.			
	Pira-ke,	¾	1	ditto, .. ditto.			Mari,	1	..	ditto, .. M. W.			
	Nur Mohamad,	¾	¾	Rupal			Bachianwálá, ..	¾	..	ditto, .. ditto.			
				Dogre, ditto.			Jewaya Beloch,	¾	¾	Beloch, ditto.			
						Habib-ke, ..	1	1	Wattú, ditto.				
						Chakko-ke, ..	1½	1½	ditto, .. ditto.				

N. B.—K. B. stands for Killa Bumíwála. A. for Asafwála, M.-ke for Mahm.-ke. D. V. for Dóru Umál. K. for Kangpur. A. D. K., for Atari Dhundhia-ke. F. for Fattehghar. G. for Gurjorianá. M. W. Musáfran wála.

Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.		
		Apart.	Inland					Apart.	Inland				
Villages on the right bank.													
9 1/2 kos. 28th	Wásti Az- mat-ke,....	1/4	1	Wattú, C.	10 1/2 kos.	29th	Pir Sikandar,	1	1	Chishtí,	Q-ke.		
	Wáli Sháh,	1/4	1	Bodle, ditto.			1 1/2	1 1/2	Sullieré,	ditto.			
	Feje-ke,....	3/4	..	Téji Ját, M-ke.			1	..	ditto, ..	ditto.			
	Mahar,	2	1	Mahar, ditto.			1 1/2	1 1/2	ditto, ..	ditto.			
	Thakkar, ..	2	2	Wattú, ditto.			1	1	ditto, ..	ditto.			
	Thakkar 2nd,	2	2	ditto, .. ditto.			1 1/2	1 1/2	ditto, ..	ditto.			
	Wásti Ban- de-ke,	1/2	2	ditto, .. ditto.			1 1/2	1 1/2	do. Mus- li,....	ditto.			
	Kakke,	1	2	ditto, .. ditto.			1	1	Dáudpo- tra, ..	ditto.			
	Wásti Khajú- ke,.....	2 1/2	1	ditto, .. ditto,			1/4	1	Futtah- nu, ..	ditto.			
	Wásti Dari- ke,.....	1/4	1	ditto, .. L. W.H.			1/4	1	Jaddi	Ját, .. ditto.			
	Durraj-ke,..	3	1/2	Karral, ditto.			1/4	1	Khuggi,	ditto.			
	Bodle,.....	2	1/2	Bodle, ditto.			1/4	1	Ráin, ..	Jhada.			
	Zinde-ke, ..	2	2	Karral, L-ke.			Villages on the right bank.						
	Mauni-ke,..	3	2	Wattú, ditto.			Mári,	1 1/2	1 1/2	Chishtí,	K. K-ke.		
	Mablú ke, ..	3	1	ditto, .. Havelí.			Munar,	2	1	ditto, ..	ditto.		
	Kale-ke,....	1	1	ditto, .. ditto.			Bhúlání,....	1 1/2	1 1/2	Joyie, ..	B. T-ke		
	Mali-ke, ..	2	..	ditto, .. P. P.						Qilla.			
	Mali-ke 2nd,	2 1/2	..	ditto, .. ditto.			Mavánkot,..	3	1	Kulachi,	ditto.		
	Chakkú-ke, ..	1 1/2	1/2	ditto, .. ditto.			Núrá,.....	2	1 1/2	Sayad,	ditto.		
	Ahalu-ke, ..	2	1/2	ditto, .. ditto.			Feroza,	1	2	Sullwu,	ditto.		
Mahmú-ke, ..	1 1/2	1/2	ditto, .. K. K.	Tibbi Khán- wala,.....	3	2	Langah,	ditto.					
Malkani, ..	1 1/2	1/2	ditto, .. K. K-ke.	Lakho-ke, ..	5	..	Sullieré,	K. K-ke.					
Packa Bira- ham-ka, ..	2 1/2	1	ditto, .. ditto.	Ditto 2nd, ..	1 1/2	1 1/2	ditto, ..	ditto.					
Villages on the left bank.													
9 1/2 kos.	Husain Sháh,	1	1 1/2	Sayad, .. M.	9 1/4 kos.	30th	Wásti Maul- vi-ke,	1/2	1	Rain ..	Jhadú.		
	Lalle-ke, ..	1	..	Joyie of			Bungá Jiwan,	1 1/2	1 1/2	ditto, ..	ditto.		
	Bahádur-ke,	1/2	1/2	Mari, ditto.			Wásti Jiwan,	1 1/2	1 1/2	Joyie, ..	ditto.		
	Chave-ke	1/2	1/2	ditto, .. ditto.			Kalú Sháh,	1 1/2	1 1/2	Sayad,	ditto.		
	Gúzar,	1	1/2	ditto, .. ditto.			Núr Sháh, ..	2	1/2	ditto, ..	ditto.		
	Tobah,	1 1/2	..	Sayad, .. ditto.			Wásti Umar						
	Bhaura,	1	..	Udhieré, ditto.			Beloch-ke, ..	1 1/2	1 1/2	ditto, ..	ditto.		
	Jhandu	1/2	..	do. Wat- ditto.			Kora Bhútna	1	1 1/2	Bhutna,	ditto.		
	Khán, ...	1/2	..	tá, ditto.			Jáfar Sháh,	1 1/2	3	Sayad,	S. F.		
	Jahán Khán,	1/2	1/2	Abneri, ditto.			Shahar Suk- ka,.....	1 1/2	2	Luckou- ri,	ditto.		
9 kos.	Sher Maha- mad,	1/2	1/2	Udhuri, ditto.	Wásti Sial- ke,.....	1	2	Sial, ..	ditto.				
	Sháh ud din,	1/2	1/2	Bodla... ditto.	Gúl Sháh, ..	1	1	Sayad,	H.				
	Tugieri,	1 1/2	1	Udhieré, ditto.	Nuni,	1 1/2	1 1/2	Nuni, ..	ditto.				
	Kot Qáim Khán,	1/2	1/2	Lungah, Q-ke.	Feb. Korá Sháh,	3	1 1/2	Sayad,	ditto.				
	Mari Babul- ke,.....	1 1/2	1 1/2	Karral, ditto.	1st. Mojh Mahar,	1 1/2	1 1/2	Luch- veri, ..	ditto.				
	Bunga Jánu- ka,.....	1 1/2	1 1/2	Pathán, ditto.									
	Bunga Rami- ka,.....	1 1/2	1 1/2	ditto, .. ditto.									
Masta-ke, ..	1	1 1/2	Sullieré, ditto.										

N. B.—C. for Chinnan. M-ke for Maruf-ke. L. W. H. for Lukhe Wattú-ke. Haveli. L-ke for Lukhe-ke. P. P. for Pak Pattan. K. K. for Kot Kapurá. K. K-ke for Kot Kabúle-ke. M. for Músáfirow walá. Q-ke for Qásim-ke. B. T-ke for Baháwalgarh Tibbi-ke Qilla. B-ke for Baddura-ke. S. F. for Shahur Farid. H. for Hásilpur.

Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.	
		Apart.	Inland					Apart.	Inland			
8½ kos.	Mehrabpur, ..	1	1	Luch- veri, ..	H.	3rd	<i>Villages on the left bank.</i>					
2nd	Kallar-wah, ..	1	1	ditto, ..	ditto.		Sirdárpur, ..	2	2	Joyce, ..	Tufuri.	
	Boland Sháh, ..	1	1	Bodle, ..	ditto.		Joyce, ..	1	1	ditto, ..	ditto.	
	Sháh Hattie, ..	1	1	Dáudpo- tra, ..	ditto.		Lál-ke Jok, ..	1	1	ditto, ..	ditto.	
	Kore Sháh, ..	1	1	Sayad, ..	ditto.	Jok dúsra, ..	1	1	Dáudpo- tra and			
11½ kos.	Palra, ..	1	1	Dáudpo- tra, ..	ditto.	10 kos.	Játs, ..	1	1	ditto, ..	ditto.	
	Khái, ..	3	1	Ghazi Khana- ru, ..	ditto.		Sherpur, ..	1	1	ditto, ..	ditto.	
	Badhire, ..	1	1	Lakviri, ..	ditto.		Ghans Joyia, ..	1	1	ditto, ..	ditto.	
	Ghafúra, ..	2	1	Daultá- ná,	ditto.		Kúkari,	1	1	ditto, ..	ditto.	
8½ kos.	Bhadourn, ..	1	1	ditto, ..	ditto.	6th	Muttali, ..	1	1	ditto, ..	ditto.	
	Khairpur Chota, ..	2	..	Dáudpo- tra, ..	ditto.		Pipalli,	1	1	ditto, ..	ditto.	
	Núrpur, ..	1	1	Mixed, ..	ditto.		Sher Maha- mad Khán, ..	1	1	ditto, ..	ditto.	
	Tufuri, ..	1	1	Tufuri, ..	ditto.		2nd Mattali, ..	1	1	ditto, ..	Khairpur	
<i>Villages on the right bank.</i>						8½ kos.	Durpur,	1	1	ditto, ..	ditto.	
8½ kos.	Khokar, ..	1	2	Khokar, B-ke.			Wásti Mowl- vi-ke,	1	1	Mixed, ..	ditto.	
	Wásti Rahim Sháh, ..	1	1	Sayad, ..	ditto.		Wágé,	1	1	Wagi, ..	ditto.	
	Salderi,	1	1	Salderi, ..	ditto.		Gamu walur, ..	1	1	ditto, ..	ditto.	
	LakaSalderi, ..	1	1	ditto, ..	ditto.	Goth Bahú- dúr, ..	1	1	Dáudpo- tra, ..	ditto.		
8½ kos.	Kora Bhút- ná, ..	1	1	Bhútná, ..	ditto.	8½ kos.	Kálá Ahul, ..	1	1	Andu, ..	ditto.	
	Wásti Ha- kam-ke, ..	1	1	Karral, ..	ditto.		Mithi de Goth,	1	1	Sayad, ..	ditto.	
	Márú Khán Beloch,	1	1	Beloch, ..	ditto.		Gouhan,	1	1	Beloch, ..	ditto.	
	Umar Gurja, ..	1	1	ditto, ..	ditto.		Goth Morád Khán,	1	1	Dáudpo- tra, ..	G.N.M.	
8½ kos.	Tewanáh, ..	3	3	Tewani, ..	ditto.	8½ kos.	Goth Ali yár Khán,	1	1	ditto, ..	ditto.	
	Gohar,	2	5	Lakviri, ..	ditto.		Bhundi,	1	1	ditto, ..	ditto.	
	Láldeh,	2	4	ditto, ..	ditto.		Dera Putton- ka,	1	1	Beloch, ..	ditto.	
	Fodar,	1	3	Ját, ..	ditto.		Goth Núr Mahamad, ..	1	1	Dáudpo- tra, ..	ditto.	
8½ kos.	Arrain,	1	3	Rain, ..	ditto.	8½ kos.	<i>Villages on the right bank.</i>					
	Láldeh,	1	2	Daultá- ná,	ditto.		Pir Imám Din, ..	1	1	Sayáds, ..	Malsián.	
	Badura,	1	1	ditto, ..	ditto.		Malik Wá- hun, ..	2	2	Wasseir, ..	ditto.	
	Kahur,	1	2	Faqir, ..	ditto.		Azímpur, ..	2	2	Beloch, ..	ditto.	
8½ kos.	Sháda,	1	2	Daultá- ná,	B.	8½ kos.	Ahmadpur, ..	1	1	Of Be- lochori- gin, ..	ditto.	
	Bahar Karm Allá Sháh, ..	2	1	ditto, ..	ditto.		Qázi Maha- mad, ..	1	1	ditto, ..	ditto.	
	Kalú Sháh, ..	1	1	Sayad, ..	ditto.		Morádpur, ..	1	1	ditto, ..	ditto.	
	Hassan Sháh,	1	1	Kúkari, ..	ditto.		Ghauspur, ..	1	1	Mixed tribes and Ját, ..	ditto.	
8½ kos.	Karmpur, ..	1	3	Wasseir, ..	ditto.	8½ kos.	Fattehpur, ..	1	1	ditto, ..	ditto.	
	Moze Was- seir, ..	2	2	ditto, ..	ditto.							
	Dhalluan, ..	1	1	Bhubbi, ..	ditto.							
	2nd Wasseir, ..	1	1	Wasseir, ..	ditto.							
8½ kos.	Khángarh, ..	1	1	Bhabbi, ..	I. S.							
	Khánpur, ..	1	3	Rain, ..	Malsian.							

N. B.—B. for Badhourn. I. S. for Imám Sháh. G. N. M. for Goth Núr Mahamad.

Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.
		Apart.	Inland					Apart.	Inland		
	Kádirpur, ..	$\frac{1}{2}$	$1\frac{1}{2}$	Mixed tribes and Ját,	Malsián.	8th.	Dera Backa, Dera Gúl dí, Bilgani, ... Mír Qásim Sháh,	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1	$\frac{1}{2}$ 1 1 1 $\frac{1}{2}$	Beloch, ditto, .. ditto, .. Karwar, Majal, ..	D. B. N. ditto. ditto.
	Chela Wá- hun,	1	$1\frac{1}{2}$	ditto, ..	ditto.	$4\frac{1}{2}$ kos.	Mujal,	1	$\frac{1}{2}$	ditto.	ditto.
	Kutabpur, ..	2	1	ditto, ..	ditto.		Kasra,	1	1	Kasra,	ditto.
	Bahádur, ..	1	1	Wage, ..	K.		Ahsam,	$\frac{1}{2}$	1	Ahsam,	ditto.
	Wásti Mirú- di,	1	1	Mohar,	ditto.		Gidpura, ..	$\frac{1}{2}$	1	Joyce, ..	ditto.
	Sháh Abú Zálim, ...	1	1	Usra Ját, ..	ditto.		Rattani, ...	$\frac{1}{2}$	1	Dáudpo- tra, ..	ditto.
	Dera Lalle- de,	$1\frac{1}{2}$	1	Beloch,	ditto.		Bákarpur, ..	$\frac{1}{2}$	1	Channur	B.
	Wásti Hasil Beloch,	$\frac{1}{2}$	..	ditto, ..	ditto.		<i>Villages on the right bank.</i>				
	Dost Maha- mad-ke, ..	1	1	Dáudpo- tra, ..	ditto.		Moze Dera Deláwar, ..	1	1	Beloch,	Kehore.
	Moze Vazir Beloch, ..	$\frac{1}{2}$	$\frac{1}{2}$	Beloch,	ditto.		Wigha Mal,	$\frac{1}{2}$	$\frac{1}{2}$	Wigh Mal, ..	ditto.
	Moze Alla yár,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Gúl Mulhana Bahádur, ..	$\frac{1}{2}$	$\frac{1}{2}$	Mulhani	ditto.
	<i>Villages on the left bank.</i>						Sukar,	$\frac{1}{2}$	$\frac{1}{2}$	Wigh, ..	ditto.
							Kúl,	$\frac{1}{2}$	$\frac{1}{2}$	Seekar,	ditto.
							Phul,	$\frac{1}{2}$	..	Kúl, ..	ditto.
							Jans,	1	..	Phul, ..	ditto.
							AhurWahun,	$1\frac{1}{2}$	..	Waggan	ditto.
							Kotli Murád Ali,	$\frac{1}{2}$	..	ditto, ..	ditto.
							Wea,	$\frac{1}{2}$	..	Beloch,	ditto.
							Gúlám Ma- hamad, ...	$\frac{1}{2}$	..	Chattie,	ditto.
							Moze Kut- tabú,	$\frac{1}{2}$	..	Chawan,	ditto.
							Ahsam,	$\frac{1}{2}$	$\frac{1}{2}$	Daultá- ná, ..	Kehore.
							Hasilwálá, ..	1	$\frac{1}{2}$	Ahsam,	ditto.
							Nierwáhan,	1	1	Kansa,	ditto.
							Dodána, ...	$2\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
							Wásti Be- loch-ke, ...	$\frac{1}{2}$	..	Oojare,	ditto.
							Jhok Taka,	$\frac{1}{2}$	1	Beloch,	S.
							Stikrí,	2	2	ditto, ..	ditto.
							Guze Lahun- wála, ..	1	1	Chan- nur, ..	ditto.
										ditto, ..	ditto.

From Baháwalpur to Mithankot by the Rivers Gharra, Panjnad and Indus.

Villages on the left bank.

Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.
		Apart.	Inland					Apart.	Inland		
Feb. 25th	Goth Bajin Khán-ke, ..	$\frac{1}{2}$	$\frac{1}{2}$	Beloch,	B.	$11\frac{1}{2}$ kos.	Búlákiwáli,	1	$1\frac{1}{2}$	ditto, ..	L.
	Goth Mulla Ghanní, ..	$\frac{1}{2}$	$\frac{1}{2}$	Dáudpo- tra Gu- sani, ..	ditto.		Kach Hayett, ..	1	1	ditto, ..	ditto.
	Jawarwáli, ..	$\frac{1}{2}$	$\frac{1}{2}$	Ját Chun- nar, ..	L.		Bhuchar, ..	$\frac{1}{2}$	$1\frac{1}{2}$	ditto, ..	S. M.
	Khanawáli, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Goth Ghanní Khán, ...	$\frac{1}{2}$	$\frac{1}{2}$	Dáudpo- tra pir- jani, ..	ditto.
							Rowtana, ..	..	$\frac{1}{2}$	Koliar Ját, ..	ditto.

N. B.—K. for Kutabpur. D. B. for Dera Backa. N. for Nezinovah. B. for Baháwalpur. S. for Sirdárwah. L. for Lallapur. S. M. for Sirah Mustie.

Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.
		Apart.	Inland					Apart.	Inland		
3 kos. 26th.	Sammú Sata,	1	$\frac{1}{2}$	Koliar Ját, ..	S. M.		Othwal,	1	$\frac{1}{2}$	Sarru Ját, ..	Kotla.
	Wásti Muhabbat-ke,	1	1	Gurwan Ját, ..	ditto.		Motthi,	1	1	Sarru, ..	ditto.
	Bhaddi,	$\frac{1}{2}$	$\frac{1}{2}$	Uttera Ját, ..	Kutab.		Kotla Chakar,	$1\frac{1}{2}$	1	Motha Ját, ..	ditto.
	Eesan,	1	$\frac{3}{4}$	Mutha Ját, ..	ditto.		Moza Sultan,	$1\frac{1}{2}$	$\frac{3}{4}$	ditto, ..	ditto.
	Aman Sháh,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Goth Qádir-bakhsh, ..	1	$\frac{1}{2}$	ditto, ..	ditto.
	Naharwáli,	$\frac{1}{2}$	$\frac{1}{2}$	Ghallor Ját, ..	K. D.		Kotla Sháh Rupul,	1	$1\frac{1}{2}$	Kaniun Ját, ..	ditto.
	Kot Dadú Gallu,	$\frac{1}{2}$	2	Gallu Ját, ..	M.		Kikkarwáli, ..	1	$\frac{1}{2}$	ditto, ..	ditto.
	Muhabbatpur,	$\frac{1}{2}$	1	Dáudpo-tra, ..	ditto.		Wásti Sher-ke,	$\frac{1}{2}$	$\frac{1}{2}$	Goriyá, ..	ditto.
	Abdullapur, ..	$\frac{1}{2}$	$\frac{1}{2}$	Joyce Ját, ..	ditto.		Wásti Husain-ke, ..	$\frac{1}{2}$	$\frac{1}{2}$	Jubul, ..	ditto.
	Guzr Banb, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Batton,	2	1	Khinevon, ..	ditto.
	Khokar,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Jhitthewálá, ..	2	$\frac{1}{2}$	ditto, ..	ditto.
	Bhammú, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Murun Jíwálá,	2	$\frac{1}{2}$	ditto, ..	ditto.
	Mallikwall, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Pathana, ..	1	$\frac{1}{2}$	ditto, ..	ditto.
	Mallik Sikandar,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Wasti Bhari-ke,	1	$\frac{1}{2}$	Ghallu, ..	ditto.
	Gallú,	2	$\frac{1}{2}$	Gallú Ját, ..	ditto.		Villages on the left bank.				
	Pipli kanjan-ke,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Kanúwálá, ..	$1\frac{1}{2}$	1	Ghallu Ját, ..	A.
	Alliwáhun, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	A.		Ghallu, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
	Phagwára, ..	$\frac{1}{2}$	1	ditto, ..	ditto.		Behli Wahál-ke, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
	Uthwál,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Jundwadda, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
	Kabbul,	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Wásti Shakar Khán, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
Villages on the right bank.							Ismailpur, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
10 kos.	Miani,	$\frac{1}{2}$	$\frac{1}{2}$	Ját Tuhi, ..	A. W.		Wásti Mahamad Khán, ..	1	$\frac{1}{2}$	Dáudpo-tra, ..	ditto.
	Wásti Abád-ke,	1	$\frac{1}{2}$	Ját Chun nar, ..	ditto.		Goth Kheir Khán, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
	Kikri,	1	$\frac{1}{2}$	ditto, ..	ditto.		Goth A'lam Khán-ke, ..	$\frac{1}{2}$	$\frac{1}{2}$	Ghallu, ..	ditto.
	Wásti Tse-ke,	1	$\frac{1}{2}$	Koliar Ját, ..	ditto.		Jhangra, ..	1	$\frac{1}{2}$	ditto, ..	Jhangra.
	Do. Gholam Mahamad, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Kissamwálá, ..	$\frac{1}{2}$	1	Husain Ját, ..	ditto.
	Badhi, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Moza Dahar, ..	1	$\frac{1}{2}$	ditto, ..	ditto.
	Kallar wah, ..	1	$\frac{1}{2}$	Pucka-war, ..	ditto.		Mírpur, ..	$\frac{1}{2}$	$\frac{1}{2}$	Khukki, ..	ditto.
	Baghowali, ..	1	1	Koliar Ját, ..	ditto.		Kirree,	$\frac{1}{2}$	2	ditto, ..	ditto.
	Batta Kotla, ..	$\frac{3}{4}$	$\frac{1}{2}$	ditto, ..	K.		Juméwáli, ..	$\frac{1}{2}$	2	Beloch, ..	ditto.
	Sodra,	$\frac{1}{2}$	1	Dáudpo-tra, ..	ditto.		Kot Imám Din, ..	$\frac{1}{2}$	4	ditto, ..	ditto.
	Hyatpur, ..	$\frac{1}{2}$	$\frac{1}{2}$	Koliar Ját, ..	ditto.		Moza Bakar, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
	Wásti Bijrans de, ..	$\frac{1}{2}$	$\frac{1}{2}$	Uttera, ..	ditto.		Bakra,	1	1	Punnu Ját, ..	Bukru.
	Yaruka chack,	$\frac{1}{2}$	$\frac{1}{2}$	Rutta Ját, ..	Kotla.		Jiendwálá, ..	2	1	Beloch, ..	ditto.
							Chunhan, ..	$\frac{1}{2}$	2	Kohile, ..	ditto.
							Rassálpur, ..	$\frac{1}{2}$	2	ditto, ..	ditto.
							Guzr Makhanbela, ..	$\frac{1}{2}$	1	Beloch, ..	ditto.

N. B.—K. D. for Kot Dadá. M. for Mubárikpur. A. for Alliwáhun. A. W. for Adam Wahán-ke. K. for Khán wah.

Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.	Length of Stages and date.	Names of Villages.	Distance kos.		Caste.	Jurisdiction.
		Apart.	Inland					Apart.	Inland		
Villages on the right bank.											
	Jumma						Moza Ma-				
	Ghaltu, ..	$\frac{1}{4}$	$\frac{1}{4}$	Ghallu, U.			long,	1	1	Malung, Uch.	
	Gagū wālá, ..	$\frac{1}{4}$	$\frac{1}{4}$	ditto, ..	ditto.		Khori,	..	1	Bhuttan, ditto.	
	Bahū wāla, ..	$\frac{1}{4}$	$\frac{1}{4}$	Khunb, ditto.			Thul Mastu-				
	Lal Jubul, ..	$\frac{1}{4}$	$\frac{1}{4}$	Ghallū, ditto.			wālá,	..	2	ditto, ..	ditto.
	Miani, ..	$\frac{1}{4}$	$\frac{1}{4}$	Jabeil, ditto.			Moza Phi-				
	Sharifwāli, ..	$\frac{1}{4}$	$\frac{1}{4}$	Ghallū, ditto.			randi,	..	2	Phirande ditto.	
	Bakhuwāli, ..	$\frac{1}{4}$	$\frac{1}{4}$	ditto, ..	ditto.		Moza Abid, ..	1	1	ditto, ..	ditto.
	Jablā, ..	2	$\frac{1}{2}$	ditto, ..	ditto.		Wāsti Ibrā-				
	Moza						him Mullah, ..	$\frac{1}{2}$	$\frac{1}{2}$	Mullah, ditto.	
	Puckawar, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Jhoki Jāfar				
	Duggar, ..	1	$\frac{1}{2}$	ditto, ..	ditto.		Shāh-ke, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.
	Skirance, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Hontah, ..	1	1	Mullah, ditto.	
	Miani, ..	1	$\frac{1}{2}$	ditto, ..	ditto.		Kāim Unnar, ..	$\frac{1}{2}$	$\frac{1}{2}$	Unnar, ditto.	
	Kaddū Jhu-						Wazwar, ..	$\frac{1}{2}$	$\frac{1}{2}$	Wagwar, ditto.	
	lan ..	$\frac{1}{2}$	1	ditto, ..	ditto.		Chuvoun, ..	1	1	Chuvoun ditto.	
	Sheir Khān, ..	$\frac{1}{4}$	$\frac{1}{4}$	ditto, ..	ditto.		Bakhu Khan-				
	Noraja, ..	$\frac{1}{4}$	$\frac{1}{4}$	ditto, ..	ditto.		da Mad, ..	1	1	Dabar, Sheidané	
	Mumū Jā-						Wagwan, ..	1	2	Wagu, ..	ditto.
	beil, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Sūmū-ka, ..	2	$2\frac{1}{2}$	Sūmāka, S-ka.	
	Arra, ..	1	$\frac{1}{2}$	ditto, ..	ditto.		Kehul,	$\frac{3}{4}$	$\frac{3}{4}$	Kehul, ..	ditto.
	Barkhūrdār						Moghal, ..	1	2	Mahar, ditto.	
	Jabeil, ..	1	$\frac{1}{2}$	ditto, ..	ditto.		Chachar,	$\frac{1}{2}$	$\frac{1}{2}$	Chachar, G.	
	Ubhawāri, ..	2	1	ditto, ..	ditto.		Villages on the right bank.				
	Saiful, ..	$\frac{1}{4}$	$\frac{1}{4}$	ditto, ..	ditto.		Moza Hassū				
	Suleimān, ..	$\frac{1}{4}$	$\frac{1}{4}$	ditto, ..	ditto.		Massū,	1	2	Beloch, Ghalluān	
	Pahālpur, ..	$\frac{1}{2}$	$\frac{1}{2}$	ditto, ..	ditto.		Mahamad				
	Langur,	1	$\frac{1}{2}$	ditto, ..	ditto.		Kh n,	1	1	ditto, ..	ditto.
	Hāfiz Abdul						Sāwanwāli, ..	1	1	Mullah, ditto.	
	Rahim, ..	1	1	ditto, ..	ditto.		Sitpūr,	2	1	ditto, ..	Sitpūr.
	Langāh, ..	1	1	Langāh, K.			Jhullan,	1	2	Jhullan, ditto.	
	Haveli						Khāngarh, ..	1	1	Hattū, ditto.	
	Hinduān, ..	2	$\frac{1}{4}$	Hindu, ditto.			Moza Bhat-				
	Pabban, ..	1	1	Rukh, ..	ditto.		tar,	..	1	Bhattar, ditto.	
	Shirni, ..	$\frac{1}{2}$	1	ditto, ..	ditto.		Khānpur, ..	1	2	Indre, ..	ditto.
	Benth Mūsa-						Kot Alla Yār				
	ka, ..	1	$\frac{1}{2}$	ditto, ..	ditto.		Mahamad, ..	$\frac{1}{4}$	$\frac{1}{4}$	Purrai, ditto.	
	Dhammur, ..	$\frac{1}{2}$	$\frac{1}{2}$	Dham-			Moza Pannū, ..	2	1	Pannū, ditto.	
				mur, ..	ditto.		Phoba,	..	1	Utteru, ditto.	
	Chun Jan, ..	2	3	Chunjan ditto.			Wāsti Nan-				
	Mongh,	1	1	ditto, ..	ditto.		dan,	..	1	Jhullan, ditto.	
	Azmuth,	1	2	Pannu, Ghalluān			Wāsti Sone-				
	Bāli,	$\frac{1}{2}$	$\frac{1}{2}$	Mulun, ditto.			ke,	..	1	Bhuttur, ditto.	
Villages on the left bank.											
	Moza Lāl, ..	2	2	Beloch, Uch.			Mud Lash-				
	Mahamad						kari,	..	1	Jhullan, ditto.	
	Khān,	2	2	ditto, ..	ditto.		Dohar,	$\frac{1}{2}$	$\frac{1}{2}$	Dahar, B. E.-ka.	
	Wāsti Dur-						Dhaka,	$1\frac{1}{2}$	$2\frac{1}{2}$	Hindu, Dhako.	
	gochree, ..	2	2	Dargoch			Lang,	$\frac{1}{4}$	$\frac{1}{4}$	Lang, ditto.	
	Miani,	2	2	Mun-			Phattar,	1	$\frac{1}{4}$	Thattar, ditto.	
				charri ditto.			Wāsti Ya-				
	Jhullan,	1	1	Jhullan, ditto.			randi,	1	2	Gopang ditto.	
	Nūr wā á, ..	1	1	ditto, ..	ditto.		Dost Maha-				
							mad Khān, ..	$\frac{1}{4}$	$\frac{1}{4}$	ditto, ..	ditto.
							ihambir, ..	$\frac{1}{2}$	$\frac{1}{2}$	Mehar, ditto.	
							Kot Mithan, ..	3	2	Beloch, M.	

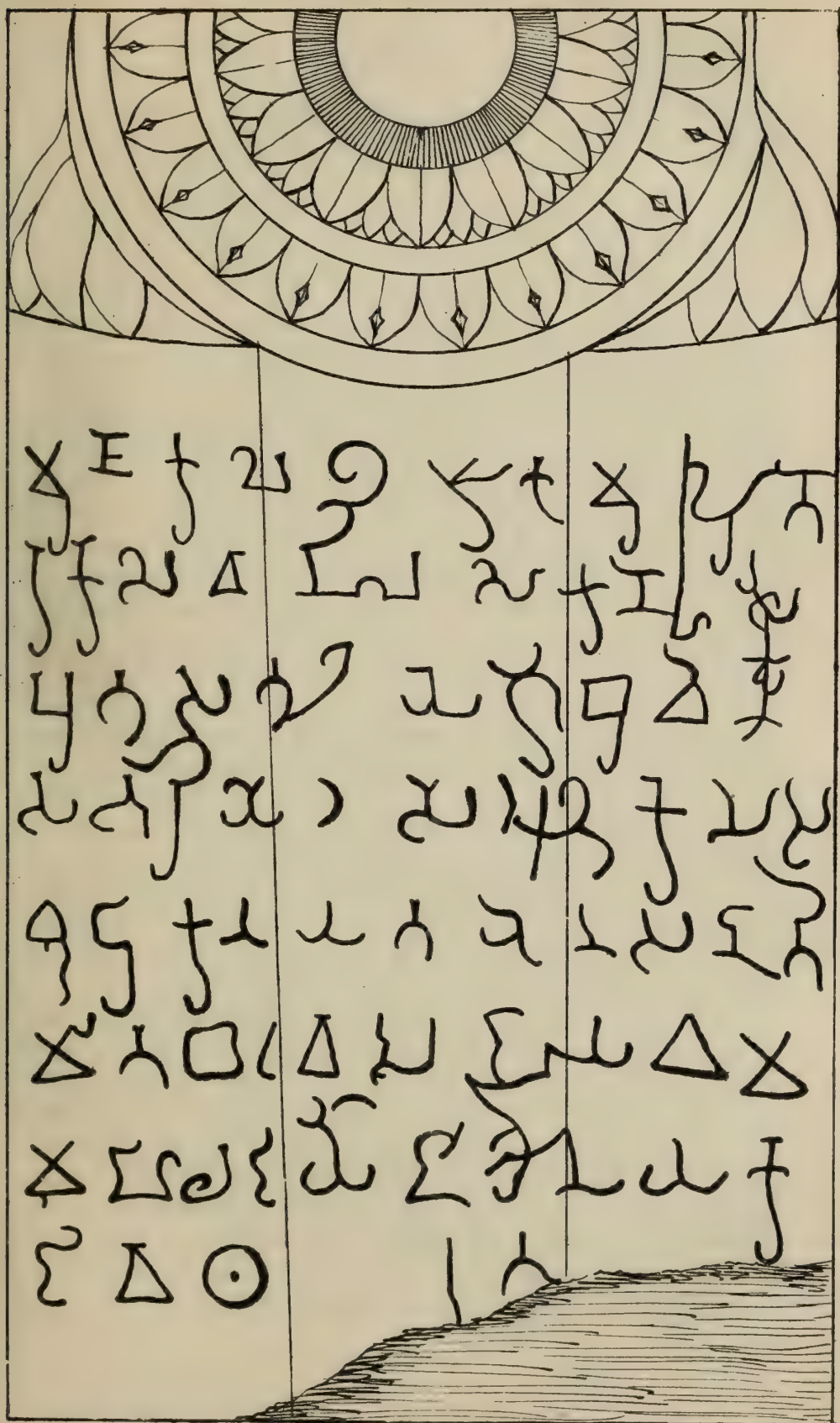
N. B.—U. for Udhawara. K. for Khanbela. S.-ka for Sūmū-ka. G. for Ghansur. B. E.-ka for Benth Esā-ka. M. for Mithankot.

III.—*Facsimiles of Ancient Inscriptions ; continued from page 97.*

In the library of the Asiatic Society are ten manuscript volumes of drawings of sculpture, images, architecture and inscriptions, forming part of the celebrated collection of the late Colonel MACKENZIE. The greater portion of these are as yet unknown and undescribed. None of the series, as far as we can ascertain, have been published, nor are we aware of any attempt having been made to decypher the inscriptions. It is greatly to be wished that the whole of these interesting documents could be digested in some convenient arrangement and made accessible to the learned world, especially now that the invention of lithography offers a cheap and expeditious means of effecting such an object. We were in hopes of combining their publication in the form of a volume or two of plates, with the digest of the MACKENZIE manuscripts, which, at the recommendation of the Society, the Government has lately entrusted to the Rev. W. TAYLOR at Madras, the author of "Oriental Historical manuscripts." As a specimen of the contents of these curious volumes, Captain CUNNINGHAM has kindly favored me with the two lithographs numbered as Plates X. and XI. He has selected the two longest inscriptions from the volume, No. 18, entitled "Antiquities at *Amarávatí*," a town in the *Berár* province, situated on the *Kistna* river to the west of *Nágpur*.

The volume in question contains a multitude of very beautiful drawings of the elaborate sculpture for which the ruins at that place are so remarkable. One of the slabs of stone, depicted among the rest, now forms a principal ornament of the Society's museum, and the execution of the lively scene it represents has been frequently and deservedly admired. The majority of the sculptures of *Amarávatí* seem to belong to a magnificent *dehgopa* or Buddhist shrine; but there is an admixture towards the end of the volume of objects of the linga worship. An accurate map of the town is prefixed, whence it appears that the ruined *dehgopa* whence the relics are taken was on a mound of 150 feet diameter, now converted into a tank. It is called *Dipal-dinna*, (translated by Colonel MACKENZIE "the mound of lights,") which so resembles the name of a similar place of Buddhist celebrity in Ceylon (*Dambadinna*) that we imagined, on seeing the inscription from the east side of the gateway (Pl. X.), some mistake must have been committed; for on comparing the characters with Plate XXVIII. of the Journ. As. Soc. vol. v. p. 554, their perfect identity with the Ceylonese type of old *Nágari* was manifest: indeed the three initial letters appear to form the same word "*mujikè*" . . . and the same combi-

FACSIMILE OF AN INSCRIPTION on the East side of the S. Gateway
OF DIPALDINNA AT AMRAWUTTY.



nation there recognized as "*Mahārāja*" . . . drew Captain CUNNINGHAM's attention while copying the penultimate line of the present inscription. No doubt the whole of this class of cave and *chaitya* inscriptions are intimately connected, and refer to the same age; and however illegible now, they will ultimately yield to the persevering progress of antiquarian research.

The second inscription, occupying the two sides of Plate XI. is altogether of a different class, although the book states it to have been procured from the same town, *Amarávatí*. In WILSON's catalogue of the MACKENZIE MSS. vol. ii. page xxvii. we find notice of a "report of the progress of *Anand Ráo* (one of the *Colonel's* travelling collectors) on his journey in the *Dharanikota*, *Amarávatí*, and *Bender* districts in the Telugu country for the year 1817." This would, doubtless, afford all the requisite information respecting the discovery and position of the fragment, were the report in our possession; but it seems to have been sent to *England* with the bulk of the manuscripts, and thence probably it has found its way to *Madras*. Should this be the case we shall not appeal in vain to the Editor of the *Madras Literary Journal* to supply us with any extract that may throw light on the subject.

The stone is noted down as 5 feet long by 17 inches in width. It is in very good preservation, as far as it goes, but the loss of the left half of the summit, and the fracture at the lowermost line, render it doubtful how much of the text may have preceded or followed that which remains.

The character has much resemblance to that of some of the cave inscriptions at *Mahábalipur* and other places to the westward; the essential portion of each letter also assimilates very closely to the alphabets of the *Chattisgarh* and *Seoní* inscriptions, and this has served as the key by which I have effected the transcription of the whole.

It is worthy of remark, that in this alphabet, which we may aptly denominate the *Andhra* character from its locality, may be traced the gradual transition from the more simple Devanágari of Northern India, (No. 2 of *Allahabad*, *Gaya* and *Guzerat*) to the complicated or florid writing of the Southern Peninsula. On comparing it with the *Hala Canara*, or ancient *Carnatic*, the letters *n*, *t*, *y*, *r*, *l*, *kh*, *th*, *dh*, *bh*, which may be regarded in some degree as test letters, because they have undergone more variation than others in the modern writing of different provinces, are nearly identical. There is also an incipient loop in the lower line of many of the letters which becomes afterwards more developed in the west and south. The *Telinga* or *Telugu* character

is one step further removed, but it springs directly from the *Hala Canara*, and retains many of the *Andhra* letters still unchanged, particularly the *dh* and *th*. In the accompanying plate (xii.) we have thought it worth while to exhibit these resemblances, and point out the peculiarities noted, that no means may be neglected of facilitating the examination of other inscriptions that may link on naturally at either end of this fragment of the chain of our Indian palæography.

After having made the transcript according to the assumed value of each letter, it was revised and corrected in all doubtful points by reading it over with MA'DHORA'Y* pandit, the aged librarian of the Sanskrit college, who, from having been with Colonel MACKENZIE, is better versed in the varieties of the Nāgarī alphabets than any pandit in *Calcutta*. Where the context did not make sense, the letters were carefully analyzed and all possible variations of each letter suggested, until the true or most probable reading was apprehended. Although some few doubtful passages remained, and many orthographical errors were detected, the context was sufficiently intelligible, and satisfactory. In some few instances (as in lines 6, 8, and 17) the distinguishing stroke or dot of the letter *n* has been omitted either by the sculptor or by the transcriber. The omission can be supplied without hesitation, as no other letter occurs at all similar in form. The cross of the *k* in lines 7 and 8 is also wanting.

For the translation we are indebted to the Rev. Mr. YATES, whose critical knowledge of the Sanskrit enables him to give it the correct grammatical construction which might evade an oral interpreter depending upon a vernacular explanation by the pandits.

Transcript of the Amarāvati Inscription.

- 1 .. ये नार्या अतोत्थि भुदेवता अ ..
- 2 .. रेणा वा मातृकाधरेणा वा शीलवता
- 3 .. र्मरिपालनोय पिवरपिण्डवात भयनास
- 4 कर्त्तव्यं आत्र विनयाभिधर्मपाधखे भिक्त ..
- 5 राज्ञि कामापत्तिमापन्नेन नवस्तव्यं संघावशेष ..
- 6 न्यया प्रति द्यादेसति नवस्तव्यम् संघाय दान

* It was MA'DHORA'Y who aided Captain TROYER in the *Allahabad* inscription, J. A. S. vol. ii.

- 7 टंक दातव्यं श्रीलसम्पन्नेभ्योश्चमरणरेभ्यः पि (धा)
 8 तव्य धर्मकथिकाय त्रिगुणो लाभः बोद्यतारिक
 9 स्य सोवस्थानन्नदातव्यं सद्धर्म लेखकाय द्विगुणोला (भः)
 10 घटसपराज्य मासम्पति मासम् पुः
 11 नुलेपनैः वैशाख पुर्णमास्याम्बिशेष
 12 प्रतिटत्रकेन परिचारेणा भवितव्यं इति ध
 13 मात्रादिकस्य वामम पुण्यराशेर्भा गो भ
 14 र्दघातक पितृघातक सुहृद्घातक देवद्विज
 15 महापाप कारिणां तत्त्रियेन परिवाडयन्ति....
 16 (रा) ज्ञा संघसन्नीढनं कृत्वा महाघोराग्निः प्र
 17 राजवत्सित्रबुद्धस्य शासनं लोकशासनं सोभ
 18 लम्बशाखो शासनवृक्षश्चिरं स्थातु ॥ स्थातुबि ..
 19 समग्रा सर्वोबलोका सुखीभवतु ॥ याव
 20 धिपितरं शुप्रबलितमकरक्षेभिताम् बखम
 धवद ... दि तं.....

The few alterations found necessary by Mr. YATES will be best understood from the insertion of his reading at length : we may however here notice one or two peculiarities or faults of orthography remarked by the pandits. The *r* of धर्म in line 8 is written thus, धरम् :—the word सुहृद्, friend, in line 14, is written *Surhhd* with a double *h*, and the *r* superposed :—The *anuswara* is often replaced by the *म्* at length : the *ज्ञ* is a compound letter formed by suffixing *ण* to *ज* ; and the *च* is in like manner formed by the union of the *क* and the *ष*, as is observable in other old alphabets, proving that these anomalies to the otherwise beautiful and perfect arrangement of the Sanskrit alphabet, are of comparatively modern introduction.

The purport of the inscription refers, in all probability, to the foundation and endowment of some Buddhistic institution by the monarch of the day. His name cannot be extracted from the passages extant. It is evident, therefore, that history will gain nothing by the

document;—nor can any of the loose chronicles of the Hindu dynasties of *Telinga* or the *Carnatic* be expected to throw much light upon the period when *Amarávati* was subject to their hated opponents, the followers of the *Buddhist* creed.

Modified Transcript by the Rev. W. YATES.

येनार्थातिथि भूदेवता धुरन्धरेणवामाढकापरेण वा शीलवता स
मरिपालनीय पीवर पिण्डघात भयनाशनं कर्त्तव्यं।
अथ विनयाभिधर्मबाधकै भक्तकै राज्ञि कामापत्तिमापन्नेन न वस्तव्यं।
संघावशेषेऽन्यथाप्रतिवादे सति न वस्तव्यं।
संघाय दानकं दातव्यं शीलसम्पन्नेभ्यः अमणकेभ्यः पिण्डं दातव्यं।
धर्म कथिकाय त्रिगुण लाभः ।
बौद्धतार्किकस्य स्ववस्थानं न दातव्यं।
सद्धर्मलेखकाय द्विगुण लाभः सदाशयराजाय मासं प्रति मासं
पुष्पानुलेपनै वैशाख पौर्णमास्यां विशेष घट प्रतिष्ठाढकेण परिवारेण भवितव्यं।
इति मात्रादिकस्य वा मम पुण्यराशेर्भागः भर्तृघातक पिण्डघातक सुरुद्धातक
देवद्विजमहापापकारिणां तत्तु। येन परिपालयन्ति राजानः संघसञ्छेदनं
हत्वा महाघोराग्निः पुण्यराज्यवर्त्तिवृद्धस्य शासनं।
लोक शासनं शुभभलमधंशःखे शासनं वृत्तस्त्रिरं स्याता।
स्यात्तु च समन्तात् सर्व्वे च लोकाः सुखीनो भवन्तु।
थावद्दीचीतरङ्गप्रचलितमकरचोमिताम् भूसम।

Translation.

(Two words omitted here as belonging to something before).
— By the virtuous man who relieves the guest and the bráhma-
man, and who is kind to parents, the fear of necessary food ought
not to be entertained. He who experiences disappointment near a
king feasting with even the mild opposers of virtue, ought not to
abide there, nor ought he to abide where injustice is practised. We
ought to give to all. Food ought to be given to the laborers who
are virtuous. Three-fold gain should be given to the speaker of truth.
Place is not to be given to the disputer of Buddhism. Two-fold gain
should be given to the teacher of religion. To the good king tribute
must be paid monthly with flowers and perfumes, and on the full
moon in the month Vaishakha he ought in particular to be presented
with the jar. My virtue and that of my ancestors is for the salvation

COPY OF AN INSCRIPTION
FROM AMRAVATI

COL MACKENZIE'S MSS.

1

သက္ကရာဇ် ၁၀၀၀ ခုနှစ်

2

၅ ရာသာမာ နှစ် ၁၀၀၀ ခုနှစ်

3

ဧည့်သည်တော်တို့အား

4

တံတိုင်းနှင့် နယ်နိမိတ်

5

၇၀၀၀ နှစ် ၁၀၀၀ ခုနှစ်

6

၇၀၀၀ နှစ် ၁၀၀၀ ခုနှစ်

7

၇၀၀၀ နှစ် ၁၀၀၀ ခုနှစ်

8

၇၀၀၀ နှစ် ၁၀၀၀ ခုနှစ်

9

၇၀၀၀ နှစ် ၁၀၀၀ ခုနှစ်

5 Feb 5

Comparison of the Amaravati character with other alphabets

	Allahabad	Nerbudda	Kistna	Canara modern	Telinge modern
k	𑂀	𑂁	𑂂	𑂃	𑂄
k/i	𑂅	𑂆	𑂇	𑂈	𑂉
g	𑂊	𑂋	𑂌	𑂍	𑂎
gh	𑂏	𑂐	𑂑	𑂒	𑂓
ng	𑂔	𑂕	𑂖	𑂗	𑂘
ch	𑂙	𑂚	𑂛	𑂜	𑂝
chh	𑂞	𑂟	𑂠	𑂡	𑂢
j	𑂣	𑂤	𑂥	𑂦	𑂧
jh	𑂨	𑂩	𑂪	𑂫	𑂬
ny	𑂭	𑂮	𑂯	𑂰	𑂱
t	𑂲	𑂳	𑂴	𑂵	𑂶
th	𑂷	𑂸	𑂹	𑂺	𑂻
d	𑂼	𑂽	𑂾	𑂿	𑃀
dh	𑃁	𑃂	𑃃	𑃄	𑃅
n	𑃆	𑃇	𑃈	𑃉	𑃊
t	𑃋	𑃌	𑃍	𑃎	𑃏
th	𑃐	𑃑	𑃒	𑃓	𑃔
d	𑃕	𑃖	𑃗	𑃘	𑃙
dh	𑃚	𑃛	𑃜	𑃝	𑃞
n	𑃟	𑃠	𑃡	𑃢	𑃣
ɹ	𑃤	𑃥	𑃦	𑃧	𑃨
ph	𑃩	𑃪	𑃫	𑃬	𑃭
b	𑃮	𑃯	𑃰	𑃱	𑃲
bh	𑃳	𑃴	𑃵	𑃶	𑃷
m	𑃸	𑃹	𑃺	𑃻	𑃼

gutturals

palatials

Linguals

clenata

Zabins

	<i>Allahabad</i>	<i>Nerbudda</i>	<i>Kistna</i>	<i>Canara modern</i>	<i>Telinga modern</i>
y	ய	ய	య	య	య
r	ర	ర	ర	ర	ర
l	ల	ల	ల	ల	ల
v	వ	వ	వ	వ	వ
s	శ	శ	శ	శ	శ
sh	ష	ష	ష	ష	ష
s	స	స	స	స	స
h	హ	హ	హ	హ	హ

Liquid

Sibyllants

compounds

ksh 𑌕 𑌖 𑌗 𑌘 𑌙
jn 𑌚 𑌛

Initial and medial vowels.

a	ḥ	ḥ	ḥ	ḥ	ḥ
á	ḥ	ḥ	ḥ	ḥ	ḥ
i	ḥ	ḥ	ḥ	ḥ	ḥ
í	ḥ	ḥ	ḥ	ḥ	ḥ
u	ḥ	ḥ	ḥ	ḥ	ḥ
ú	ḥ	ḥ	ḥ	ḥ	ḥ
e	ḥ	ḥ	ḥ	ḥ	ḥ
ká	ḥ	ḥ	ḥ	ḥ	ḥ
ke	ḥ	ḥ	ḥ	ḥ	ḥ
ki	ḥ	ḥ	ḥ	ḥ	ḥ
ku	ḥ	ḥ	ḥ	ḥ	ḥ
ko	ḥ	ḥ	ḥ	ḥ	ḥ

Vowels

မှ ဘ ချာ လ ရံ မှု ပွဲ ဂါ ဟူ က် စို နှိ ညး ။
form. ye no su rtt mm rbhi ryá sy kha ji rhk jn :

of murderers of husbands, murderers of fathers, and murderers of friends, and of those who have committed great sins against the gods and bráhmans. The kings that do not regard this kingdom preserving religion of BUDDHA, shall by it be cut off with all their family and perish in a flaming fire. May this very excellent religion of the people resembling a tree, remain in heaven for ever, and may people in all directions through its remaining, be happy as long as the sea continues to be agitated by marine monsters....

IV.—*Note on a Specimen of the Bos Gaurus.* By Dr. GEORGE EVANS,
Curator of the Medical College.

[We are indebted to Lieut. G. ABBOTT, 15th N. I. for the faithful lithographic representation of this skull in Pl. XVI.—ED.]

As I have reason to believe that very little is known of the *Gaur* (*Bos Gaurus*), or the animal generally considered by our Indian sportsmen as the Bison of the Indian forests and jungles, and thinking it might prove interesting, I have sent for the inspection of the Members of the Asiatic Society, who may be present at the next ensuing meeting, an exceedingly fine cranium of one of these very rare animals, which has recently been presented to me by a gentleman residing in the *Sambhalpur* district.

For want of good and select specimens of heads of the genus *Bos*, I am unable to offer any valuable remarks drawn from comparative observation of the osteological structure, so as to determine with anatomical precision whether it actually belongs to the Bisontine or Taurine group of the genus. I am, however, inclined to assign it to the latter, or otherwise to consider it as an intermediate species connecting the two divisions with each other; and what would seem to favor this intermedial arrangement, is its differing from both in some very essential points, and again corresponding with each in many of its generic relations.

In the present specimen, which is that of an old male, the forehead is deeply concave, broader than high, (taking the middle of the orbits as the base,) having a strong scabrous arched crista at the summit of the head, where it joins the parietal bone, to which it is firmly accreted: from this and the lateral parts of the frontal bone, a little above the declension of the orbits, proceed strong, thick-set and gently recurvent horns, the points turning towards the face. The orbits are remarkable for their lateral projection from the body of the

os frontis, in which respect the animal bears a marked resemblance to the Cervine race, as also by the pointed form of the nose, both which tend to give a peculiar character and wedge-like form to the head and face. There is also a deviation in the sudden termination of the full labial bones in their progress to the ossa nasi, which I do not observe in the heads of any of such of the domestic species as I have had an opportunity of examining; or even in those of the several buffaloes in my possession, their attachment being exclusively confined to the superior maxillary bones, without having any connection with those of the nose, which latter are large, broad and well arched, affording a very extensive chamber for the free passage of air, and also for the full expansion of the organ of smell. From this conformation I make no doubt that the animal is capable of enduring long-continued exertion: is possessed of exquisite scent, and that the intonations of the voice are thereby rendered deep, hollow and sonorous. In short, the whole formation of the head of this colossal bull appears to correspond with that of the fossil *Urus* found in different parts of Europe, and it unquestionably displays a vast extent of power to defend and assault, combined with great personal courage and precision in attack; and I have no doubt that he must often prove a most formidable antagonist to the tiger, the wild buffalo, and other tenants of his geographical range.

In looking over the different crania in the Society's museum, I find an imperfect skull (merely horns and forehead) marked "*Gaur*," which agrees with my specimen only in the shape of the horns, but the forehead is rounded as in the buffalo, and not cristated as in my specimen, which I look upon to be the true *Gaur* (*Bos Gaurus*) confined to the more sequestered and elevated tracts of Central India; and the above mentioned, that of the *Gayal* (*B. Gavæus*), wanting the occipital ridge, and dispersed more about the mountainous districts of the eastern provinces, unless indeed it prove to be the female of the one here described: but the propriety of classing even this and the *Yák* (*Bos Poephagus*) with the Bisons, may be questioned if external similitude has alone led to the arrangement. The only true standard for settling their mutual affinities and establishing their right to be included under the one or the other of the *artificial* divisions, which the difference observable in animals of the same genus, constituting varieties, has compelled naturalists to resort to, would be a strict inquiry into their individual osteological peculiarities, placing those under the Bisontine group, which, corresponding pretty generally in their external characters with each other, have, like the American Bison

fig. 1



fig. 2



Lt. Abbott del.

(*B. Americanus*), the type of the existing species, fifteen pairs of ribs—those with fourteen pairs, the intermediate link, to which the two above varieties and the *Yák* would most probably belong—and those with only thirteen pairs should be considered as the true Taurine which would include all our domestic kine.

Measurement of the Gaur's head (B. Gaurus) compared with the up-country bullock and the wild buffaloe.

	Gaur.		Up-count. Bullock.		Wild male Buffaloe.	
	Ft.	In.	Ft.	In.	Ft.	In.
Length of the head from the tip of the nose to the summit of the crista,	1	11.3	2	0.0	2	0.0
Breadth of the occipital ridge between the roots of the horns,	0	10.5		7.5		5.0
— across the forehead at the greatest projection of the orbits,		10.0		8.2		10.5
— at the narrowest part of the forehead, ..		8.5		6.4		8.2
Depth of the occipital plane, from the great foramen to the top of the crista,		9.0		4.2		6.0
— of the superior maxilla from its junction with the nose of the alveolar edge of the molar tooth,		5.7		5.5		7.0
Breadth of the nasal fossa,		3.7		2.7		3.5
Height of do. from the palatine bone,		3.5		3.0		3.3
Length of the horn at its greatest curvature, ...	2	0.3		10.7		?
Circumference at its base,	1	4.2		7.1		?

V.—*Memorandum on the Gaur and Gayal. By Assistant Surgeon J. T. PEARSON, Cur. Mus. Asiatic Society.*

At the last meeting of the Society a paper was read, purporting to be a notice on the head of the *Gaur*, by Mr. EVANS. In that paper the author stated that he went into the Museum of the Society and found a specimen, consisting of the horns and part of the skull of a bovine animal, marked "*Bos Gaur*," but which in reality belonged to the *Gayal*, another large animal of the same group, a native of the forests of *Chittagong*. It may be in the recollection of some of the members here present, that, as the specimen in the Museum was labelled by myself, I felt called upon to give my reasons for thinking it part of the *Gaur*, and not of the *Gayal*; whilst that exhibited by Mr. EVANS was perhaps the head of the latter animal, or a specimen of the other sex of the former. I have since been able to consult several authors on the same subject, and of collecting some information which I purpose to lay before you.

The first account of the *Gaur* I have met with is in the Memoirs of the Museum of Natural History by M. GEOFFROY SAINT HILAIRE; being a translation of a notice by Major ROUGHSEGE, sent by that gentle-

man to M. EUGÈNE DESBASSAYNS, son of the Governor of the French possessions in India, and by him to M. GEOFFROY SAINT HILAIRE. In this paper the only passage that bears upon the point in question, the form of the forehead, is the following, which I have retranslated, but which you will also shortly hear in the original:—"Its head has almost all the characters of that of our domestic bull, but the frontal bone appears more projecting and more elevated."

The next account is a more satisfactory one, contained in a paper by Dr. THOMAS STEWART TRAILL in the 11th volume of the *Edinburgh Philosophical Journal*; drawn up from a MS. journal of the same hunting-party mentioned in that furnished by Major ROUGHSEGE to M. GEOFFROY SAINT HILAIRE, which took place at *Myn Pat* in *Sergújah*; and from the personal explanations of Captain ROGERS, who was of that party, and who is stated to have paid considerable attention to the quadrupeds of India. You recollect the remarkable *concavity* of the forehead of Mr. EVANS's specimen, and will be able to satisfy yourselves if that concavity accords with the projecting frontal bone spoken of above, and with the following description by Dr. TRAILL. He says—"The form of the *Gaur* is not so lengthened as that of the *Urnu*. Its back is strongly arched, so as to form a pretty uniform curve, from the nose to the origin of the tail, when the animal stands still. This appearance is partly owing to the *curved* form of the nose and *forehead*, and still more to a remarkable ridge, of no great thickness, which rises six or seven inches above the general line of the back, from the last of the cervical, to beyond the middle of the dorsal vertebræ, from which it is gradually lost in the outline of the back." Now it is evident the above language could not be applied to an animal with a *concave* forehead, like that in Mr. EVANS's specimen; where the concavity instead of being but little below the rest of the bone, as it is in the domestic cow, made, as you saw, a deep fossa, forming a very remarkable feature; and which could not belong to an animal whose form exhibited along the back "a pretty uniform curve from the nose to the origin of the tail," and which "appearance is partly owing to the curved form of the nose and forehead:" for a concave forehead, like that in Mr. EVANS's specimen, would break the uniformity of the curve, instead of help to form it.

Again, Dr. TRAILL apparently in the very phrase, translated by M. GEOFFROY SAINT HILAIRE, says:—"The character of the head differs little from that of the domestic bull, excepting that the outline of the face is more curved, the os frontis more solid and projecting." This, no doubt, was also the case in the Society's specimen of the face,

as it is of the forehead. But in Mr. EVANS's specimen, so far from the face being more curved and the forehead more projecting, the face is quite straight and the forehead deeply concave. We may, therefore, safely conclude, that Dr. TRAILL's *Gaur* and Mr. EVANS's wore a very different appearance.

But the specimen in the Museum was marked as objected to by Mr. EVANS, on the authority of a paper, and figure of the horns and part of the skull, published by Major-General HARDWICKE, in the 3rd volume of the *Zoological Journal*. General HARDWICKE states, that, "as no drawing of the animal has yet been given to the public, to my knowledge, I am induced to offer to the *Zoological Journal*, for publication, a figure taken from a pair of horns of the *Gaur* killed, I believe, by the same hunting party described by Captain RODGERS, and presented to me by the principal member of the party, the late Major ROUGHSEGE." This proves the source from whence General HARDWICKE obtained his specimen to be beyond dispute. And as he is a first authority upon Indian Zoology, and had Dr. TRAILL's paper before him, it is not likely he would have omitted any errors in the description of the forehead and horns, had there been such to notice. So far, therefore, the chain of evidence is complete. M. GEOFFROY SAINT HILAIRE described the *Gaur* from a MS. by Major ROUGHSEGE; Dr. TRAILL did the same from a MS. supplied by an officer of the same party, (perhaps a copy of the same paper,) and from the remarks of Captain RODGERS who had paid much attention to Indian quadrupeds; and Major-General HARDWICKE publishes a drawing of the very head and horns, which were described in the above-mentioned manuscript, as those of the specimen killed in their party. This leaves no possibility of a doubt as to General HARDWICKE's specimen having been the *Gaur*; and his drawing in the *Zoological Journal* which I have the pleasure now of exhibiting, looks as if taken from this very identical specimen in your museum*. For both the specimen and the drawing shew the same rotundity of forehead, the same gentle convexity on the top of the head, between the horns, (and not a bold elevated crest or ridge, as in Mr. EVANS's specimen,) and the same proportionate size and curvature of horns. And I am sure on making the comparison you will think me fully borne out in concluding that the specimen I have marked, and General HARDWICKE has described, were both, or neither, belonging to the *Gaur*. But if you think we are mistaken, you must also hold the conjecture of Mr. EVANS, that this animal, which I have shewn to be identical with General HARD-

* See the copy of HARDWICKE's sketch in Pl. XVII.—ED.

WICKE's, is not the *Gaur*, be of more value than the positive assertion of Major ROUGHSEGE who killed his specimen in its native woods, and sent its spoils to that eminent zoologist*.

It next remains to determine what species it is to which the skull exhibited by Mr. EVANS belongs;—a matter far more difficult than to prove the label correct upon the other. It is possible that it belonged to the *Gaur*, but to a specimen of a different sex from that in the museum, and that described in the *Zoological Journal*; that the differences, however strongly marked, may be merely sexual. But, as Mr. EVANS has stated, there is another animal of this country, called the *Gayal*, the *Bos frontalis* of naturalists, with some of whose characters it seems to agree.

The *Gayal* was mentioned so early as the year 1790 in an account of the mountaineers of *Tiprah*, published that year in the *Researches* of this Society, and there called the cattle of the mountains. There are two sorts, a tame and wild variety; the former of which was then an essential article among that people at their feasts, whether of a warlike, civil or religious nature. But Mr. COLEBROOKE, who published a description of it in the 8th volume of the *Researches*, appears to think it had been noticed by KNOX in his historical relation of *Ceylon*; and imperfectly described by Captain TURNER in his journey through *Bútán*. Mr. COLEBROOKE's paper is compiled from accounts of the *Gayal* drawn up by Drs. ROXBURGH and BUCHANAN, and Messrs. ELLIOTT, MACRAE, BIRD and DICK. The only mention made in this paper of the forehead of the *Gayal* is by Dr. BUCHANAN, as follows:—"The head at the upper part is very broad and flat, and is contracted suddenly towards the nose, which is naked like that of the common cow. From the upper angles of the forehead

* There is also another account of the *Gaur* by Major HAMILTON SMITH, but apparently that gentleman never saw the animal, and has compiled his remarks from the foregoing descriptions. He thinks it possible that "Pliny's *Æthiopian* bull with blue eyes might refer to this species;" (Plin. l. 8. c. 21;) whose description is thus given by Dr. PHILEMON HOLLAND, in his translation of the works of that author, a book almost as great a curiosity as the animals he describes:—"But the most fell and cruell of all others of that country be the wild buls of the Forrest, greater than our common field buls, most swift, of colour brended, their eyes grey or blewish" (*colore fuluos oculis ceruleis*); "their hair growing contrary; their mouth wide and reaching to the ears: their hornes likewise hardly moveable; their hide as hard as a flint, checking the dent of any weapon whatsoever, and cannot be pierced: all other wild beasts they chase and hunt, themselves cannot be taken but in pitfalls: in this their wildness and rage they dy and never become tame."

proceed two thick, short, horizontal processes of bone, which are covered with hair. On these are placed the horns, which are smooth, shorter than the head, and lie nearly in the plane of the forehead. They diverge outwardly, and turn up with a gentle curve. At the base they are very thick, and are slightly compressed, the flat sides being toward the front and the tail. The edge next the ear is rather the thinnest, so that a transverse section would be somewhat ovate. Toward their tips the horns are rounded, and end in a sharp point." Here the flatness and breadth of the forehead, and the sudden contraction towards the nose, correspond pretty exactly with those peculiarities in Mr. EVANS's specimen; but nothing can be made of the description of the horns, &c.; the whole having evidently been taken from the tame variety of this "cattle of the mountains." And there is no part of any animal which undergoes greater changes by domestication than the horns of the *Ruminantia*.

In the seventh volume of the Linnæan Transactions there is also a description of the *Gayal* by Mr. AYLMER BOURKE LAMBERT, accompanied by a plate, but which also was taken from the domestic variety.

The last account published of the *Gayal* is in the afore-mentioned paper in the *Zoological Journal* by General HARDWICKE. It is accompanied by a plate of the head and horns of the *Asseel Gayal*, or *True Gayal*. General HARDWICKE says—"Of the *Gayal* (*Bos Gayæus*) of COLEBROOKE, eighth volume of the Asiatic Researches, there appears to be more than one species. The provinces of *Chittagong* and *Sylhet* produce the wild, or as the natives term it, the *Asseel Gayal*, and the domesticated one. The former is considered an untameable animal, extremely fierce, and not to be taken alive. It rarely quits the mountainous tract of the S. E. frontier, and never mixes with the *Gobbah*, or village *Gayal* of the plains. I succeeded in obtaining the skin, with the head of the *Asseel Gayal*, which is deposited in the museum of the Honorable the East Indian Company, in Leadenhall Street, and from which the drawing was taken, which accompanies that of the horns of the *Gaur*."

On referring to the above-mentioned drawing you will perceive the same general appearance of face as the specimen of Mr. EVANS exhibited; the same flatness of forehead, which in the skull is probably a concave surface; the same marked ridge between the horns; and the same projection of the orbits, and sudden contraction of face towards the nose, to which he drew your attention in his paper.

Having thus laid before you all the authorities I have been able to collect, I think you will consider that I have proved my position,

that, the horns and frontal bone in your museum are those of the *Gaur*. I have also shewn that some of the characters of the *Asseel Gayal* are possessed by Mr. EVANS's specimen. But I feel that with the limited knowledge we still possess, it would be impossible in me to assert, or even to form a conjecture, that it really belonged to that animal.

In conclusion I must observe, that it but little redounds to the honor of Indian sportsmen, or I fear also of this Society, that we have not specimens both of the skins and skeletons mounted in our museum, to enable us to determine to which species a specimen belongs, of two of the largest ruminating animals known; natives of a country of which we have had interrupted possession for more than fifty years.

VI.—On a new Genus of the *Sylviadæ*, with description of three new Species. By B. H. HODGSON, Esq., Resident in Nipal.

SYLVIADÆ? Genus new. YUHINA, nobis. *Yuhin* of the Nipalese.

Bill equal to the head, slender, acute, depressed as far as nares; gradually compressed beyond: maxilla, cut out to centre by nasal fossæ, convex beyond, subarcuated, and gently inclined at tip, with two or three sharp teeth on either side: mandibula, straight, entire, equal to maxilla, pointed. Tomiæ of both, trenchant, scarpt and lockt throughout: nares large, the aperture lunated and lineated by a nude incumbent soft membrane. Tongue sub-equal to bill, cartilaginous, deeply-forked and the prongs filamentous and convolved. Wings medial, round-acuminate, firm, 1st quill small, 5th usually longest. Tail short, firm, square. Tarsi stout, finely scaled, longer than any toe. Toes short, exterior connected to the joint, interior basally; laterals and hind sub-equal; last very stout and depressed. Nails, falcate, strong, suddenly pointed; anteriors sub-equal; hind much the largest. Head crested. Rictus slightly bristled, not wide. Habitat central and northern regions: food, viscid strong berries, and small scaly insects, such as harbour among foliage. It is the opinion of Mr. VIGORS that these singular little birds serve to connect the *Sylviadæ* with the *Certhiadæ*. In the structure of the bill and tongue, and even of the feet and wings, they remind me of the genus *Sibia* (nobis), and of others of the *Philedonian* thrushes of CUVIER—a group, the contents of which have been referred at random to the *Tennirostral Meliphagidæ*, and (in part at least) to the long-legged division of the thrushes. These are high matters of classifi-

cation which may perchance be settled with an approach to accuracy some fifty years hence, provided our investigations meanwhile be carried into the general structure and prevalent habits of species—and be not confined, as now, to closet dissertations on dried skins.

The genus I now propose, as well as its location, are both provisional—my knowledge of the structure and habits of the species being confessedly incomplete; and the directions of the books within my reach being better calculated to misguide than to guide.

These little birds, so far as I have yet ascertained, adhere exclusively to the wild uplands; prefer the lower and more umbrageous to the higher and barer trees; and seem to procure no portion of their food from the ground. They are usually found in small flocks; and have a monotonous feeble monosyllabic note. They eat viscid strong berries and fruits, and many kinds of insects, chiefly of the scaled sort. Their intestines are about the length of their body (from the tip of the bill to the tip of the tail), furnished with grain-like cæca, near the lower end, and of nearly uniform diameter. Their stomach has the muscular coat of very moderate sub-equal thickness: and the lining neither very tough nor much grooved. Three species are known to me, in all of which the sexes resemble each other. I now proceed to a summary description of them, premising that the two first are typical, the last much less so.

Species 1st. *Yuhina gularis*; spotted-throated Yuhin, nobis.

Above, with the tertiaries and tail feathers, obscure olive brown: cap, darker and purer brown: ears, chin, throat and breast, obscure rufous wood brown; the chin and throat spotted with blackish, and bounded laterally by a longitudinal stripe of the same hue: rest of body below, bright orange rusty: primaries and secondaries black, the former with a narrow edging of hoary, and the latter with a broad one of orange: lining of the wings and inner margin of quills towards their bases, albescent: tail dusky internally: legs deep orange: bill fleshy brown with dusky culmen: iris brown: head with a full soft mobile and sub-recurved crest: size $6\frac{1}{2}$ by $8\frac{3}{4}$ inches, and $\frac{3}{4}$ oz., bill $\frac{1}{8}$ inch, tarsus $\frac{1}{8}$, central toe $\frac{5}{16}$, hind toe $\frac{1}{8}$.

Species 2nd. *Yuhina occipitalis*. Rusty-naped Yuhin, nobis.

Above, with the whole tertiaries and outer webs of the larger remiges and of all the rectrices, dull obscure olive brown: top of the head and back of neck dull slaty with hoary stripes: the nape, bright rusty: ears, chin, abdominal neck and the breast, vinous buff: a blackish stripe or moustache behind the gape: belly, rump and undertail coverts, deep rusty: remiges and rectrices, internally dusky

inner basal margins of the quills pale buff: lining of the wings, white: legs, orange: bill fleshy red: iris brown: head with a full soft crest, as in the preceding: size $5\frac{1}{2}$ by $7\frac{1}{2}$ inches, and $\frac{1}{2}$ oz. in weight: bill $\frac{1}{8}$ of inch: tarsus $\frac{1}{4}$, central toe $\frac{7}{8}$, hind $\frac{5}{8}$.

Species 3rd. *Yuhina*? *flavicollis*. Yellow-necked *Yuhin*, nobis. Above, obscure brown, with a slaty tinge: cap pure rich brown: cheeks and nape paler: back of the neck, rusty yellow, continued in a collar round the sides and front of the neck and thence spread over the lower surface of the body and diluted often to white: chin and throat, white: moustache dark brown: remiges and rectrices, internally, dusky: the primaries edged externally with white on the outer webs; and all paled internally on the inner, as in both the preceding species: lining of wings, white: sides of body, shaded with brownish: legs yellowish fleshy grey: bill fleshy brown: iris brown: head crested as in both the preceding species: bill shorter, less acuminated, and furnished with only one salient process on each side the tip of the upper mandible of the bill. Size $5\frac{1}{4}$ by $7\frac{1}{4}$ inches, and less than $\frac{1}{2}$ an oz. in weight.

The following is a detail of the dimensions of a fine male specimen of the *Yuhina Gularis*; and which may serve to indicate the proportions of all the three species.

	Inches.
Tip bill to tip tail,	$6\frac{1}{2}$
Bill, length of,	$0\frac{1}{4}$
— basal height of,	$0\frac{3}{8}$
— ditto breadth of,	$0\frac{5}{8}$
Tail,	$2\frac{1}{2}$
Expanse of wings,	$8\frac{3}{4}$
Tarsus,	$0\frac{1}{4}$
Central toe,	$0\frac{1}{8}$
And nail,	$0\frac{7}{8}$
Hind toe,	$0\frac{6}{8}$
And nail,	$0\frac{1}{8}$
Weight, $\frac{3}{4}$ oz.	

Emendata in preceding ornithological papers.

Vol. V. page 777. Indication of a new genus of FALCONIDÆ; viz. *Báza*.

Generic character. For "acropodia wholly *reticulate*," read "acropodia wholly *scutellate*."

On three new Genera of the Long-legged Thrushes.

Generic character of *Larvivora*. For "nuchal bristles," read "nareal bristles."

Vol. VI. p. 102, l. 26. Description of a new form of Meruline Birds; viz. *Sibia*.

Generic character. For "nuchal bristles," read "nareal bristles."

VII.—*Note on the occurrence of Fossil Bones in the Sewalik Range, eastward of Hardwar.* By H. FALCONER, M. D., Superintendent Botanical Garden, Seharanpur.

[See Proceedings As. Soc. 5th April.]

The *Sewalik* fossils have hitherto been found chiefly on the tract between the *Jumna* and *Sutlej*, and more sparingly in the clay marl between the *Jumna* and *Ganges*. There is no apparent reason why they should not be found in abundance in the protraction of the range which stretches eastward of the *Ganges* behind *Rohilkhand* and *Oude*. But it is of some interest to ascertain the fact in unexplored parts of the range, where they do exist, and where they do not. The fossils mentioned in the following list have been collected near *Hardwar* and in the low hills eastward of the *Ganges*, which skirt the province of *Kemaon*. The list contains nothing new: but it proves the occurrence of fossils where they had not been found before, and increases the probability of finding them still further to the eastward:

Mastodon Elephantoides—molars.

Rhinoceros—molars.

Hippopotamus Sivalensis—molars and tusks.

Hog—fragments of jaws with teeth.

Horse—molars.

Ox—teeth and other bones.

Deer of several sizes—jaws, teeth, astragali, horns, &c.

Crocodiles—*Garial*, } several fragments of jaws, teeth, and buckler
Magar, } plates.

Tortoises—*Emys*, }
Trionyx, } numerous fragments.
Testudo, }

Coprolites.

This list comprises a large part of the species found westward of the *Jumna*. The specimens are generally broken up into small pieces, greatly more so than in the *Nahan* tract. The largest fossil procured has been the plastron of a testudo 17 inches long. The bones are found in three states of fossilization, exactly resembling those from the westward of the *Jumna*; viz.

1st. The “soft” fossil; the animal matter removed, but the earthy constituents of the bones unaltered, and slowly soluble in diluted muriatic acid: occurring in beds of clay, and the cavities of the bones filled with the matrix. The specimens of this variety are very few.

2nd. The "hard" fossil, with a silicious or calcareous impregnation: the animal matter and earthy constituents entirely removed: occurring in sandstone matrix.

3rd. The "black" fossil, like the last, but impregnated with hydrate of iron: occurring in sandstone, or in a calcareo-argillaceous matrix.

No shells have yet been brought in.

VIII.—*Report Progress of the Boring Experiment in Fort William.*
By Major T. M. TAYLOR, 5th Cav.

[Read at the Meeting Asiatic Society, 5th April.]

The immediate superintendence of the boring experiment having, in consequence of my removal from Fort William, passed into other hands, I think it necessary to acquaint the Society with the progress that has been made since I had the honor to submit to them a note on the subject in June last. (See Proceedings As. Soc. vol. V. p. 374.)

At that time a depth of 175 feet had been attained by the borer, which then worked in a coarse sharp sand mixed with pieces of quartz and felspar, and from the little progress made, it was supposed a bed of gravel or shingle had been reached. This supposition, however, proved erroneous; for after some delay the work advanced, until, the borer having gained $178\frac{1}{4}$ feet, and the tubes being forced down to $180\frac{1}{2}$ feet, they were observed soon after to have sunk by their own weight, and thenceforward up to the present time they have continued so to sink, maintaining a depth generally a few feet in advance of the auger.

It is remarkable that, although it was frequently tried, it was seldom found practicable to *force* the tubes down more than an inch or two at a time; yet, shortly after the removal of the pressure, amounting, possibly, to twenty tons, they would sometimes descend six inches or even a foot by their own gravity.

With a trifling variation in the color and fineness of the sand the stratum remained the same, until clay was found at $198\frac{3}{4}$ feet, but this stratum was not more than five feet in thickness; five feet of sand then occurred, and after it another layer of clay. At 212 feet a bed of sand was entered, which has been penetrated to a depth of 131 feet, without reaching its termination.

Long ere this the work would have been carried to the utmost depth for which tubing of the diameter in use has been provided, had it not been for two accidents, each of which was of so serious a

character as threatened to put a final stop to the work. The first was occasioned by the separation of a part of the borer containing a valve, when at the bottom of the well; and the second by the auger becoming jammed with a brazen plumb which had been lost in the bore sometime before, in such a way that the application of no force that the rods could sustain sufficed to move the implement in *any* direction. The force that was applied may be conceived when it is stated that it was sufficient to raise the whole line of tubing bodily in the bore.

Keeping the tubes in position, the rods, by the application of a screw, were at length forcibly torn from the auger a little below the screw which joined them; after which, as in the former case, the valve worm auger was broken off by the jumper, and the instrument brought up by the catching in the socket.

The success in overcoming these disasters must be mainly attributed to the zeal and perseverance of the sappers employed on the work: in the latter, however, they were guided by the able instructions of Captain J. THOMSON, who suggested the measures to be adopted, and supplied from his own stores some of the machinery to carry them into effect*.

When my superintendence ceased, (10th March,) the tubes had sunk to the depth of 343 feet, and the borer penetrated to 336 feet. The sand still continued to rise in the manner described in my former paper. It varies occasionally in color and substance, and latterly some pieces of felspar and lumps of indurated clay or sand have been picked out of the sand brought up. Specimens accompany this paper.

The supply of English tubing of the requisite character is very nearly exhausted, but an attempt will be made to cast some in Calcutta: if it fails, the experiment must necessarily be suspended until an indent that has been sent home be answered.

Note by the Secretary.

As a postscript to the above Report, I have now to announce a most curious and unexpected discovery, communicated to me this very morning by Colonel MACLEOD, the Engineer officer, who has succeeded to the charge of the experiment hitherto so successfully conducted by Major TAYLOR.

On a former occasion the Society was shewn metallic iron reduced from ore extracted from a depth of 150 feet, and sharp angular

* To guard as far as possible against breaking the rods by the force applied to extract them, Capt. T. connected his screw with the rod-head, through the intervention of a rod of somewhat smaller section which would consequently give way before any injury could happen to the borer.—ED.

quartz and felspar from 175 feet;—but here is something which will excite much more surprise—a FOSSIL BONE brought up by the auger from a depth of 350 feet below the surface of Calcutta!

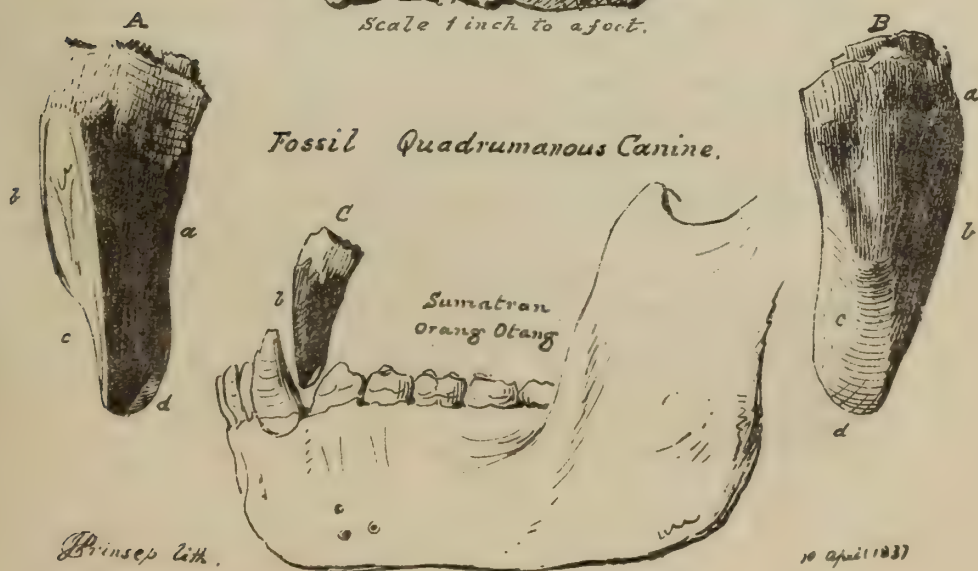
When it is considered how many million chances there were against an auger only a few inches in diameter, impinging upon the precise spot where a bone lay in the understratum,—the risk, too, of such a fragile object being ground to atoms by the tool, or pushed aside, and missed,—it may be regarded as the most extraordinary good fortune that the relic should not only have been met with but brought up entangled in the valve of the scoop without the slightest injury! The bone is the fractured lower half of a humerus of some small animal like a dog: it resembles the drawing of the corresponding bone of the hyena in CUVIER, but it is impossible precisely to identify it for want of skeletons for comparison.

The interior is filled with the micaceous sand in which it was imbedded, and scales of the same adhere to the exterior surface, as is shewn in the accompanying sketch, (see Plate XVIII.) The bone is not thoroughly fossilized, for when heated by the blow-pipe it becomes slightly charred and emits a perceptible odour:—but the animal matter left is exceedingly small, and the whole loss on heating a portion to a white heat was only 7 per cent., the greater part being moisture from the hydrate of iron with which it is impregnated. The greater part of the phosphate of lime remains with a proportion of carbonate: the specific gravity is 2.63, just the same as that of a fine specimen of polished ferruginous *odontolite* from the *Himalaya*: it requires the heat of an oxygen blow-pipe to fuse a fragment per se on platina foil.

Of the relative age of this deposit, compared with that of the *Sewalik* and *Nerbudda* fossils, it is impossible to form any exact conclusions, but it is worth while to recapitulate briefly the conditions under which each are found.

The continuous stratum of lower sand in which our bone was buried at a depth of a hundred and fifty feet, may be regarded as the gradual deposit at the mouth of a primeval river: the excess of mica contained in it would seem to indicate its derivation from a gneiss or schistose source, such, indeed, as the present *Himalayan* or *Vindyan* range might still furnish. It was evidently anterior to the general and extensive alluvial deposits of the yellow *kankary* clay which entirely cover, or rather form, the Gangetic plain, and which the auger in Fort William had passed through before it attained the depth of 100 feet. Now the fossil bones of the *Jamna* were also found under the *kankar* clays of the *Doáb*, 150 feet below the surface, so that in this respect

*Fossil Bone from the Sand, 350 feet below the surface, Calcutta.
brought up by the auger, April 1837.*



the situation of the two is similar enough. The calcareous infiltration which has consolidated the sand and gravel of the *Sewalik* and *Nerbudda* matrix has been wanting here, and perhaps from its greater distance from the hills alone, the sand here is in a much more comminuted state:—geologically speaking, however, the whole of the fossils may belong to the same period of alluvial deposit—or, in other words, to an indefinitely distant epoch of the present system of quiescent operations in land and flood, whose gradual action has subsequently accumulated the superjacent beds of clay, abounding in minute fresh-water shells, extending for thousands of square miles—and again over them towards the delta of the *Ganges*, other more recent and extensive beds of blue clays, colored with vegetable debris and containing imbedded peat and wood, by which they are identified with the existing soil of the *Sunderban* forests. The mind is lost in contemplating the immense periods which such a deposit would demand at the hardly visible rate of present accumulation:—yet there are other causes of wonder in the several beds of coarse granitic angular gravel and nodular or pea iron ore which have been traversed by the auger before reaching the fluviatile sand beneath. These may indicate the volcanic upheavement and subsequently gradual decay of granitic and ferruginous hills, pending the progressive deposit of the alluvium, concerning which, however, we can know nothing certain, and need not therefore lose ourselves in conjectures. In like manner it might be advanced that the whole of the clayey strata were deposited in fresh water as the saliferous sand and sandstone of Upper India has been in salt water—and that the animals whose exuviae are now brought to light at so many points, were the inhabitants of the borders of a prodigious bason. In the upper beds of blue clay penetrated in digging tanks and canals, bones have occasionally been met with (see the note on those found at *Dumdum* in Vol. II., page 649), but unfortunately none have been preserved. The occurrence of the remains of quadrupeds at one or two distant points of the series is sufficient to establish the conclusion that their existence has been coeval with the whole deposit; while the sharp unworn angles of the fort bone prove that the animal to which it belonged had lived and died in the immediate neighborhood.

In the accompanying sketch I have attempted to delineate of full size, Colonel MACLEOD's fossil bone, which may be designated without hesitation one of the most precious rarities ever deposited in the Museum of the Asiatic Society.

J. P.

IX.—Proceedings of the Asiatic Society.

Wednesday Evening, 5th April, 1837.

The Hon'ble Sir EDWARD RYAN, President, in the chair.

Mr. HENRY TORRENS, Colonel JOSEPH DE HEZETA, and Mr. STORM were unanimously elected Members.

The Right Reverend JEAN LOUIS, Bishop of *Isauropolis* and Vicar Apostolic of *Cochin-China*, was, on the favorable report of the Committee of Papers, unanimously elected an Honorary Member.

Colonel D. MACLEOD, Chief Engineer, and Captain S. F. HANNAY, were proposed by Captain PEMBERTON, seconded, the former by Major TAYLOR, the latter by the Secretary.

Mr. M. A. BIGNELL was proposed by the Rev. Dr. MILL, seconded by Mr. DOBBS.

Dr. W. GRIFFITH proposed by the Secretary, seconded by Mr. W. SPEIR.

An estimate for the repair of the Society's premises was submitted, but it was resolved to postpone such repairs as were not urgent until next year.

An estimate for the repair of Sir W. JONES's monument was submitted by Messrs. LLEWELYN and Co. amounting to Rs. 191 : also deferred.

Library.

The Secretary reported that, in obedience to the instructions of Government, he had selected and packed, for transmission to the Honorable Court of Directors, the duplicates of the Sanskrit, Arabic, and Persian manuscripts, transferred from the College Library.

The following books were presented.

A grammar of the Sindhi language—by the author, H. Wathen, Esq., Chief Secretary to the Bombay Government.

Dispatches of the Marquis WELLESLEY, 2 vols.—presented by Government through the Sec. General Department.

A descriptive and illustrated catalogue of the Anatomical Museum of the Royal College of Surgeons in London—by the College.

President's address to the Geological Society, 1836, (copies for distribution)—by C. Lyell, Esq.

Scientific Memoirs selected from the Foreign Journals, a new periodical, Vol. I. Part I.—by Richard Taylor, Esq. the Editor.

The Madras As. Soc. Quarterly Journal, January, 1837—by the Society.

The Indian Medical Journal, and Scientific Review—by Dr. Corbyn.

Meteorological Registers to March—by the Surveyor General.

Museum of Antiquities.

The Honorable F. SHORE presented two pieces of sculpture brought from the *Goand* country on the *Nerbudda*. One, an erect image of *Buddha*, surmounted by an arch of celestial attendants; the other, an image of *Vishnu* in the form of a snake intertwined with *Lakshmi* as *Naga kunya*.

Major COVENTRY delivered, on the part of Colonel STACY, an accurate cast of a curious piece of ancient sculpture discovered by this indefatigable antiquarian in the neighborhood of *Mainpuri*, and conjectured by him to be of a mixed Grecian and Buddhist style.

"I have the pleasure to submit a drawing on a scale of one-eighth, of a Sculpture on white marble, which I found at the village of *Prow* or *Pirow*, about 12 kos W. of *Mainpuri*. It was lying on the ground, where I conclude from the mound, the original temple had stood. Finding so much of Grecian style in the ornamental parts, I resolved to purchase it, if possible; but after several months, having failed in my endeavours to induce the people to part with it, I sent a *kalassi* to take a cast. In his hurry to finish his work and return to his family, he took off the composition

before it was quite dry, and consequently bent the cast. Into this, on its arrival, I cast one with clay, prepared by a native potter; and the sketch is taken from that, by my native draftsman; with this difference—that the enclosed sketch shews the sculpture as on the marble, with the borders in a straight line. I shall have the pleasure of offering the clay cast to the acceptance of the Society. It is already packed, and shall be forwarded by the first opportunity. The drawing I beg may be returned. This Buddo-Grecian sculpture will, I think, be acknowledged as one more lent in support of the opinion urged in the concluding part of the sixth paper of your September number, 1836."

[We hope to present a drawing of the cast shortly.—ED.]

With reference to your hopes of finding other specimens of the "Silenus Sculpture" at *Mutra*, I fear they will end in disappointment, for I have most minutely examined every hole and corner. Indo-Scythic coins are found constantly and in great numbers. I propose sending you a statement of those most common in India to contrast with that of Mr. MASSON at *Cabul* in the 57th number, page 547, 1836.

A notice and drawings of a colossal alto-relievo, called *Mata kunr*, near *Kásia Thána*, in the eastern division of the *Gorakhpur* district, were forwarded by Mr. D. LISTON.

Received by the *Herefordshire* from Bombay, a series of facsimiles of the inscriptions at *Girnar*, (*Girinagar*,) very beautifully copied under Mr. WATHEN's superintendence from the original facsimiles lately taken by the Rev. Dr. WILSON, President Bombay As. Soc. for transmission to M. JACQUET of *Paris*.

These most valuable copies, occupying eight folios of 6 and 8 feet in length, comprise inscriptions in the three or four distinct characters now familiar to us. They are mostly in a good state of preservation, and one in the No. 2 láth character seems capable of being decyphered without much difficulty. The Rev. Dr. MILL was requested to undertake the examination of this important document.

Mr. WATHEN writes, that he has lately visited the caves of *Kanèri* in *Salsette*, and has had the inscriptions taken down by an experienced hand:—they seem to be in the character of the "Prescott" coins (of *Saurashtra* and *Cutch*). The caves are a collections of Buddhist temples, and there has been a large city on the mountain above. There are also the remains of a pillar similar to those of *Anuradhapura* in *Ceylon*, and a number of tanks cut in the solid rock, which are evidence of a large population besides the priests of the temple. "I explored the mountain until I came to one cave in which a *dehgopa* had been built of large blue stones, and the remains of the *chhatra* which touched the top of the cave are still visible. Some one, however, has been digging down into it, and I fear the relics have been carried off. I however intend to have it re-examined."

Literary Communications.

The Rev. Mr. YATES submitted a critical notice of the Sanskrit poem, entitled the *Naishadha* of SRI HARSHA, of which the first volume was lately published by the Society with the tika of PREM CHAND Pandit.

Captain OUSELEY, Sec. College Fort William, submitted, through the Secretary, a letter from Lieut.-Col. FRANCKLIN, M. R. A. S., regarding a proposal made by him to the Oriental Translation Committee of the Royal Asiatic Society, for the translation of some works from the ancient classics, and some of the best English authors into the languages of the East.

[Much of the Colonel's proposal has been already accomplished in this country:—we have even now before us a bold prospectus for a version of the *Iliad* in Bengáli by *Greecechunder*, with a sample of the first book rendered line for line from Pope. We have Gay's *Fables*—*Rasselas*—and the *Percy Anecdotes*. Maps, too, and works of Science, as *Marcoet's Natural Philosophy*, *Hutton*, and *Euclid*,—not to omit the Persian edition of *Marcus Antoninus* by the Baron VON HAMMER. Any additions to this rising oriental library which England can furnish will of course be acceptable, and it is gratifying to see the influence of a contemporary of Sir WILLIAM JONES directed to so useful a project.—ED.]

Extract of a letter from Major DIXON, Political Agent in *Mhairwár*, was read, stating that in compliance with the Society's wish he had with

Col. ALVES, made inquiries relative to the supposed existence of an extensive Buddhist library at *Jesalmèr*.

The only work of which they could learn was entitled "*Bauddh mat Jain marg grantha*," of which the Rája would willingly allow a copy to be made if desired. Although nothing either very ancient or of historical value could be expected under such a title, the Society deemed it on all accounts desirable to secure a copy of this manuscript, and accepted Major DIXON'S and Col. ALVES' obliging offer.

The Government, through Mr. W. H. MACNAGHTEN, Sec. Pol. Dept. presented a copy of a Journal of Captain C. M. WADE'S expedition down the *Satlaj*, drawn up by Lieutenant F. MACKESON.

[This paper is printed in the present number.]

Also, the Journal of a visit to the *Mishmí Hills* in *Upper Assam*, by Dr. W. GRIFFITH.

Captain PEMBERTON presented his abstract of the journal of a route travelled by Captain S. F. HANNAY from *Ava* to the amber mines of the *Hukon* valley on the south frontier of *Assam*, with a protracted map of the route.

Mr. C. B. GREENLAW presented, on the part of the author, a memoir on the inhabitants of the *Maldivé* islands, by Lieutenant YOUNG, I. N. of the ship *Benares*, lately employed on the survey of these islands.

Physical and Museum Natural History.

The collection of fossil shells from *Harper's Hill* and *Stony Creek* in *New South Wales*, forwarded by Lieutenant VICARY, had arrived.

[Lieutenant VICARY'S note shall be published when sketches of these shells, and the connected groupe from *Van Dieman's Land*, presented by Mr. W. CRACROFT, can be lithographed.]

A mounted specimen of the slow-paced Lemur, (*Loris Gracilis*,) presented by Mr. BELL.

A specimen of the large Paradise Bird, (*Paradisea Major*,) presented by Nawáb TUHAWUR JUNG.

A stuffed specimen of the common Pelican, (*Pelecanus Onocrotulus*,) presented by Dr. F. P. STRONG.

A specimen of the head, vertebrae and caudal fin of a large species of hammer-headed Shark, (*Zygæna* — ?) presented by ROBERT ROSE, Esq.

This specimen is 9½ feet in length. It was found ashore in a bay at *Birkúl* in the district of *Midnapur*, and the rest of its body eaten.

Two bottles of insects from *Assam*, presented by Captain JENKINS.

Two skins of the Yak, (*Bos Grunniens*,) presented by C. HARDING, Esq., who also sent for inspection a specimen of the skin of the Hill Fox, (*Vulpes Montana*.)

Mr. J. T. PEARSON exhibited two living specimens of the young of the *Felis Kutás*.

Extract of a letter from Lieut. COLIN MACKENZIE (*Malacca*) was read, apprizing the Secretary of his having at last succeeded in obtaining a tapir for the Society.

It was a fine young female, and had been taken with great difficulty alive: it would be sent up by the first opportunity with every precaution; the expence, including freight, would perhaps amount to 220 rupees.

Dr. H. FALCONER transmitted a memoir on some additional fossil species of the order *Quadrumana*, discovered in the *Sewalik* hills.

[We shall give insertion to this interesting paper in our next.]

Also a notice of the occurrence of fossil bones eastward of *Hardwár* (*Hari-dwára*.)

[Printed in the present number.]

Dr. H. FALCONER gives the following account of a very extraordinary elastic sandstone:—

"I have lately had sent to me to look at by Captain MCNAGHTEN, of *Karnál*, a specimen of rock which has surprised me beyond measure. It is a slab

of sandstone 14 inches long by $5\frac{1}{4}$ wide and 2 inches thick, and looks like a long brick. It exactly in appearance resembles the building sandstone used at *Agra*. It is flexible and ELASTIC in every direction!! If you place it flat on a table, and press the hand on one end and raise the other, you can bend it to a certain extent, and see the undulations moving along to the fixed end. If you seize it by both ends, one in each hand, and make an action as if you intended breaking it, you can see and feel it bend like a piece of whale-bone, but of course in an infinitely smaller degree, and the undulations are observed propagated from end to end. If you tap it on the side with the finger as you would a *massak* of water, it yields pretty much in the same fashion, propagates an undulation and instantly recovers its form. If you press it at the sides it gets narrower, and if you pull at the ends it elongates!! but always recovers its original form. Is there any account on record of so extraordinary a sandstone? Should there not, I may send you some notes about it. It is not known where the specimen came from." H. F.

The fossils dispatched by Dr. SPILSBURY had been brought down by the Honorable Mr. SHORE, but had been sent in the first instance to Dr. Row at *Barrackpur*.

Dr. SPILSBURY notices that the beautiful meteor remarked at *Bersia*, (see Proc. February,) was also seen at *Baitul*, at *Hoshangabad* and *Jabalpur*.

A letter from Mr. W. DAWE announced the dispatch of a fresh selection of fossils (including a lower jaw of the *Sivatherium*) for the Society's Museum in three chests, which left *Karnal* 10th March.

Read a letter from Lieutenant T. HUTTON, proposing exchanges of fresh-water shells with the Society, for mutual benefit of cabinets.

The Curator explained that he had already effected the object desired.

A continuation of the Rev. R. EVEREST's notes on the Revolutions of the Seasons was received.

This part of the author's researches is accompanied by diagrams of the prices of grain in different years, whence an estimate is derived of the amount of rain.

A note on the genera *Oxygyrus* and *Bellerophon* was received from Mr. W. H. BENSON.

The following Meteorological notes were communicated by Major DAVIDSON, Engrs. from *Lacknau*. They seem to confirm the theory lately started of the prevalence of these asteroids in the opposite parts of the earth's orbit traversed in November and May.

1. On board the ship *Northumberland*, Captain POPE, proceeding from England to India in 1834, a pale star was visible for at least five days*, during sunshine. It was first discovered by Captain H. TIMMINGS, of the Bengal Horse Artillery, and was seen by all the crew and passengers of the ship. (Lat. long. unknown.)

2. At *Assirgarh* in April or May, 1823, I was lying awake on my bed at about 12 or 1 o'clock, when I was startled by a brilliant light advancing from the east end of a long narrow veranda. I waited a few seconds, expecting to see some of my family or servants bearing a candle, when (I presume as the meteor passed over my bungalow), I looked out in the compound, and observed the individual shadows of a tall *Jámun* tree, cast vertically on the ground—a circumstance I had never seen in the brightest sunshine. Not a breath of air, nor an audible sound. Conversing with Col. RICHARDS, commandant, I found that he had seen the glare, and that subsequently it had been reported to him that an immense number of stones had fallen from the sky, about twenty miles to the west of the fortress, in a forest, inhabited by *Bhils*. No inquiries were ever made.

3. While the Sappers and Miners were marching from *Cawnpur* on *Bhartpur*, (about November, 1824,) at 4 in the morning a meteor was seen by the officers of the Engineers rising in the North: it ascended from the horizon to an elevation of about 65° , and remained there in an obscure group of fixed stars for upwards of 25 minutes. On its first reaching the cluster, its light was very distinct, but it gradually melted away, until the eye could only detect its situation by the increased brightness of the spot, on making a sweep over that part of the heavens.

4. At *Assirgarh* fortress, during the rainy season, I often observed an insect formed like the common centipede, (*Scolopendra electrica*?) which at night used to leave a glowing fiery trace of its progress; and on one occasion, I had the curiosity to rub my fingers on the track, which was unctuous, and on smelling them found the strong and almost suffocating stench of burning phosphorus. C. J. C. D.

* This may have been the planet Venus?—ED.

Major TAYLOR submitted a Report (which was read) of the progress of the experimental Boring in Fort William up to the period of his resigning charge in consequence of his change of appointment.

[Printed in the present No. page 234.]

The Secretary stated that he had to bring to the notice of the Society a most unexpected sequel to Major TAYLOR's operations. Almost the first withdrawal of the auger by Colonel D. MACLEOD, Engrs., who succeeded in charge of the experiment, brought up a relic well calculated to reward the skill and labor of all his predecessors—a FOSSIL BONE from a depth of 350 feet below the surface of Calcutta! which Col. M. presented for deposit in the Society's Museum.

[See separate note appended to the report.]

Dr. B. BURR, 4th Regt. N. I., forwarded for the inspection of the Society, specimens of silk cloth dyed from the leaves of the teak tree, one yellow, the other olive. The following information on the subject of Dr. BURR's discovery of this cheap and durable dye is extracted from his letter to the Secretary, dated *Berhampur*, 4th March :—

"These properties of the leaves of the teak tree I accidentally discovered about five years ago, when I purchased the Honorable Company's teak plantation at *Bauleah*, since cut down; but I had not an opportunity till lately of trying the effects of various mordants on it, when Mr. LAIDLAY, an expert practical chemist, was kind enough to assist me with his experience in the art of dyeing.

"The leaves at all seasons of the year contain the dye, but during the rains and cold weather, when their vegetation is most vigorous, they contain a greater quantity of it. They also retain it when dried for any length of time, so as to admit of its being exported to Europe, and I am sanguine enough in thinking it will become, 'when known there, a valuable article of trade with the mother-country.

"The experiments have as yet been tried with silk cloth alone, and with two mordants only, alum and acetate of iron, and the result is very satisfactory, the colors produced being permanent, and can be extracted from the leaf either by boiling or steeping in cold water. I have as yet unsuccessfully tried to obtain the dye in its pure state: its quantity, however, in the leaves and stalks of the leaves, as compared with other vegetable dyes, is very considerable.

"The piece of yellow silk sent was steeped in a saturated solution of alum for twelve hours, afterwards washed and dried, and then steeped in a cold decoction of the leaves for about three hours. The decoction was prepared from the green leaves and boiled for three hours, but the coloring matter may be extracted in much less time. The olive colors were obtained from the same piece of silk in its yellow state, steeped in acetate of iron for two or three hours. These colors may be varied, by more or less steeping in the dye liquor, from the most delicate straw color to the brightest yellow and olive green. Twelve of the leaves dried weighed three ounces and were boiled for an hour in two and a half quarts of water, one and a half quarts of liquor fit for dyeing was obtained on straining it, sufficient to dye several yards of cloth of the brightest yellow. From this some idea may be formed of the quantity of coloring matter in the leaf.

"Another property this dye contains superior to similar dyes used in this country, is that its color does not run or mix with other colors when printed on the same cloth.

"I intend making a few experiments with it on cotton, and may hereafter communicate the result."

A subsequent letter adds the following information :—

"Since forwarding the communication regarding the dye of the teak tree leaf, the following results of several experiments made with it deserve notice.

"The dye exists in the substance of the leaf, not in its stalks, as I at one time supposed. Alcohol extracts both the dye and the green coloring matter of the leaf. Water, hot or cold, extracts the dye alone. Soda, potash, the muriate of tin, and an astringent flower used by the natives in dying, called *dhyephul*, decompose this dye. Liquor ammonia changes the yellow imparted to cloth to a snuff brown. Soap mixed with the decoction heightens the yellow color, but impairs the natural brilliancy of the silk. The acetate of iron produces from a dark slate color to every shade of green and olive, according to its strength and time of steeping. Boiling the leaves for an hour or two destroys the color; this I am inclined to think arises from some of the leaves being carbonized by the heat of the vessel.—The most simple and easy way of extracting the dye is as follows. Take two gallons of water to one pound of the dry leaves; bring it slowly to the boiling point in a copper or earthen vessel; allow

it to cool, and then strain. About $1\frac{1}{2}$ gallons of liquor will be obtained, a sufficient quantity to dye a full piece of silk handkerchiefs 7 yards by 1 yard. The decoction thus prepared is of a dark brown color, has a peculiar smell not unlike that of senna leaves. If kept for six or eight hours it ferments, becomes lighter in color, but still retains the yellow dye which it imparts to silk after six or eight days, perhaps much longer, but the color is scarcely so brilliant as when the decoction is fresh.

"The acetate of alumina is a stronger mordant for this dye than the saturated solution of alum, and is therefore preferable in printing. When the cloth has been prepared with the mordants for dyeing and put into the decoction, the liquor ought to be heated to about 150° , as at this temperature the process goes on more rapidly than when cold. From 20 minutes to half an hour's steeping will be sufficient to impart to the cloth the brightest yellow. Boiling the cloth in the liquor injures the color."

It was resolved that the specimens should be submitted to those who are best acquainted with dyes in Calcutta, and eventually sent to the London Society of Arts.

The discovery of a new site of coal in *Upper Assam* was announced in a letter from Lieut. H. BIGGE, dated *Pachora hills*, 28th February.

"Knowing the interest you take in all matters connected with science, &c., I beg to acquaint you that Dr. GRIFFITH and myself, whilst exploring the banks of the *Namrúp* river, about nine miles E. S. E. from its junction with the *Bore Dihing*, in the *Singpho* country, have been fortunate enough to discover a most valuable seam of coal in the bank of the river; the upper seam was about 3 feet in depth, the centre one 9 feet, and a lower one of 3. We followed the seam up a small water-course to the south, which it crossed at an angle of 45° , and must have reached the surface a very short distance beyond, but we could not exactly determine this point. The general direction was from W. 5 N. to E. 5 S. the dip being towards the south.

"We loaded a small boat with this coal and sent it down to our camp for trial, when it was found to be an extremely good coal, burning with a strong flame and heat, and very lasting, but from the smell, containing a great quantity of sulphureous matter. It does not burn entirely away, but makes a large portion of cinder, and is, I should say, a very valuable description of coal.

"I have preserved some of the pieces which I dug out from the lower part of the centre seam, which I will take an early opportunity of forwarding to you on my return. Major WHITE also discovered several wells of Petroleum close to our camp on the *Namrúp* river, which emit considerable quantities of that oil, but which have hitherto been unknown to Europeans, and apparently almost unused by the neighboring *Singphos*. I have got several specimens of rocks and earth from these wells, which I shall also be happy to send you, should you require them.

"Iron would also have been found, but the weather during our stay was so bad as to prevent our making further or more distant research.

"This coal, though distant, might easily be made available for purposes of steaming on the *Burhamputra*, as small canoes carrying from 1 to 10 maunds, could take down the coal at all seasons to the *Bore Dihing*, where it could be reshipped; and sent down that river to *Jorhath*, or up *Karam* and *Noa Dihing* to *Sadiya*. We are now at the foot of the pass to the Burman territories waiting for the mission, which is said to be coming to settle some boundary questions, but though we have been here since the 25th, no tidings have been received of them, and at this season; we shall, from the constant rain, be lucky to escape back to *Sadiya*, about 12 marches, without sickness."

The *Namrúp* coal is of various quality, from a genuine lignite of woody fibre passing into true coal as it descends. Two specimens gave the following composition.

	Fibrous Lignite.	Compact Coal.
Volatile matter, including water,	48.9	39.9
Carbon or coak,	47.7	58.1
Ash, red ochreous,	3.4	grey earthy 2.0
	100	100
Specific gravity,	1.312	1.244

J. P.

In forwarding Lieut. BIGGE's specimens, Captain JENKINS notices the discovery of another site of coal in the *Dyung*, a naddi of Central *Kachar*, a new locality calculated to prove highly valuable from its accessibility. The specimen represents a jet coal of fine rich glossy texture, spec. grav. 1.220. With it are associated iron sand and pyrites.

X.—Meteorological Register.

Meteorological Register, kept at the Assay Office, Calcutta, for the Month of March, 1837.

Day of the Month.	Observations at 10 A. M.							Calculated Humidity.				Observations at 4 P. M.							Calculated Humidity.				Register Ther- mometer extremes.	Wind.	Weather.	
	Old Stand. Barometer at 32°.	New Stand. Barometer red.	Thermome- ter in air.	Depression of wet-bulb.	Do. by Hygro. lies Hygro.	Dew-point.	Hair Hy- grometer.	Centesimal tension of vapour by wet-bulb.	Do. by hair Hygrom.	Do. by dew-point.	Old Stand. Barometer at 32°.	New Stand. Barometer red.	Thermome- ter in air.	Depression of wet-bulb.	Do. by Les. lies Hygro.	Dew-point.	Hair Hy- grometer.	Centesimal tension of vapour by wet-bulb.	Do. by hair Hygrom.	Do. by dew-point.	Cold on roof.	Heat insun's rays on roof.				
1	30.028	30.016	79.3	8.8	10.7	54.8	77	59	54	46	29.940	29.906	84.9	14.3	14.3	54.3	71	43	45	38	60.0	122.0		N.W.	cloudy.	
2	29.998	29.986	79.7	8.7	10.7	55.5	84	67	66	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		nw.	do	
3	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
4	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
5	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
6	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
7	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
8	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
9	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
10	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
11	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
12	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
13	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
14	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
15	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
16	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
17	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
18	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
19	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
20	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
21	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
22	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
23	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
24	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
25	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
26	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
27	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
28	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
29	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
30	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
31	30.000	29.988	79.9	8.6	10.7	55.5	79	66	65	52	880	887	80.3	9.7	9.7	52.5	80	57	59	41	60.0	106.6		sw.	do	
Mean	29.992	29.978	82.0	9.0	10.7	62.6	81	61	62	55	29.775	29.741	90.9	17.1	17.1	55.8	69	39	43	38	67.7	114.3		N.W.	cloudy.	

The barometrical differences at 10 and 4 are 0.22 and 0.53. In January they were 0.24 and 0.53. From the 20th the old hygrometer, supplied with new hair and properly verified in its scale, is registered. There are in fact three hair hygrometers of which the indications agree very closely together.



Sketch
of the
COUNTRY north of AIT
showing
CAPT. HANNAY'S ROUTE
FROM AIT TO
AMBER MINES ON THE ASSAM FRONTIER
in 1835-6
Scale 32 miles to the inch

Resources by
Capt. H. B. Pemberton

JOURNAL

OF

THE ASIATIC SOCIETY.

No. 64.—*April*, 1837.

I.—*Abstract of the Journal of a Route travelled by Capt. S. F. HANNAY, of the 40th Regiment Native Infantry, from the Capital of Ava to the Amber Mines of the Húkong valley on the South-east frontier of Assam. By Capt. R. BOILEAU PEMBERTON, 44th Regt. N. I.*

[With a Route Map of the country north of *Ava*.]

From the termination of the Burmese war to the present period the spirit of inquiry has never slept, and the most strenuous exertions have been made by the officers employed on the eastern frontier to extend our geographical knowledge to countries scarcely known but by name, and to acquire some accurate information regarding the manners, customs, and languages of the various races of men by whom they are inhabited.

The researches of Captains BEDFORD, WILCOX, and NEUFVILLE, and of Lieut. BURLTON in *Assam*, dispelled the mist which had previously rested on the whole of the eastern portion of that magnificent valley; and the general direction and aspect of its mountain barriers, the courses and relative size of its rivers, the habits of the innumerable tribes who dwell on the rugged summits of its mountains, or on the alluvial plains at their base, were then first made the subject of description, founded, not on the vague reports of half-civilized savages, but on the personal investigations of men, whose scientific attainments enabled them to fix with precision the geographical site of every locality they visited. The journey of WILCOX and BURLTON to the sources of the *Irawadí* river had proved the absence of communication between it and the great *Tsanpo* of *Thibet*, but they were unable to prosecute their examination further east; and though their researches had extended to a point not more than twenty miles dis-

tant from the meridian on which the labors of the Jesuit Missionaries in *Yunan* had been abruptly terminated, the intervening space, and great valley of the *Irawadí* still remained closed against them, and every attempt to enter either, from *Assam* or *Manípúr*, was defeated by the jealous vigilance of the Burmese authorities.

It is generally known that the course of the lower portion of the *Irawadí* river, or that part extending from *Rangún* to *Ava*, had been delineated by Lieut. WOOD of the Engineers, who accompanied Captain SYMES on his embassy to that Court; and that the features of the surrounding country, the size of the towns, its natural productions and population, had at the same time been investigated by the accurate BUCHANAN. Charts of this portion of the river, extending to *Monchabu*, the capital of the great *ALOMPRA*, had at a far earlier period been constructed, but the surveys were avowedly made in a manner not calculated to inspire much confidence in their accuracy; and the attention of Europe was first extensively drawn to this field of inquiry by the publication of SYMES, whose exaggerated views of the civilization, power and resources of the Burmese empire were generally adopted, while the more accurate estimates of his successor COXE were treated with comparative disregard.

In the very infancy of our intercourse with the Burman empire, and when the most persevering attempts were made to obtain settlements at various points of the coast, the more remote stations on the upper portion of the *Irawadí* river were not forgotten; and *Bamú* or *Bamo* was even then known as the emporium of a trade between the Burmese and Chinese, in which our aspiring merchants were most anxious to share. It is asserted that, at the commencement of the 17th century, factories were established in that neighborhood, but the permission to remain was shortly afterwards withdrawn, and the information which it is supposed was then obtained of the surrounding country has never been rescued from oblivion:—this is the less to be regretted as the loss has been fully compensated by the results of recent research; and the journey of Captain HANNAY, of the 40th Regiment Native Infantry, from *Ava* up the *Irawadí* river, to the frontier towns of *Bamo* and *Mogaung*, has at length rendered this hitherto inaccessible region almost as well known to us as the more southern districts, through which this noble river directs its course. Many geographical points of extreme interest have been determined by the personal observation and inquiries of this meritorious officer. *Bamo* has for the first time become accurately known from the same source—much valuable information has been gained

respecting the trade carried on between *Ava* and *China* in this remote corner of the *Burman* empire—the habits and localities of some of the principal tribes occupying the mountainous tracts bordering on western *Yunan* have been successfully investigated—the position of the very remarkable valley of *Húkong* has been determined—the *Pyendwen* or amber mines have for the first time been examined by the eye of European intelligence—the latitudes of the principal towns between *Ava* and *Múngkhong* have been ascertained by astronomical observation with a degree of accuracy sufficient for every purpose of practical utility, and they may now be regarded as established points, from whence inquiry can radiate in every direction with a confidence which the most zealous and enlightened investigators have been hitherto unable to feel in prosecuting their researches, from the want of a few previously well-determined positions at which to commence or terminate their inquiries.

To an act of aggression on the part of a *Singpho* tributary of *Ava* against a chieftain of the same clan residing under our protection, are we indebted for the opportunity of acquiring the information now gained, and the feud of two insignificant borderers may prove the immediate cause of a more intimate communication than had ever previously existed between our recently acquired possessions in *Assam* and the northern provinces of the *Burman* empire.

The *Bísa* and *Dupha* Gaums are the heads of two clans of *Singphos*, occupying the northern and southern faces of the chain of mountains, which forms a lofty barrier between *Ava* and *Assam*. The former chieftain, on our conquest of the latter country, tendered his submission and was admitted within the pale of that feudatory dependence which many other tribes of the same clan had been equally anxious to enter ;—he was uniformly treated by the local authorities with great consideration, and was located at the northern foot of the *Patkoí* pass leading from *Assam* to the *Húkong* valley. Between this chieftain and the *Dupha* Gaum a feud had existed long previous to our assumption of the sovereignty of the country ; and the latter, at the close of the year 1835, headed a party, which crossing the mountains from the Burmese province of *Húkong*, entered *Bísa*, the residence of the chief of that clan, and after ravaging and plundering the village, sealed their atrocity with the indiscriminate murder of all the inhabitants that fell into their hands. The circumstances were made known to the British Resident at the Court of *Ava* ; inquiry was demanded, and security required against the recurrence of similar acts of aggression. A deputation from the capital was ordered

to the Burmese frontier for the purpose of instituting the necessary investigation, and Colonel BURNEY, the enlightened representative of British interests at that court, failed not to avail himself of the opportunity thus unexpectedly afforded, of attaching an officer to the mission; and Captain HANNAY, who then commanded his escort, was selected for the duty.

The party, consisting of the newly appointed Burmah governor of *Mogaung*, of Captain HANNAY and several Burmese officers of inferior rank, with a military escort, left *Ava* on the 22nd of November, 1835, in a fleet of 34 boats of various sizes, for a part of the country which had been uniformly closed against strangers with the most jealous vigilance. "No foreigners," says Captain HANNAY, "except the Chinese, are allowed to navigate the *Irawadi* above the chokí of *Tsampaynago*, situated about seventy miles above *Ava*; and no native of the country even is permitted to proceed above that post, excepting under a special license from the Government. The trade to the north of *Ava* is entirely in the hands of the Chinese, and the individuals of that nation residing at *Ava* have always been vigilant in trying to prevent any interference with their monopoly."

The mission was detained the two following days near the former capital of *Amarapura*, to complete the quota of troops by which it was to be accompanied, and whose discipline, when they did join, was very soon found to be on a par with their honesty.

"They work their own boats," says Captain HANNAY, "some of which are covered in, and others are quite open. Their musquets (if they deserve the name) are ranged here and there throughout the boat, and are never cleared either from rust or dust, and wet or dry they are left without any covering. Each man carries a canvass bag, which is a receptacle for all sorts of things, including a few bambú cartridges. He wears a black *Shán* jacket and a head dress or *goung-boung* of red cotton handkerchief, and thus equipped he is a complete Burmah militia man. They appear on further acquaintance to be better humoured than I at first thought them, but they are sad plunderers, and I pity the owners of the fields of pumkins or beans they come across. I have remarked that whatever a Burman boatman eats in addition to his rice, is generally stolen."

Except at *Kugyih*, where there are said to be several Christian villages, of which, however, no satisfactory information could be obtained, the progress of the mission was unmarked by any circumstance of interest, until its arrival at *Yedan*, where they entered the

first *kyouk-dwen*, or rocky defile, through which the river directs its course. Lower down, the extreme breadth of the stream had varied from one to two and a half miles, but here its width was contracted to less than a quarter of a mile, with a porportionate increase in the depth and velocity of the current. During the rainy season of the year, boats shoot through these narrow passes with terrific velocity, and the numerous eddies caused by the projecting rocks, add greatly to the danger of the passage. In this part of their course, the mission frequently met large rafts of bambús descending from the *Shúeli* river, and upon them, small baskets of pickled tea, brought from the hills to the south-east of that river. This tea was said to be manufactured by a race called *Palong Paon*, who are under *Momeit*. At *Tsingú*, Captain HANNAY saw three native Chinese from *Thengyíchú* or *Mounyen*, and several others in the service of the noblemen of the court, had accompanied the expedition from *Ava* with the view of proceeding to the *Kyouk Tsein*, or Serpentine mines near the sources of the *U'ru* river, west of the *Irawadi*. On the 30th of November the party left the village of *Yedan Yua*, where a perceptible change takes place in the character of the country and river. "The latter," says Captain HANNAY, "from covering an extent of miles is sometimes confined within a limit of 150 yards, without rapids or torrents, as I had expected, but almost as still as a lake. In some places its depth is very great being upwards of 10 fathoms. It winds through beautiful jungle, in which the *pípal*, *símal* trees, and bambús, are conspicuous, and it has, generally speaking, a rocky bed and banks, which last rise to a considerable height, and composed of sandstone, which varies from dark to a white and yellow color." At the next stage, or *Thihadophya*, Captain HANNAY mentions a very remarkable instance of the tameness of the fish, which are not allowed to be killed, and are found from about a mile below the village to an equal distance above.

"If rice is thrown into the water from the boat, a dozen fish, some of them as much as three and four feet long, come to the surface, and not only eat the rice, but open their mouths for you to put it in, and they will allow you to pat them on the head, which I and some of my followers actually did. Some of these fish are apparently of the same species as those called in India *gúru* and *rúta*: indeed the Hindus who are with me called them by these names. The breadth of head is remarkable, and the mouth very large; they have no teeth,—at least so the people told me, whom I saw feeling their mouths." This spectacle, strange as it must have appeared, was hardly more so

than the adventure of the following morning, when Captain HANNAY "was awoke by the boatmen calling to the fish to participate in their meal."

On the 1st of December the expedition arrived at *Tsampaynago*, which has been before mentioned as the limit, beyond which, even natives of the country are not permitted to proceed without an express order from the Government. The custom-house or thana is on the right bank of the river, and *Malé myú* which is close to it, contains about 800 houses with many very handsome gilded temples.

The Myothagyí or deputy governor of the town, is also the custom officer, and a tax of 15 ticals per boat is levied on the Chinese coming from *Bamo*. Old *Tsampaynago myo* is situated at the mouth of a small river which flows from *Mogout* and *Kyatpen*, and falls into the *Irawadí* immediately opposite the modern chokí of that name. The sites of *Mogout* and *Kyatpen*, where some of the finest rubies of the kingdom are obtained, were pointed out to Captain HANNAY as lying in a direction N. 80° E. of *Tsampaynago*, and about 30 or 40 miles distant, immediately behind a very conspicuous peak called *Shueú Toung*, which he estimated at 3,000 feet high. The *Madara* river, as well as that of *Tsampaynago*, flows from the same mineral district which must greatly facilitate communication with it. The inhabitants of the country were unwilling or afraid to communicate any information regarding these secluded spots, and their exact locality is still a subject of conjecture. The mines are described as in a very swampy situation, and surrounded at a trifling distance by lofty hills. The three places at which the gems are principally sought, are *Mogout*, *Kyatpen* and *Loungthé*, and the principal miners are Kathays or Manípúris, with a few Chinese and Shans. The other most celebrated spot is *Momeit*, the site of which BUCHANAN found some difficulty in determining, but which Captain HANNAY learnt was not more than two or three days' journey, or between 20 or 30 miles north of *Mogout* and *Kyatpen*. While at this place Captain HANNAY says, "they heard the people who were cutting bambús in the hills, rolling bundles of them down the face of the steep. Having made a road by felling the trees, the woodmen allow bundles of 150 and 200 bambús to find their way to the bottom, which they do with a noise that is heard at the distance of eight miles. They are then floated down the small river into the *Irawadí*, but this operation can only be effected during the rains." The party now began to feel the cold excessively, and its severity was greatly heightened by a strong northerly wind, which seldom subsided until the afternoon, and was particularly keen in the narrow passes or *kyouk-dwens*.

Tagoung Myú, which was reached on the 5th of December, is an object of peculiar interest, as it is said to have been built by a king from Western India, whose descendants afterwards founded the kingdoms of *Prome*, *Pagan* and *Ava*. Captain HANNAY found the walls of the old fort dwindled away to a mere mound, and hardly discernible from the jungle with which they were covered; but adds, "that enough is still seen to convince one that such a place did formerly exist. The fort has evidently been parallel with the river, and is on the left bank which is high and composed of sandstone. About half a mile inland, the remains of the inner walls run north and south, with an opening or gap to the east, in which there is an appearance of a considerable ditch, which I was told is filled with water in the height of the rains. The whole has more the appearance of an old brick fort, than any thing I have seen in *Burmah*, and I should say it had been built by a people different from the present race of Burmans."

About a mile to the south of *Tagoung* are the extensive ruins of *Pagan*, which stretch as far as the eye can reach, and here Captain HANNAY discovered impressions of Hindu Buddhist images, stamped upon a peculiar kind of brick composition (*terra cotta*), and with inscriptions which he imagined to be written in some variety of the Deva-nágrí character. The Burmese on the spot were unable to explain their nature or origin, and the learning of an aged priest proved equally incompetent to the task of deciphering them:—they were subsequently, however, submitted to some Burman antiquarians at the capital, by the Resident, whose paper on the subject and a drawing of the images appeared in the 51st No. of the *Journal of the Asiatic Society*.

At *Shwezi-goung*, a large pagoda among the ruins of *Tagoung*, Captain HANNAY obtained an extensive view of the subjacent country, and more accurate information of the site of the celebrated mines of *Momeit* than had been practicable at an earlier period of his voyage. From these accounts it appears that the locality which is said to produce the finest rubies in the kingdom, is about forty-five or fifty miles east of *Tagoung Myú*, from whence it can be reached by a foot traveller in three or four days, and by a laden bullock in ten. A drove of these animals was just about to leave *Tagoung* for *Momeit* on Captain HANNAY's arrival, and from the owners he learnt "that after selling their *ngapee* (potted fish) at *Momeit*, *Mogout* and *Kyat-pen*, they proceeded to the country of the Palongs, which bounds the district of *Momeit* on the east, and purchase tea, both pickled and formed into balls, a part of which is brought to *Ava*." The fish,

which apparently forms the staple of the trade, is said to be of a remarkably fine description, and is dried in a manner peculiar to *Tagoung*.

On the left bank of the river, between *Henga-myo* and *Tagoung*, the teak tree first begins to appear, and at *Kyundoung* on the opposite side, it is said, that timber is found sufficiently large to form a boat from a single tree; it grows principally on the western face of the hills, at whose eastern base *Kyundoung* stands. A delay of two days at this village enabled Captain HANNAY to ascend to the summit of the first range of hills, by the road which leads across them to the valley of the *Mú* river: he found it a well-beaten track and great thoroughfare, by which the inhabitants of the country as far west as *Wantha Myú*, are accustomed to convey their supplies of fish, salt and oil from *Kyundoung*, a place apparently of some trade: the bazar contained 50 shops which were large and supplied with British piece goods, uncleaned cotton, silk, and cotton Burman dresses, coarse white cloth and other articles of country manufacture. "Besides these," adds Captain HANNAY, "I saw three Chinese shops, where spirits and pork were sold. The streets were crowded with people from the interior, who had come to make purchases, and amongst them were several *Kadús*, a race of people of a different origin from the Burmahs, and scattered over the tract of country between this and *Mogaung*. They are most numerous in the districts of *Manli* and *Mankat* situated on the *Meza* river* which comes from the north and west, and runs between the *Kyundoung* range and that called the *Thegyain* range, still seven or eight miles north of our present position. Rice, being the staple of the country, is an article of barter, and is sent in considerable quantities to *Ava*. Cotton, brought from the interior, is also an article of barter, and a good deal of it is sent to *Bamo*, but a part of it is made into cloth on the spot, as I saw several looms at work. Yellow and red cotton handkerchiefs of British manufacture sell here for two ticals a piece, which is about 100 per cent. beyond the price at *Ava*."

To this point of their progress, no diminution in the volume of the *Irawadí* was perceptible, and the channels proved sufficiently deep for the passage of large boats, from which we may infer that all the principal feeders or affluents, which pour their tributary streams into the *Irawadí* were still further north, and had not yet been reached. The first of any importance noticed is, the *Shue lí khyoung* on the left bank, the northern branch of which flows from the Chinese fron-

* A small stream not more than fifty yards broad, with but little water.

tier town of *Santa-fú*, called by the Burmahs *Mola Santa*, and a southern branch from *Momeit*, the site of the celebrated ruby mines already noticed: the confluence of these streams is represented as occurring at the village of *Laha* about 40 miles from the *Irawadí*. Neither branch can be of any magnitude, for Captain HANNAY remarks that at the point of junction with the *Irawadí*, the breadth of the *Shuéli* is not more than 300 yards, and that it contained but little water,—a satisfactory proof that, this stream can have no connexion with the *Tsanpo* of *Thibet*.

At *Yebouk yúa*, a day's journey above the *Shué khyoung*, two boats passed the party with Chinese in them from *Bamo*. "They work their boats which are of the Burman round-shaped flat-bottomed description, and seem to be of a tolerable size, as there must have been at least twenty men in each. These boats are particularly well adapted for the navigation of the *Irawadí*, as they do not draw more than 18 inches of water."

On the 13th of December the party reached *Katha*, a town of some extent on the right bank of the river, containing about 400 houses, and a population whose numbers appear to be annually increased by large parties who come from the interior, and take up a temporary abode on the right bank of the river, and on the numerous islands and shoals in its bed, for the purpose of fishing and traffic: at the close of the season they return to their respective homes in time for the resumption of agricultural labour, and a traveller ignorant of this nomade custom, which appears to be very general in the upper part of the *Irawadí*, would form an exaggerated estimate of the population of the towns and villages in which they are thus temporarily congregated. "The bazar of *Katha* was well supplied with good native vegetables of various sorts, fresh and salt fish, pork sold by Chinamen, dried cocoanuts, sugar-cane, and rice from the coarsest to the best quality, the latter selling at 15 ticals a hundred baskets." Captain HANNAY also saw a small quantity of stick lac in the bazar, but it was dear, and of a description very inferior, to that which is procurable at *Rangún*, and is brought from the *Shán* territory east of *Ava*. Even at this remote spot there was a 'tolerable display' of British piece goods, but not nearly to the extent noticed at *Kyundoung*. Captain HANNAY mentions a *Kyoung* or monastery recently erected by the *Myothagí* of *Katha*, as one of the most remarkable objects of the place. "It is a large wooden building covered with beautiful carved work, and situated near the river. The grounds surrounding it are extensive, and very tastefully laid out with fruit trees and flowery shrubs,

amongst which I saw the Chinese rose in great plenty." The river is here confined by lofty banks not more than two furlongs apart, but the stream is very deep, and the spot appears to be a particularly favorable one for obtaining a good section of the river, the velocity of which at *Wegyih*, a village above *Katha*, Captain HANNAY estimated at one mile and a half an hour, with an average depth of 18 feet. This would give a discharge of about 52,272 cubic feet per second, while that of the *Ganges* at the same season may be assumed on RENNELL's authority at 80,000 feet per second, giving for both a proportion of 1 to 1.53. No satisfactory comparison can, however, be yet instituted between these magnificent rivers, for up to the present moment we are without a single section of the *Irawadí*, which could be safely assumed as the basis of a calculation sufficiently accurate for such a purpose.

At *Kyouk-gyih*, which the party reached on the 17th, they had fairly entered the remarkable curve in the *Irawadí* which had been previously represented in all our sketches of the river, and served, in the absence of more accurate information, as a point of reference, generally well known to the Burmahs and Sháns. Here there is a ledge of rocks, over which the stream passes with so great a degree of rapidity, as to render it very difficult of navigation during the rains. The rocks are serpentine and the sand collected amongst them appeared to be a mixture of small garnets and iron sand. The right bank of the river, for two miles below *Kyouk-gyih*, is composed of small round stones and sand, and Captain HANNAY was told that the natives wash the soil for gold.

No circumstance throughout this voyage afforded a more gratifying proof of the friendly feeling generally of the Burmese authorities, than the attentions which Captain HANNAY received at every place at which they halted. Houses were erected for his accommodation at the various stages of the route, differing in no respect from those intended for the *Myúwún* of *Mogoung*; presents of fruit, rice, and vegetables were daily made to himself and followers, and the supposed tedium of his evenings was relieved by a band of singers and dancers, who are found at almost every town and village in the Burman empire. At *Kyouk-gyih*, these attentions were shewn to a very remarkable degree by the *Woon* of *Munyen*, "whose civility," says Captain HANNAY, "was the subject of conversation with every one in the fleet.

"Every individual has received sufficient rice and fish for two days' supply, and my boat was filled by him with all sorts of provisions, enough certainly to last myself and my followers for a week." The

house of this liberal Woon, Captain HANNAY describes "as a very neat and comfortable dwelling, with a remarkably clean compound, in which there is a garden laid out with a great deal of taste, and, besides many articles of costly Burman household furniture, he has a number of very fine muskets and other arms." The party had now approached within a comparatively short distance of *Bamo*, and the vicinity of this celebrated mart was shewn, in more numerous villages than had been seen for several preceding days. From *Shuegú Myú* to *Balet*, a distance of three miles, the houses appeared to extend in an uninterrupted line, and *Kywín do*, the name of a celebrated island in the river, covered with 100 pagodas, is most conveniently situated between these towns, the inhabitants of which hold their principal festivals upon it, at particular seasons of the year.

Near this spot, is the entrance to the second *kyouk-dwen*, the scenery of which appears to be very magnificent, and is thus described by Captain HANNAY. "The river passes directly through the hills, which rise perpendicularly on both sides to the height of 400 feet; they are rocky, and of irregular and singular forms, having at the same time a sufficient number of trees on them to render the scenery very striking. One part of the range, on the right bank, rises as perpendicularly as a wall to the height of 500 feet, forming a grand and terrific precipice. This *kyouk-dwen* extends for four miles, and the hills which form it, are throughout of a rocky nature. The upper part of them appeared to be sandstone, resting on a base of blue-colored limestone, mixed with veins of beautiful white marble; and at one spot I saw large masses of compact and foliated primitive limestone, along with calcareous spar in large pieces."

Koung-toun, which the mission reached on the 20th, is said to contain about 200 houses, and is noted for the defence made by its Burmese garrison, against a large invading force of Chinese during the last war between these two nations. A ditch surrounds the town, and the remains of a brick redoubt, loop-holed for arrows or musquetry are still perceptible encircling a pagoda. "This is now all that is to be seen," adds Captain HANNAY, "of the old fortification, but the town is still surrounded by a double palisade of bambús with sharp stakes placed between them." These defences are intended for the protection of the inhabitants against the Kakhyens, a tribe occupying the hills to the east, who frequently come down in small bodies for the purpose of carrying off cattle. Captain HANNAY saw a great number of this tribe at *Koungtoun*, where they barter their rice and cotton for salt and *gnapee*, (potted fish) and describes them, with few

exceptions, as perfect savages in their appearance ; their cast of countenance forms a singular exception to the general rule, for it is not at all Tartar in its shape, but they have, on the contrary, " long faces and straight noses, with a very disagreeable expression about the eyes, which was rendered still more so by their lanky black hair being brought over the forehead so as entirely to cover it, and then cut straight across on a line with the eyebrows. These people, though surrounded by Sháns, Burmese and Chinese, are so totally different from either, that it is difficult to imagine from whence they have had their origin."

On the 20th of December the fleet moored at a village about five miles below *Bamo*, which being a town of great importance, and the residence of an officer inferior in rank to the *Mogoung* Woon, some previous arrangements were necessary to enable the latter to land with the éclat due to his rank. On reaching the town late on the following day, they found the left bank on which it stands so precipitous, that they were compelled to cross to the opposite side of the river, and a feeling of jealousy having arisen between the two Woons of *Mogoung* and *Bamo*, the former resumed his journey on the 22nd, which compelled Captain HANNAY to defer the inquiries he was so anxious to make until his return in April, when he found the people far more communicative than they had ventured to be in the presence of the *Mogoung* Woon. The information obtained on both occasions will be more advantageously shewn in a connected form than in the detached portions in which it necessarily appears in his journal, and Captain HANNAY's first remark solves a difficulty, which, like the *Adria* of ancient history, has proved a stumbling block to modern investigation. In the course of inquiry into the sites of the principal towns on the *Irawadí* river, that of *Bamo* naturally held a very prominent place, and some of the native Sháns, who were questioned on the subject affirmed that it was on the bank of the *Irawadí* river, while others, whose opportunities of acquiring information had been equally good, positively denied this statement, and fixed its position on the left bank of a small stream which flows into the *Irawadí*, about a mile above the present town. Captain HANNAY reconciles the conflicting statements, briefly but satisfactorily, in the following remark :—

"I find that this is a *modern* town erected on the banks of the *Irawadí*, for the convenience of water carriage between it and *Ava*. The *old* Shán town of *Manmo*, or *Bamo*, is situated two days journey up the *Tapan* river, which falls into the *Irawadí* about a mile above

the new town of *Bamo* or *Zee-theet-zeit*, or new mart landing-place."

"This modern town," says Captain HANNAY, "is situated on high unequal ground, and the bank towards the river is from 40 to 50 feet in height, and composed of clay. With the exception of *Ava* and *Rangún* it is the largest place I have seen in Burmah, and, not excepting these places, I certainly think it the most interesting. The novelty of so large a fleet as ours passing up (and no doubt, having heard that a European officer was of the party) had attracted a great crowd of people to the river side, and on landing, I felt as if I were almost in a civilized land again, when I found myself amongst fair complexioned people, wearing jackets and trowsers, after being accustomed to the harsh features and party-colored dress of the Burmans. The people I saw were Chinese from the province of *Yunan*, and Sháns from the Shán provinces subject to *China*. *Bamo* is said to contain 1500 houses, but including several villages which join it, I should say it contained 2000 at least, 200 of which are inhabited by Chinese. Besides the permanent population of *Bamo*, there are always a great number of strangers there, Chinese, Sháns, and Kakhyens, who either come to make purchases or to be hired as workmen. There are also a great number of Assamese both in the town and in the villages immediately connected with it, amongst whom are several members of the *Tapan* or *Assam Rája's* family. *Bamo* is the jaghire of the *Tapan Rája's* sister, who is one of the ladies of the king of *Ava*.

"The inhabitants of this district live in large comfortable houses, which are thatched with grass, and walls made of reeds. They are generally railed in, and all the villages have bambú palisades surrounding them. The Palongs of the Chinese frontier are, I am told, remarkably industrious. They are good dyers, carpenters and blacksmiths, and all the *dhas* or swords used in this part of the country are made by them." "I received," adds Captain HANNAY, "great attention from the Myúwún of *Bamo*, and also from the head Chinese there; they sent me tea, sugar, dried fruits, and vegetables, for which I, of course, made a suitable return. The annual caravan from *China* had not arrived, and the supply of Chinese articles in the shops was very small."

The people of *Bamo* were so strongly impressed with the idea that Captain HANNAY's only object was to find a road by which British troops might penetrate to *China*, that he found it extremely difficult to obtain any information from them regarding the routes into that country. The Chinese themselves, however, proved more com-

municative, and from them he learnt the existence of several passes from *Bamo* into *Yunan*; but as one of these presents far greater facilities of transit than the others, it is generally adopted for commercial intercourse, and the mode of carrying it on is thus described. "At the distance of two miles* above *Bamo* the mouth of the *Taping* or *Tapan* river is situated. This river has a direction N. 70 E. for about two days' journey, when it cuts through the Kakhyen range, and under these hills, old *Bamo*, or *Manmo*, is situated. To the latter place the Chinese take their merchandise from modern *Bamo* by water, and then proceed overland to the chokí or *ken* of *Loailong* near *Mowan*, which they reach in three days, and from thence to *Mounyen* or *Tengyechew* in the province of *Yunan*, at which place they arrive in eight or nine days. The road from *Bamo* to *Loailong* is through the hills, which are inhabited by Kakhyens and Palongs, after which it passes through the country of the Sháns, called by the Burmans, *Kopyi-doung*. The road is described as being very good, and quite a thoroughfare. The *Tapan Khyoung* is not navigable for large boats, in consequence of which the Chinese use two canoes tied together, with a platform over them, for the transport of their merchandise to *Manmo* or old *Bamo*, and for the remainder of the journey it is carried on ponies or mules."

This description of the size of the *Tapan Khyoung*, which is also called by the Sháns *Numtaping*, completely sets at rest the keenly agitated question of its identity with the *Tsanpo* of *Thibet*, and the theory of KLAPROTH, (who, on the authority of Chinese writers, calls it the *Pinglankhyoung*, and maintains it to be the prolongation of the *Tsanpo*) is shewn to have no better foundation than his unauthorized change in the position assigned to the latter river, in that part of its course which passes through *Thibet*. Captain HANNAY describes the *Taping* as not more than 150 yards broad, and with only sufficient water to float a small boat. The Singphos affirm that it is a branch of the *Shuelí Khyoung* (the *Lungshué kiang* of the Chinese) from which it separates above *Momein*, but the accuracy of this report appears highly questionable.

The principal article of trade, which is cotton, is entirely in the hands of the Chinese, who arrive at *Bamo* in the months of December and January. The greater part of their imports is taken to *Ava*, as neither the natives of *Mogaung* nor *Bamo* could afford to purchase them. "What they dispose of here," says Captain HANNAY, "are copper pots, carpets and warm jackets." These articles are also

* In another place it is mentioned as only one mile above *Bamo*.

taken all over the Burman territories, as far west as the *Khyendwen*. There are several cotton godowns here, belonging to the Chinese, and there are constantly residing in the town 500 of these people, which, with the numerous arrivals from different parts of the country, gives the place a very business-like appearance, and there is of course a good bazar." There is a very neat temple built by the Chinese of *Bamo*, which Captain HANNAY visited, and was most politely received by the officiating priest. "On entering his house," says Captain HANNAY, "he rose to meet me, saluted me in the English fashion, asked me to sit down, and ordered his people to bring me tea; after which he sent a person with me to shew me the curiosities of the temple. Most of the figures were carved on wood, and different from what I have generally seen in Chinese temples; one of them represented the *Nursinga* of the Hindus. The Chinese of *Bamo*, although different from the maritime Chinese, in language and features, have still the same idea of neatness and comfort, and their manners and mode of living appear to be much the same."

"Their temple and all the houses, which are not temporary, are substantially built of bricks stained blue; the streets are paved with the same material, and the grounds of the temple are surrounded by a neat brick wall covered with tiles." "Besides the trade carried on at *Bamo* by the Chinese, the Sháns, Palongs, and Singphos under *China*, are great purchasers of salt, *gnapee*, dried fish, and rice, but particularly salt, which is in constant demand; and to procure it, numbers of the above named people come to *Bamo*, *Sambaungya* and *Kountoung*. The salt which sells here for twenty ticals of silver for 100 vis, or 28 rupees for 150 seers, is brought principally from *Shein-maga* above *Ava*, and from *Manbú*, which is situated two marches west of *Katha*. The Sháns here are distinguished by their fair complexions and broad good-tempered faces. They wear turbans and trowsers of light blue cotton cloth; they greatly resemble the Chinese, and from living so near that nation, many of them speak the *Yunan-Chinese* language. They inhabit the country to the east of *Bamo*, and their principal towns are *Hotha*, *Latha*, *Santa*, *Sanla*, *Moongsye*, *Moong-woon*, *Moong-man*, *Moong-la*, and *Moong-tye*. The people are generally designated Shán Taroup or Chinese Sháns."

"Although the Palongs speak the Shán, their own native language is a distinct one. The men, though small in stature, are athletic and remarkably well made. Flat noses and grey eyes are very common amongst them. They wear their hair tied in a knot on the right side of the head, and dress in a turban, jacket, and trowsers, of

dark blue cloth. They are a hill people, and live in the tract of country situated between *Burmah* and *China*, but those to the east of *Bamo* pay no revenue to either country, and are governed by their own Tsobuas. The Singpho traders I saw at *Bamo* were very different from those under *Burmah*, and according to their proximity to either Sháns or Chinese, they assimilate to one or other in dress and language."

"The whole of these people," says Captain HANNAY, "pay for every thing they require in silver; and were it not for the restrictions in *Burmah* on the exportation of silver, I think an intelligent British merchant would find it very profitable to settle at *Bamo*; as, besides the easy intercourse with *China*, it is surrounded by numerous and industrious tribes, who would, no doubt, soon acquire a taste for British manufactures, which are at present quite unknown to them." The revenue of the district is estimated by Captain HANNAY at three lakhs of rupees per annum; and he adds, "If appearance of comfort may be taken as a proof of its prosperity, the inhabitants of *Bamo* shew it in their dress and houses. I have seen more gold and silver ornaments worn here than in any town in *Burmah*."

On leaving *Bamo*, the appearance of the country became much more hilly, and great precautions were taken to guard against surprise by the Kakhyens, who inhabited the different ranges in the vicinity of the river.

At *Hakan* the escort was reinforced by 150 soldiers from *Bamo*, and a number of families who were proceeding up the river, joined the fleet to enjoy the protection afforded by so large a convoy. The Sháns who composed the quota from *Bamo* were a remarkably fine set of men from the banks of the *Tapan Khyoung*, and formed a striking contrast, in dress and appearance, to the miserable escort which had accompanied the party from *Ava*.

At the village of *Thaphan-beng* they entered the third *Kyouk-dwen* from which a very beautiful view is obtained of the fertile valley of *Bamo*, bounded on the east by the Kakhyen hills, which are cultivated to their summits. Serpentine and limestone were the principal rocks found in this defile, as well as the preceding one; and as the river was here in some places not more than 80 yards broad, with a depth of 30 feet, and its rise is in the rains 50 feet above the present level, the rush of waters must at that season be terrific. The natives, indeed, declared, that the roar at that time was so great, as to prevent them from hearing each other speak, and that the defile could only then be traversed on rafts: now, however, it coursed gently along with an almost imperceptible motion.

At *Thabyebeng-yúa* they found a new race of people called Phwons, who described themselves as having originally come from a country to the north-east, called *Motoung Maolong*, the precise situation of which could not be ascertained. Their native language, which they speak only in intercourse with each other, differs altogether from the Shán and Burmese, but they have no written character. There appear to be two tribes of this race, distinguished by the Burmahs as the great and small:—the former are found only at *Tshenbo* and in the vicinity of the third *Kyook-dwen*, while the inferior tribe is scattered all over the country: the only difference apparently between them consists in some trifling varieties in the dialects they speak. Their extensive cultivation proved their agricultural industry, and four Chinese Sháns were constantly employed in manufacturing their implements of husbandry. Their houses were of a construction totally different from any that had been previously seen, and consisted of a long thatched roof rounded at the ends and reaching almost to the ground. Inside of this and at the height of eight or ten feet from the ground, the different apartments are formed, the walls of which are made of mat.

“From the outward appearance of these houses,” says Captain HANNAY, “it would be difficult to imagine that they were habitations, but inside they are very comfortable, and from the great thickness and peculiar form of the roof, the inmates cannot be much affected either by heat or cold.” The same description of house is built by the Sháns occupying the valley of *Kubo*, and it is probable that the Phwons have adopted this style of building from some tribe of that widely scattered nation.

On the 26th the fleet reached a part of the *Irawadí*, which is considered the most dangerous point in its navigation. It is called *Puskú*, and the stream is there confined to a breadth of 30 yards, but with no less than nine fathoms of depth in the centre. The rocks bore every appearance of fierce and irregular volcanic action, varying in color “from brown, yellow, red and green, to a jet black which shone like a looking glass.” The strata also presented a scene of great confusion, some being vertical, some horizontal, and others twisted; “the whole having exactly the appearance of having been poured out from a furnace.”

The navigation of the *Irawadí* river up to this point had been unmarked by difficulties of any magnitude, and, with the exception of the passes through the *Kyook-dwens*, the channel appears to have afforded, even at that season of the year, an abundant supply of water for the

largest class of boats, which ply between *Ava* and *Bamo*: above the village of *Namhet*, however, they first met a succession of rapids extending for a mile and a half, which were even then considered dangerous; and Captain HANNAY remarks, that he had seldom seen in the worst season, and worst part of the *Ganges*, a stronger current, or more turbulent water than at the rapids of *Shuégyain-man*, a short distance above the village of *Namhet*.

On the arrival of the fleet at *Tshenbo*, which is about 10 miles below the mouth of the *Mogaung* river, the boats by which the party had been conveyed from *Ava* were exchanged for others of a smaller description, better adapted for the navigation of so small and tortuous a river as that of *Mogaung*. The one prepared for Captain HANNAY's accommodation was of the kind called by the Burmese "*loung*:" it was paddled by 25 men, and formed of a single tree, with the addition of a plank 10 inches broad, all round the upper part of it.

Before quitting *Tshenbo*, Captain HANNAY had a visit from the head priest, whose curiosity to obtain some knowledge of European customs and habits could only be satisfied by the display of the contents of his trunks, and the sight of his watch, sextant, and thermometer; all of which he was permitted to examine by Captain HANNAY, who regrets that he had not brought some missionary tracts with him from *Ava* "to give this inquisitive priest some idea of the Christian religion." *Tshenbo*, on the authority of this priest, is said to have been formerly a principal city of the Phwon tribe, who were dispossessed of it, about sixty years ago, by the Burmahs.

On the last day of December the mission reached the mouth of the *Mogaung* river, which Captain HANNAY ascertained by observation to be in latitude $24^{\circ} 56' 53''$. Here they were to quit the *Irawadí*, which, says Captain HANNAY "is still a fine river flowing in a reach from the eastward half a mile broad, at the rate of two miles an hour, and with a depth varying from three fathoms in the centre to two at the edge."

The *Mogaung* river on which the town of the same name is situated, is not more than 100 yards wide, and the navigation is impeded by a succession of rapids over which the stream rushes with considerable velocity. The smallest boat in the fleet was an hour and a half getting over the first of these obstacles, and the Shán boatmen, who are thoroughly acquainted with the character of the river, "pull their boats close to the rocky points, and then, using all their strength, shoot across to the opposite side before the force of the stream had time to throw them on the rocks." The Burmah boatmen adopted the apparently easier method of pulling their boats up along the edge of the stream, but this proved

both difficult and dangerous, one boat being upset and a man drowned. The banks of the river were covered with a dense and impervious jungle, which extended nearly the whole way to *Mogaung*, and no village served to beguile the wearisome monotony of this portion of the journey, until they reached *Akouktoung*, a small hamlet on the right bank inhabited by Phwons and Sháns. Here they met a chief of the *Laphae* Singphos, who had taken up his residence in this village with a few followers, in consequence of a feud with some neighbouring tribes in his own country to the north. Between *Akouk-yúa* and *Tapoh* (the next village seen) the bed of the river is filled with rocks and rapids, which render the navigation exceedingly dangerous, the stream shooting over them with such velocity as frequently to rise above the bow of the boat, which, in case of unskilful management, would be instantly upset. The way in which the Phwons and Sháns overcome these difficulties, formed a striking contrast to the conduct of the Burmah and Kathay boatmen. The former working together with life and spirit, still paid the strictest attention to the orders given by the head boatman; while the latter "who think," says Captain HANNAY, "that nothing can be done without noise, obey no one, as they all talk at once, and use the most abusive language to each other." He thinks the Phwons and Sháns greatly superior to the Burmahs or Kathays,—meaning by the latter those Manipurís resident in *Ava*, who are Burmans in every thing but origin.

After passing the last rapids at *Tapoh* the river expands in breadth to 200 yards; the stream flows with a gentle current, and "the bed is composed of round stones which are mostly quartz. Amongst them, however there are found massive pieces of pure crystal stone, partaking of the nature of talc, and also pieces of indurated clay of different colors. The banks are alluvial on the surface, but towards the base and near the edge of the river the soil becomes gravelly, and in some places has a stratum of beautiful bright yellow-colored clay intersecting it."

On the 5th of January the party disembarked from their boats, and as the Myo-wún was to be installed in his new government, the landing was effected with considerable state. "Arrangements," says Captain HANNAY, "had been made for our reception, and on first landing we entered a temporary house where some religious ceremony was performed, part of which was the Myo-wún supplicating the spirits of three brothers who are buried here, and who founded the Shán provinces of *Khanti*, *Assam*, and *Mogaung*, to preserve him from all evil. After which ceremony he dressed himself in his robe of state,

and he and I proceeded hand in hand through a street of Burman soldiers, who were posted from the landing place to the Myo-wún's house, a distance of nearly a mile: we were preceded by the Myo-wún's people carrying spears, gilt chattas, &c. and at intervals during our walk, a man in a very tolerable voice, chaunted our praises, and the cause of our coming to *Mogaung*. Several women also joined the procession, carrying offerings of flowers and giving us their good wishes."

The Myo-wún appears to have lost no time in availing himself of the advantages of his situation, for on the very day after landing, he commenced a system of unsparing taxation, to enable him to pay for his appointment. A rapid succession of governors within a very few years, all influenced by the same principle, had already reduced the inhabitants of *Mogaung* to a state closely bordering on extreme poverty, and the distress occasioned by the exactions now practised was bitterly complained of by the wretched victims of such heartless extortion. The Sháns inhabitants of the town were employed by the Burmese officers to enforce this excessive payment of tribute from the Singphos and Kakhyens of the surrounding hills, which had led to much ill-will on the part of the latter, by whom they are stigmatised "as the dogs of the Burmans."

"The town of *Mogaung*," says Captain HANNAY, "is situated at the junction of the *Namyéen* or *Namyang*, and the *Mogaung* or *Num-kong* rivers, and extends about a mile from east to west along the bank of the last named river, the west end of the town being bounded by the *Namyéen khyoung*, which comes from the district of *Monyéen* in a direction S. 43 W. The town of *Mogaung*, strictly speaking, is confined within what is now only the remains of a timber stockade. Outside of this, however, there are several houses, and within a short distance a few small villages are scattered about, but even including all these, there are not more than 300 houses. Those within the stockade are inhabited by Sháns, and those outside by Burmans, Phwons, Assamese and a few Chinese. The latter to the number of 50 reside here, and are under the authority of a Thoogyee of their own nation;—they derive a profit from their countrymen who come annually in considerable numbers to purchase serpentine. Amongst them I saw both blacksmiths and carpenters, and, for the first time since leaving Gangetic India, I saw the operation performed of shoeing horses. The Sháns, inside the stockade, reside in large houses, such as I formerly described having seen amongst the Phwons;—the Burmans and others live in the same description of

houses as are to be seen in every part of *Burmah proper*, but all bear signs of great poverty; and if it were not for the Chinese, whose quarter of the town looks business-like and comfortable, I should say that *Mogaung* is decidedly the poorest-looking town I have seen since leaving *Ava*. There is no regular bazar, all supplies being brought from a distance, and the market people are, with few exceptions, Kakhyens and Assamese from the neighbouring villages."

The arrival at so remote a spot of a European officer was soon bruited abroad, and Captain HANNAY's time was fully occupied in answering innumerable questions put to him by a crowd of visitors, who examined his sextant with great care, under the firm conviction that, by looking through it, he was enabled to perceive what was going on in distant countries;—nor would they believe that the card of his compass was not floating on water, until, to satisfy them, he had taken it to pieces. The paucity of inhabitants and poverty of the town plainly indicated the absence of extensive trade, and Captain HANNAY learnt, that, including the profits derived from the sale of serpentine, the revenues of the town and neighbouring villages did not amount to more than 30,000 rupees per annum, and the Burmah authorities can only enforce the payment of tribute from the Sháns of *Khanti*, and the Singphos of *Payendwen*, by the presence of an armed force. In their last attempt on the latter, a Burmah force of 1000 men was detached from *Mogaung*, of whom 900 were destroyed; and for ten years they had been held in salutary dread by the Burmah governors of the frontier. During his stay at *Mogaung*, Captain HANNAY obtained specimens of the green stone, called by the Burmah's *kyouk-tsein*, and by the Chinese *yueesh**, and which he supposes to be nephrite. "The Chinese," he says, "choose pieces which, although shewing a rough and dingy-colored exterior, have a considerable interior lustre, and very often contain spots and veins of a beautiful bright apple-green. These are carefully cut out, and made into ring stones, and other ornaments, which are worn as charms. The large masses are manufactured by them into bracelets, rings, and drinking cups, the latter being much in use amongst them, from the idea that the stone possesses medicinal virtues. All the

* Monsieur ABEL RE'MUSAT, in the second part of his history of *Khotan*, is said by KLAPROTH (*Mem. Rel. à l'Asié*, tome 2, p. 299) to have entered into a very learned disquisition proving the identity of the *yu* or *yueesh* of the Chinese with the *jasper* of the ancients.—R. B. P.

The *yu* is a silicious mineral, colored with less intensity but passing into heliotrope. It is therefore *prase* rather than *jade* or nephrite.—ED.

yueesh taken away by the Chinese is brought from a spot five marches to the north-west of *Mogaung*, but it is found in several other parts of the country, although of an inferior quality. Serpentine and limestone are the prevailing formations of the base of the highest ranges of hills throughout this part of the country. Steatite is also abundant in the bed of the *Irawadi* below the valley of *Khanti*."

One very important object of Captain HANNAY's mission was to cross the *Patkoi* mountains into *Assam*, and on his arrival at *Mogaung* he waited some days in considerable anxiety for the *Kakhyen* porters, who were to convey his baggage and supplies during the remaining portion of the journey:—he soon found, however, that the authority of the Burmans when unenforced by the presence of a large military detachment, was held in the most sovereign contempt by these hardy mountaineers, and after many fruitless attempts to induce the *Mogaung* woun to allow him to proceed with even a small party, he was constrained to limit his further researches to the *Húkong* valley and amber mines. Repeated remonstrances were necessary to induce the governor to proceed even so far, and it was not until the 19th of the month that an advanced guard crossed the river, and fired a feu de joie, after performing the ceremony of sacrificing a buffaloe to the *Nhatgyee* (or spirits of the three brother *Tsaubuas* of *Mogaung*), without which no expedition ever marches from the town. Even then, the dogged obstinacy of the governor induced him to delay his departure, and it was not until Captain HANNAY threatened that he would instantly return to *Ava* if there were any longer delay, that the wily diplomatist could be induced to move.

On the 22nd they crossed the river, and the camp was formed on the northern bank, in strict accordance with Burmese custom. Captain HANNAY's tent (a common sepoy's pál) was the admiration of every one but its owner, who now for the first time marched with an undisciplined rabble. "The soldiers' huts," says Capt. HANNAY, "are composed of branches of trees and grass, and if they wish to be particular, they cover them with a piece of cloth, which is generally some old article of dress. The *Myo-wún's* station is in the centre of the camp, and in front of him are his own immediate followers, whose huts are formed into a street marked by a double line of spears. At the head of this street the flags are placed, and also the two small cannons (one-pounders), which are sent with the force, I believe, for the purpose of firing three rounds morning and evening, to frighten the neighbouring *Kakhyens*, and which ceremony, I suspect, will be gone through with as much gravity, as if it would have the desired

effect. My position is in front and a little to the left of the Myo-wún, and we are completely surrounded by the soldiers, whose huts are in distinct lines, the men of each district keeping together."

On the 22nd they at length set out, and the style of march was as little in accordance with the military experience of our traveller, as the previous encampment. "The men, to the number of 800, march in single file, and each man occupies a space of six feet, being obliged to carry a bangy containing his provisions, cooking pots, &c. besides his musket, which is tied to the bangy stick. This is the most common mode of marching, but some of them carry their provisions in baskets, which they strap across their forehead and shoulders, leaving their hands free to carry their muskets; but as to using them it is out of the question, and I should say the whole party are quite at the mercy of any tribe who choose to make a sudden attack upon them." On reaching the encamping ground, however, these men gave proof how well they were adapted to this mode of travelling, for in an hour after their arrival, every individual had constructed a comfortable hut for himself, and was busily engaged cooking the rice, which, with the addition of a few leaves plucked from certain shrubs in the jungle, forms the diet of the Burman soldier on the line of march.

The tract of country through which the party passed on the first two days was hilly, and abounded in a variety of fine forest trees; but on approaching *Numpoung*, the second encampment, the country became more open, and the pathway led through a forest of very fine teak trees. The principal rivers all flowed from the *Shuédoug-gyí* range of hills on the east of their route, and are at this season of the year mere mountain torrents, with so little water in them, that the path frequently passes over their rocky beds. The whole route from *Mogaung* to the *Húkong* valley, may be described generally as passing between defiles, bounded by the inferior spurs of the *Shuédoug-gyí* range on the east, and numerous irregular hills on the west; these defiles form the natural channels of numerous streams, which, flowing from the heights above, and struggling amidst masses and boulders of detached rock, make their way eventually to the larger stream of the *Numkong*, which unites with the *Namyen* at *Mogaung*. The only traces of inhabitants perceptible in the greater part of this route were a few cleared spots on the hills in the vicinity of some scattered Kakhyen villages, and a few fishing stakes in the mountain streams. Near the mouth of the *Numsing Khyoung* the party met with a few Kakhyen huts, which appear to

have been constructed by that tribe, during their fishing excursions; and at *Tsadozout*, an island in the bed of the *Mogaung* river, on which the force encamped on the 28th of January, they passed the sites of two Kakhyen villages, and found the ground completely strewn with graves for a considerable distance, the probable result of some endemic disease which induced the survivors to desert the spot. The finest lemon and citron trees, Captain HANNAY had ever seen, were found here, and the tea plant was also very plentiful—the leaf is large, and resembles that sold in *Ava* as pickled tea; the soil in which it grew most luxuriantly is described as of a “reddish-colored clay.” Thus far, a considerable portion of the route had passed either directly over the bed of the *Mogaung* river or along its banks; but at *Tsadozout*, they crossed it for the last time, and at this spot it is described as a mere hill stream with a “bed composed of rolled pieces of sienite and serpentine, with scales of mica in it.” The navigation of the river even for small canoes ceases below this spot, and those which had accompanied the party with supplies were left, from inability, to convey them further.

About four miles north of *Tsadozout* “the road ascends about 100 feet, and passes over a hilly tract, which seems to run across from the hills on the east to those on the west, and is called by the natives *Tsambú-toung*, (the *Mount Samú* of the maps.) This transverse ridge evidently forms the southern limit of the *Húkong* valley, and streams flow from it both to the north and south; the former making their way to the *Khyendwen*, and the latter to the *Mogaung* river.

“*Tsambú-toung*,” says Captain HANNAY, “is covered with noble trees, many of which, I think, are sál, and are of immense height and circumference. The tea-plant is also plentiful, besides a great variety of shrubs which are quite new to me. The rays of the sun seem never to penetrate to the soil of *Tsambú-toung*; it may therefore be easily imagined how damp and disagreeable it is, more particularly as there is a peculiar and offensive smell from a poisonous plant which grows in great abundance in this jungle, and the natives tell me that cattle die almost immediately after eating it.”

On the 30th the party descended from the encampment on the northern face of this ridge, to the Singpho village of *Walobhúm*, and finally encamped on the left bank of the *Edíkhyoung*, about three furlongs distant from *Meinkhwon* or *Múngkhúm*, the capital of the *Húkong* valley, “where,” says Captain HANNAY, “our journey must end for the present; as, besides having no provisions, the men composing the force are so completely worn out with fatigue, that I

am certain they could not proceed further without a halt of some days." This interval Captain HANNAY assiduously employed in collecting information regarding the valley, which had from a very early period been an object of great geographical interest, as the site of the *Payendwen* or amber mines, and at no very remote era probably formed the bed of an alpine lake, which, like that of the *Manipur* valley, has been subsequently raised to its present level by long continued alluvial deposits, and detritus, from the hills which encircle it on every side. The tendency of every such deposition is to raise the level of the water, and facilitate its drainage, until it becomes so shallow, that evaporation suffices to complete the process, and render the soil a fit abode for future races of men. The numerous and extensive lakes in the mountainous regions of *Thibet* and *Tartary* are doubtless undergoing a similar change, and no great stretch of imagination is necessary to anticipate the period when they will become the sites of extensive towns and villages, and present a striking contrast to the rugged magnificence and solitary grandeur of the snowy regions which surround them.

"The valley of *Hákong* or *Payendwen*," says Captain HANNAY, "is an extensive plain, bounded on all sides by hills; its extent from east to north-west being at least 50 miles, and varying in breadth from 45 to 15 miles, the broadest part being to the east. The hills bounding the valley to the east are a continuation of the *Shuédoug-gyí* range, which is high, commences at *Mogaung*, and seems to run in a direction of N. 15 E." The principal river of the valley is the *Numtunae* or *Khyendwen*, which flows from the *Shuédoug-gyí* range, and after receiving the contributions of numerous small streams quits the valley at its north-western corner, and again enters the defiles of the hills, beyond which its course is no longer perceptible. On the western side of the valley there are but few villages, and these thinly inhabited, the capital itself containing not more than thirty houses; but the north and eastern sides are said to be very populous, the houses in those quarters being estimated at not less than 3000, nearly all of which are situated on the banks of the *Towang* and *Debee* rivers. All the low hills stretching from the western foot of the *Shuédoug* range were under cultivation, and the population is said to extend across to the banks of the *Irawadí*, in numbers sufficient to enable the Singphos when necessary to assemble a force of nine or ten thousand men.

"With the exception," says Captain HANNAY, "of the village of *Meinkhwon*, which has a Shán population, the whole of the inhabitants of the valley are Singphos and their Assamese slaves. Of the

former, the larger proportion is composed of the Mrip and Tisan tribes, with a few of the Laphaí clan, who are still regarded as strangers by the more ancient colonists, and can hardly be viewed but with hostile feelings, as this tribe have frequently ravaged *Meinkhwon* within the last six years, and were guilty of the still greater atrocity of burning a priest alive in his *kyoung* or monastery.

Formerly, the population was entirely Shán, and previous to the invasion of *Assam* by the Burmese, the town of *Meinkhwon* contained 1500 houses, and was governed by the chief of *Mogaung*. From that period, the exactions of the Burmese officers have led to extensive emigration, and to avoid the oppression to which they were hourly exposed, the Sháns have sought an asylum in the remote glens and valleys on the banks of the *Khyendwen*, and the Singphos among the recesses of the mountains at the eastern extremity of the valley. This state of affairs has led to general anarchy, and feuds are constantly arising between the different tribes, which the quarrel of the Beesa and Dupha Gaums has greatly contributed to exasperate. No circumstance is more likely to check these feuds, and reclaim the scattered population of the valley, than the establishment of a profitable commercial intercourse with the more equitably governed valley of *Assam*, with which communication is now becoming more intimate than at any previous period.

Of the mineral productions of the *Húkong* valley, enumerated by Captain HANNAY, the principal are salt, gold, and amber: the former, he informs us, is procured "both on the north and south sides of the valley, and the waters of the *Namtwonkok* and *Edí* rivers are quite brackish from the numerous salt springs in their beds.—Gold is found in most of the rivers, both in grains and in pieces the size of a large pea. The rivers which produce it in greatest quantity and of the best quality are the *Kapdúp* and the *Namkwún*: the sand of the former is not worked for this mineral, I am told, but large pits are dug on its banks, where the gold is found, as above mentioned. Besides the amber, which is found in the Payen-toung, or amber mine hills, there is another place on the east side of the valley called *Kotah-bhúm*, where it exists in great quantities, but I am informed that the spot is considered sacred by the Singphos, who will not allow the amber to be taken away, although it is of an inferior description." Specimens of coal, were also found by Captain HANNAY in the beds of the *Nambhyú* and *Edí* rivers; and he learnt from the natives that, in the *Numtarong*, a great quantity of fossil wood was procurable.

In its relation to *Assam* and *China*, the trade of the *Húkong* valley naturally attracted a share of Captain HANNAY's attention, and from his account it appears that "the only traffic of any consequence carried on in this valley is with the amber, which the Singphos sell to a few Chinese, Chinese-Sháns, and Chinese Singphos, who find their way here annually. The price of the common or mixed amber is $2\frac{1}{2}$ ticals a vis or four rupees per one and a half seer: but the best kind and what is fit for ornaments, is expensive, varying in price according to its color and transparency*."

"The Chinese sometimes pay in silver for the amber, but they also bring with them warm jackets, carpets, straw hats, copper pots, and opium, which they give in exchange for it. They also barter their merchandize for ivory and gold dust, but only in small quantities. A few individuals from the Burman territories likewise come here, with cloths of their own manufacture, and also a small quantity of British piece goods for sale. But as they are obliged on their way hither to pass through the country of the most uncivilized of the Kakhyen tribes, they seldom venture to come. The greatest part therefore of British and Burman manufactures which are used in this valley, are brought from *Mogaung* by Singpho merchants. But I understand that within the last few years, several of them have gone to *Assam* with gold dust, ivory, and a little silver, for which they receive in return muskets, cloths, spirits, and opium. The following is a list of British piece goods now selling at *Meinkhwon*—common book-muslin used as head dresses, 14 rupees a piece; coarse broad cloth worn as shawls, $2\frac{1}{2}$ yards long, 18 rupees each; good cotton handkerchiefs, 4 rupees a pair; and coarse ones, $2\frac{1}{2}$ rupees a pair. These are the prices of goods bought at *Ava*, but what similar articles from *Assam* may cost, I cannot ascertain. The broad cloth, however, that I have seen from the latter place is of a very superior quality. The merchants who come to this valley from the Burman territories are natives of *Yo*, and the man who is now selling goods here has frequently visited *Calcutta*. The dress worn by the *Singphos* of this valley is similar to that of the Sháns and Burmans of *Mogaung*, but they frequently wear jackets of red camlet, or different velvets which they ornament with buttons, and those who can afford it wear a broad-cloth shawl. The arms in common use amongst them are the *dhú* (or short sword) and spear. The women wear neat jackets of dark coarse cotton cloth, and their *thamines* or petticoats are full and fastened round the waist with a band, being altogether a much more modest dress than that worn by the

* Specimens in matrice are deposited in the Society's Museum.—ED.

Burman women. Those who are married, wear their hair tied on the crown of the head like the men, but the younger ones wear theirs tied close to the back of the neck, and fastened with silver pins—both married and single wear white muslin turbans. The ornaments generally worn by them are amber ear-rings, silver bracelets, and necklaces of beads, a good deal resembling coral, but of a yellowish color, and these are so much prized by them that they sell here for their weight in gold."

During his stay at *Húkong*, Captain HANNAY was visited by many Singphos from the borders of *China*, from whom he learnt that the *Sginmaekha* river rises in the mountains bounding the plain of *Khanti* to the north, and is inclosed on the east by the *Goulang-sigong* mountains, which they consider the boundary between *Burmah* and *China*. This river is, on the same authority, pronounced not to be navigable even for canoes, and the most satisfactory confirmation is afforded of the accounts of Captain WILCOX*. Several smaller streams fall into the *Sginmaekha* from the *Shuédoug-gyí* hills on the west, and the name of *Sitúng* is given to the tract of country through which they flow. In this district gold is very plentiful, and it is found, says Captain HANNAY, "over the whole tract of mountainous country, above the *Sginmaekha*. The Chinese visit this locality for the purpose of procuring the gold, and give in exchange for it, warm clothing, carpets and opium."

Of the several routes by which communication is kept up between the inhabitants of *Húkong* and the countries around, the principal appear to be, one leading across the *Shuédoug-gyí* range to the eastern Singphos; a second, called the *Lye-gnep-bhúm* road, winds round the base of the mountain of that name, and leads in sixteen days to *Múnglang*, the capital of the *Khanti* country, which was visited by Captain WILCOX.

The most important one, however, with reference to trade, lies in a south-east direction from the *Húkong* valley, from which the district of *Kakyo-wainmo* is not more than eight days' march distant. By this route the Chinese frequently travel, and it affords a very satisfactory proof that intercourse may be held direct with *China*, without the necessity of following the circuitous route by *Mogaung*.

* Although Captain WILCOX (As. Res. vol. xvii. p. 463), relying on the accounts given by Singphos of this river, appears to have formed rather an exaggerated estimate of *its size*, his conjectures as to the position of *its sources* are fully verified by the statements made to Captain HANNAY.—R. B. P.

Among the several races of people inhabiting the valleys through which the principal rivers flow, the Khantis or Khumptis hold a very conspicuous rank: they are represented as a fine, brave, and hardy race of men, and are held in great apprehension by the Burmahs, who, about three years ago, attempted to raise revenue amongst them: the force detached on this duty, however, met with such determined resistance, that it was compelled to return, and no subsequent attempt has been made on their independence. They are in constant communication with the Khunúngs, a wild tribe inhabiting the mountains to the north and east, from whom they procure silver and iron. "The former is found in a mine, said to be situated on the northern side of the mountains, to the north-east of *Khanti*." All the information Captain HANNAY could obtain led him to suppose that this mine was worked by people subject to *China*, and from the description given, he thinks they are Lamas, or people of *Thibet*. The part of the Chinese territories north-east of *Khanti* is known at *Húkong* by the name of *Múngfan**, and the Khantis have no communication with it but through the Khunúngs.

From *Meingkhwon*, Captain HANNAY obtained a view of the hill, near which lie the sources of the *Urú* river, one of the principal affluents of the *Ningthí* or *Khyendwen*: it bore south 35° west from *Meingkhwon*, and was about 25 miles distant. It is in the vicinity of this spot that the most celebrated mines of serpentine are situated, and their position is thus described by Captain HANNAY.

"A line drawn from *Mogaung* in a direction of N. 55° W. and another from *Meingkhwon* N. 25° W. will give the position of the serpentine mine district. The Chinese frequently proceed to the mines by water for two days' journey up the *Mogaung* river, to a village called *Kammein*, at which place a small stream called *Engdau-khyoung*, falls into the *Mogaung* river. From thence a road leads along the *Engdau-khyoung* to a lake several miles in circumference called *Engdau-gyí*, and to the north of this lake eight or nine miles distant are the serpentine mines. The tract of country in which the serpentine is found extending 18 or 20 miles." There is, however, another more direct

* In the second volume of DU HALDE'S "China," p. 385, the Père Régis thus describes the tribe by which this tract of country is inhabited, and its geographical site:

"The most powerful among the Tartar Lamas are those called by the Chinese *Moongfan*, who possess a wide territory in *Tibet*, north of *Li Kyang-lú-fú*, between the rivers *Kincha-kyang* and *Vu-lyangho*. This country was ceded to them by USANGHEY (whom the Manchews made king of *Yunan*) to engage them in his interest."—R. B. P.

route from *Kam-mien* which runs in a north-westerly direction. The whole tract of country is hilly, and several hot and salt springs are reported to exist near the *Engdau-gyi* lake, which is said to cover what was once the site of a large Shán town called *Tumansye*. The natives affirm that it was destroyed by an earthquake, and from the description given of a hill in the vicinity, the catastrophe may have been produced by the immediate agency of volcanic action.

On the 21st of March, Captain HANNAY visited the amber mines, and his description is the first that has ever been given of the locality from whence the Burmans obtain this mineral.

"We set out at 8 o'clock," he says, "in the morning, and returned at 2 P. M. To the foot of the hills the direction is about south 25 west, and the distance three miles, the last mile being through a thick grass jungle, after which there is an ascent of one hundred feet, where there is a sort of temple, at which the natives, on visiting the mines, make offerings to the ngats or spirits. About a hundred yards from this place, the marks of pits, where amber had been formerly dug for, are visible, but this side of the hill is now deserted, and we proceeded three miles further on to the place where the people are now employed in digging, and where the amber is most plentiful. The last three miles of our road led through a dense small tree jungle, and the pits and holes were so numerous that it was with difficulty we got on. The whole tract is a succession of small hillocks, the highest of which rise abruptly to the height of fifty feet, and amongst various shrubs which cover these hillocks the tea plant is very plentiful. The soil throughout is a reddish and yellow colored clay, and the earth in those pits, which had been for sometime exposed to the air, had a smell of coal tar; whilst in those which had been recently opened, the soil had a fine aromatic smell. The pits vary from six to fifteen feet in depth, being, generally speaking, three feet square, and the soil is so stiff that it does not require propping up."

"I have no doubt," Captain HANNAY adds, "that my being accompanied by several Burmese officers, caused the people to secrete all the good amber they had found. For although they were at work in ten pits, I did not see a piece of amber worth having. The people employed in digging were a few Singphos from the borders of *China* and of this valley. On making inquiry regarding the cause of the alleged scarcity of amber, I was told that, want of people to dig for it was the principal cause; but I should think the inefficiency of the tools they use was the most plausible reason:—their only implements being a bambú sharpened at one end, and a small wooden shovel."

“The most favorable spots for digging are on such spaces on the sides of the small hillocks as are free from jungle, and I am told that the deeper the pits are dug, the finer the amber; and that that kind which is of a bright pale yellow, is only got at the depth of forty feet under ground.”

A few days subsequent to this examination of the amber mines, Captain HANNAY visited the *Numtunae* or *Khyendwen*, which flows through the valley about five miles north of *Meingkhwon* in this part of its course; and at this season of the year the stream, as might have been anticipated, is small, but in the rains Captain HANNAY estimates that its breadth must be 300 yards from bank to bank, and it is navigable throughout the year for large canoes. An island in the centre of the bed was covered with the skeletons of large fish, which had been destroyed by the poisonous quality of the fallen leaves of overhanging trees:—the natives eat the fish so killed with impunity.

After waiting several days at *Meingkhwon*, in anticipation of the return of some messengers who had been sent into *Assam*, and suffering extreme inconvenience from the difficulty of procuring adequate supplies for the force, the Myo-wún began seriously to think of returning to *Mogaung*. All expectation of prosecuting the journey into *Assam* had been relinquished, and the Dupha Gaum having voluntarily come into the camp, was received by the Burman governor with a civility and distinction, extorted by his apprehension of the numerous Singphos ready to support their redoubtable chieftain, whose influence is said to extend to the frontiers of *China*. On the first of April the ceremony was performed of swearing in the different Tsobuas (tributary chiefs) to keep the peace, which is thus described by Captain HANNAY.

“The ceremony commenced by killing a buffaloe, which was effected with several strokes of a mallet, and the flesh of the animal was cut up to be cooked for the occasion. Each Tsobua then presented his sword and spear to the spirits of the three brother Tsobuas of *Mogaung*, who are supposed to accompany the governor of the above named place, and to inhabit three small huts which are erected on the edge of the camp. Offerings of rice, meat, &c. were made to these *ngats* or spirits, and on this being done, each person concerned in taking the oath received a small portion of rice in his hand; and in a kneeling posture, with his hands clasped above his head, heard the oaths read both in the Shán and Burmese languages. After this, the paper on which the oaths were written was burned to ashes, and mixed with water, when a cup full of the mixture was given to each of the Tsobuas

to drink, who, before doing so, repeated an assurance that they would keep the oath, and the ceremony was concluded by the chiefs all sitting down together and eating out of the same dish." The chieftains to whom this oath of forbearance was administered were the Thogyee of *Meingkhwon*, a Shán—the Dupha Gaum, a *Tesan* Singpho—the Panwah Tsobua, a *Laphae* Singpho—the Sitúngyen Gaum, and Weng-keng-moung, *Mirip* Singphos—and Tare-poung-noung, a *Tesan* Singpho,—all of whom, by this act, virtually acknowledged the supremacy of the Burman authorities, and their own subjection to the kingdom of *Ava*.

The new governor having succeeded by threats and the practice of every art of extortion, in raising as large a sum as it was possible to collect from the inhabitants of the valley and surrounding hills, announced his intention of returning to *Mogaung*; and on the 5th of April no intelligence having been received from *Assam*, Captain HANNAY left *Meingkhwon* on his return to *Ava*, with a very favorable impression of the Singphos he had seen, who appear to possess great capabilities of improvement, and whose worst qualities are represented as the natural result of the oppressive system of government under which they live. One of their chieftains in conversation with Captain HANNAY furnished a clue to the estimation in which they held the paramount authorities around them by the following remark. "The British," he said, "are honourable, and so are the Chinese. Among the Burmans you might possibly find one in a hundred, who, if well paid, would do justice to those under him. The Sháns of *Mogaung*," he added "are the dogs of the Burmans, and the Assamese are worse than either, being the most dangerous back-biting race in existence."

On the 12th of April, Captain HANNAY reached *Mogaung*, and some boats arriving shortly afterwards from the serpentine mines, he availed himself of so favorable an opportunity of acquiring some additional information regarding that interesting locality. He found the boats laden with masses of the stone so large, as to require three men to lift them. The owners of the boats were respectable Chinese Musalmáns, who were extremely civil, and readily answered all the questions put to them by Captain HANNAY, who learnt "that, although the greater number of Chinese come by the route of *Santa* and *Tali*, still they are only the poorer classes who do so: the wealthier people come by *Bamo*, which is both the safest and the best route. The total number of Chinese and Chinese Sháns who have this year visited the mines is 480."

“ I have made every inquiry,” adds Captain HANNAY, “ regarding the duties levied on these people, both on their arrival here and on their purchasing the serpentine, and I am inclined to think that there is not much regularity in the taxes, a great deal depending on the value of the presents made to the head-man. Formerly, the Chinese were not allowed to go to the mines, but I understand the following is now the system carried on in this business.

“ At particular seasons of the year, there are about 1000 men employed in digging for serpentine: they are Burmahs, Sháns, Chinese-Sháns, and Singphos. These people each pay a quarter of a tical a month, for being allowed to dig at the mines, and the produce of their labour is considered their own.

“ The Chinese who come for the serpentine, on their arrival at *Mogaung*, each pay a tax of from $1\frac{1}{2}$ to $2\frac{1}{2}$ ticals of silver, for permission to proceed to the mines, and $1\frac{1}{2}$ ticals a month during their stay there. Another duty is levied on the boats or ponies employed in carrying away the Serpentine, but this tax varies according to circumstances; and on the return of the Chinese to *Mogaung*, the serpentine is appraised and a tax of 10 per cent. taken on its value. The last duty levied is a quarter of a tical from every individual, on his arrival at the village of *Tapo*, and there the Chinese deliver up all the certificates they have had, granting them permission to proceed to the mines.”

On the 9th of April, no intelligence having been received of the messengers sent into *Assam*, Captain HANNAY determined to return to *Ava*, and, embarking on a small boat, he reached *Bamo* in eight days, and arrived at *Ava* on the 1st of May. The time occupied in returning from *Meingkhwon* to *Ava* was only eighteen days, while the journey to that frontier post was not completed in less than forty-six of actual travelling,—a very striking proof of the extreme difficulty of estimating the distance between remote points, by the number of days occupied in passing from one to the other, unless the circumstances under which the journey was made are particularly described. That portion of the route between *Meingkhwon* and *Beesa* in *Assam*, which Captain HANNAY was prevented visiting, will probably in a short time be as well known as the territory he has already so successfully explored, and the researches in which he is now engaged, extending from *Beesa* in *Assam* to *Meingkhwon* in the *Húkong* valley, will complete the examination of a line of country not surpassed in interest by any, which our existing relations with the empire of *Ava* have afforded us an opportunity of visiting. His labours have

filled the void necessarily left in the researches of WILCOX, BURLTON, and BEDFORD, and have greatly contributed to dispel the doubt and uncertainty, which they had not the opportunity of removing. While the officers of the *Bengal* Presidency have been thus successfully engaged in geographical inquiries on the north of *Ava*, the south and western districts have been explored with equal zeal and intelligence by those of the *Madras* Presidency; and the spirit of honorable competition, which has already stimulated the researches of Drs. RICHARDSON and BAYFIELD, and Lieutenant MACLEOD, with such marked advantage, bids fair, in a comparatively short time, to render the whole empire of *Ava* better known than the most sanguine could have ventured to anticipate. Did the results of such journies and investigations tend only to an increase of our geographical knowledge, they would even then be most valuable: but to suppose that the consequences of this intercourse between intelligence and ignorance are so limited, is to take a most inadequate view of the subject: the confidence inspired by the visits and conduct of a single individual*, has already opened a communication between *Yunan* and *Maulmein*, and the caravans of *China* have commenced their annual visits to the British settlements on the coast: the journey of Captain HANNAY will in all probability lead to a similar result between *Assam* and the northern districts of *Yunan*; and the time may not be very distant, when British merchants located at *Bamo*, will, by their superior energy and resources, extend its now restricted trade to surrounding countries, and pave the way for ameliorating the condition and enlightening the ignorance of their numerous inhabitants.

II.—*Facsimiles of Ancient Inscriptions.* By JAS. PRINSEP, Sec. &c.

[Continued from page 223.]

The subject selected for this month's illustration is a slab of dark stone, marked No. 6 in the Society's museum. Nothing is there recorded of its origin; but the character in which it is cut, (as may be seen by the lithographed specimen in Pl. XVII.) is the same as that published in February (Pl. VII.) from a similar stone of a somewhat smaller size; and which publication has led, in rather a singular manner, to the discovery of the source whence both were derived.

Lieut. KITTOE, as I have before mentioned, was lately requested on the part of the Society to re-examine the inscription on the *Khandgiri*

* Dr. RICHARDSON of *Madras*.—R. B. P.

rock, published in STIRLING's memoir on *Cuttack* (As. Res. XV.) In doing this, he came most unexpectedly upon a number of highly curious ancient temples and inscriptions, of which he hastened to make drawings and facsimiles. He found himself impeded and foiled by the bráhmans of the spot, who even went so far as to abstract one of the copies which had cost him the most labour. Upon seeking the cause of so unusual a want of courtesy, the priests told him how their images and relics had been carried off by former antiquaries, and pointed out whence the commemorative slab had been actually cut out from the temples of *Ananda Básu deva* at *Bhubaneswar* by a late *Colonel Sahib*. The dimensions of the slab and the subject of invocation tallied so exactly with the inscription translated by Captain MARSHALL, that Lieut. KITTOE wrote to me on the subject, and on referring to the list of donations at the end of the eleventh volume of *Researches*, I find General STEWART set down as the donor of "two slabs with inscriptions from *Bhubaneswar* in *Orissa*."

There was nothing in the first of the two whence we could guess its locality; the person noted as the founder of the temple being a private individual, named BHATTA SRI' BHAVA-DEVA; but in the slab, now confidently conjectured to be its companion, we have a rája's name and ancestry which ought to afford a better clue.

This king appears in the 15th verse as ANIYANKA BHIMA, the brother of "an excellent man" who had come to the throne through marriage with SURAMA', the daughter of AHIRAMA, whose parentage is nameless, and recorded only as "the ornament of their race."

On referring to STIRLING's catalogue of the princes of *Orissa**, we find this very person, under the name of ANANGA BHIM DEO, ascending the *Gajapati* throne, out of the direct line, in 1174 A. D. He was one of the most illustrious princes of the *Gangavansa* line, the FIROZ of his day, for the number and variety of the public works he erected. "Having unfortunately incurred the guilt of killing a bráhman, motives of superstition prompted him to construct numerous temples as an expiation for his offence;" and probably this of *Bhubaneswara* was one of them. The date of rája ANANGA BHIMA also agrees closely with what was assumed from the style of the alphabet, and the "Samvat 32" of the *Basu-deva* slab. It will hence become a question, whether these figures are, in all cases, to be referred to a *Cuttack* era, or whether the same Deva-Nágari alphabet was in use

* See Useful Tables, page 113; or As. Res. XV. 269.

from *Shekavati** to *Benares*, *Dinajpur*, and *Orissa*, in the 12th century, while each prince had then an era of his own.

The writer, *UDAYANA*, whose poetic style is more than usually florid and inflated, is, I am told by the pandits, an author of a work on logic entitled the *कुसमाञ्जलि kusamāñjali*, which is in much repute in the schools. We have a copy in the Society's library.

I am once more indebted to the Reverend Mr. *YATES* for undertaking the translation of this very lengthy document. It was previously transcribed without difficulty by the Society's pandit. The only letter which was remarked as unusual in form, is the इ of इति, at the end of the fourth line of the lithograph. It bears a strong resemblance to the corresponding letter of the *Amaravatī* and more southern alphabets.

I cannot conclude these preliminary remarks without animadverting upon the ruthless spoliation which is often carried on by soidisant antiquaries, to the direct perversion of the true object of research—the preservation of ancient monuments, and their employment to elucidate the history of the country. The facts told by these two *Bhubaneswara* stones were utterly unintelligible, until accident pointed out whence they had come—and the local history of the temples was or would have been equally lost in another generation. It is to be hoped therefore that the Asiatic Society will hasten to restore them to their former positions. Such an act will contribute tenfold to the true objects of our institution by the confidence it will inspire in the minds of the people who now watch our explorers with jealousy, and withhold valuable information, lest it should only yield to fresh acts of plunder and demolition†.

Transcript in modern Deva-Nāgarī.

नमः शिवाय । विद्युत्पिङ्गलभाललोचनशिखिज्वालागलत्वामृत
स्नातःस्पर्शनजीविताः श्वशिरःश्रेणीः शिवे नृत्यति । एको राजरनेकता-
ङ्गत इति त्रासादिव प्रक्ष्य ताञ्चन्द्रः सान्नजटाटवीसुरसरिदुर्गाश्रितः
पातु वः ॥ १ ॥

* See the *Harsha* inscription, in nearly the same character, Vol. IV. 361.

† Since writing the above, I am happy to perceive that the Society has determined on the immediate restitution of the two slabs through Lieut. *KITTOE*, who has been requested to explain that their removal was the act of an individual, and would never have had their sanction, unless they had been assured that the objects were going to decay, or held in no estimation where they were.

Facsimile of the commencement of Inscription No. 6 in the A.S. Soc. Museum.

ॐ नमः शिवाय ॥ विष्णुमिहं नमः
 नमो नमः शिवाय ॥ नमो नमः शिवाय ॥
 नमो नमः शिवाय ॥ नमो नमः शिवाय ॥
 नमो नमः शिवाय ॥ नमो नमः शिवाय ॥
 नमो नमः शिवाय ॥ नमो नमः शिवाय ॥
 नमो नमः शिवाय ॥ नमो नमः शिवाय ॥

Dimensions, 2 ft. by 4.

J. Princeps Lith.

कोऽयं ललाटतटनेत्रपटस्य गर्वात्खर्वीकरोति जगदित्यभिधाय
शम्भौ । यः साभ्यसूयमकरोच्चरणेऽक्षिलक्ष्मीं जीयात्स गौतममुनि
र्मुनिवृन्दवन्द्यः ॥ २ ॥

तद्गोत्रे राजपुत्रः समजनिजगतीमण्डनः पण्डितानां मान्यः पुण्यैक-
धाम प्रतिबलजलधिदोभमश्याचलश्रीः । श्रीमान् सत्कीर्त्तिवल्लीवलिय-
तवसुधामण्डलश्चण्डरश्मिस्फूर्जत्तेजोभिरुग्रग्लपितरिपुयशःकैरवोद्वार
देवः ॥ ३ ॥

समजनि निजवंशोत्तंसलक्ष्मीरलक्ष्मीकृतनिखिलविरोधिस्फूज्यदम्भोधि
रस्मात् । दलितललितमल्लीकीर्त्तिवल्लीवितानप्रसूतहसितचन्द्रो मूलदेवः
ह्यतोन्नः ॥ ४ ॥

तस्मात् पुण्यैकराशेरभवदहिरमो नाम धाम स्तुतीनामारामः साम
नीतेरपरिमितयशःपूरचन्द्रोदयाद्रिः । यस्योद्यद्दानधर्मेत्सवजनित
महोत्साहकाले त्रिलोकप्रासादाग्ने स्फुरन्ति स्फुरदमलयशोवैजय-
न्त्यो जयन्त्यः ॥ ५ ॥

तस्मान्नैकसुताहूभवतुरपान्नाथादिवेन्दुश्रियौ श्रीसप्रेश्वरनाम नाम
सुरमादेवो च सार्थाङ्गया । एकः क्ष्मातलमण्डनाय सकलाधारस्तथा-
न्याजगत्दारिद्र्यज्वरनाशनाय जगतीचिन्तामणिश्रीरभूत् ॥ ६ ॥

नतटपतिकिरीटकोटिरत्नद्युतिपदपीठश्यालुपादपद्मः । अजनि
रजनिजानिवंशचूडामणिरणिमादिगुणेन चोत्तमः ॥ ७ ॥

यात्रावाजिखुरप्रहारविसरङ्गुलीसमुद्रे स्फुरत्तेजोभास्करमण्डल
क्षितिभुजामस्तङ्गते निर्वर्भरं । यं संग्रामगृहोदरेषु विजयश्रीः सार्द्धं
माशासखीवृन्दैर्भिन्नगजेन्द्रमौक्तिकवती भूयोऽभिसर्त्तुं गता ॥ ८ ॥

रेवालाः कुलवृद्ध किन्नु भवतां दुर्भिक्षमायास्यति स्फीतं किं सतु स-
चदः पलभुजां स्वर्गाय सन्नह्यते । यस्येति श्रुतिमाकलय्य समरे निर्भिन्न
वीरद्विषाम्बल्लुरैः परिपूरयन्ति परितः प्रेताः कुश्रूलोत्करान् ॥ ९ ॥

तस्मिन् पुरन्दरपुरीतिलकायमाने दाने समुन्नतमतिस्तनयस्तदीयः ।

साम्राज्यभारवहनैकधुरीणबाहुः श्रीराजराजन्तपतिः पृथिवीं प्रशास
॥ १० ॥

यस्योद्यदाजिराजीखुरशिखरभरक्षुसभूचक्रसर्पद्रुलीजालावकीर्णं
त्रिदशपुरसरिद्धुरिपङ्के विलम्बं । नीरक्रीडानिमज्जत्सुरपतिकरिणं
व्याकुलाः शक्रभृत्या धृत्वा लाङ्गूलमेकी करतलमपरे तीरसुत्तोल-
यन्ति ॥ ११ ॥

रणभुवि यदि नित्यन्नाहतः शत्रुसार्थस्तुलितहरिभुजेन क्षामुजाऽने
न नूनं । कथमिह कलिकाले कल्पितानल्पपापप्रणयिनि सुरसृष्टिः
खटुरस्यान्दिवि स्यात् ॥ १२ ॥

येनोऽत्र पुरुषोत्तमेन सुरमादेवी रमैवार्थतो नाम्नाऽन्तःपुरसुन्दरी
जनशिरोरत्नाङ्कुरश्रोरियं । प्रत्यारुह्य तुलाः प्रियेण सहसा यत्त्वर्षं
शैलान्ददावेतैः स्फीततराधरार्थिभिरहो जातार्थिनी केवलं ॥ १३ ॥

सर्व्वं नरेन्द्रतिलकः कलिकालकल्पशाखासुखौघमनुभूय चिरं
स राजा । वृद्धोऽनुजं मनुराजनतांघ्रियुग्मं राज्येऽभिषिक्तमकरो-
दनियङ्गभीमं ॥ १४ ॥

स श्रीमाननियङ्गभीमन्तपतिः साम्राज्यलक्ष्मीपतिः प्रत्यर्थिर्क्षिति-
पालमौलितिलकस्त्यक्तारिकान्तालकः । सम्प्राप्यैव समुद्रमुद्रितमहीचक्रं
कराग्रस्फुरच्चक्रं शक्रपराक्रमः समकरोद्बाहुं नृचन्द्रः क्षणात् ॥ १५ ॥

हे भोगीन्द्र किमात्य कुर्म धरणीभारः स तुच्छो महान् जानासि
त्रिकलिङ्गनाथयशसा ख्यातं न जाने शृणु । देवेऽस्मिन् विजयप्रयाण
रसिके प्रेङ्खत्तुरङ्गक्षुरक्षोभाद्भूतरजेभिरम्बरमगादङ्गं क्षमामण्डलं
॥ १६ ॥

जाता सङ्गरनीरधेः स्फुरदसिन्धालेन्द्रभास्वरुजा मथ्याद्रेरसती-
व वाञ्छितवज्रप्रीतिः सदा श्रीरियं । अस्मिन्नेव नराधिनाथतिलक
स्यैर्यं गता यत् पुनर्वीजं तत्र किलास्य शाश्वतमसौ जाग्रद्यशश्चन्द्रमाः
॥ १७ ॥

उद्यद्दिविजयार्थसाधनविधौ गङ्गान्वयक्ष्माभुजान्दिव्यास्तं चतुरङ्ग-
तोऽधिकतरः सैन्यात्स एकोऽभवत् । श्रीस्त्रिपेश्वरदेव एव विलसत्शस्त्र
क्षतारिचरकीजालोघविनिर्मिताद्यममहामोधिर्नयाम्भोनिधिः ॥ १८ ॥

लक्ष्मोदेव्याः पतिरयमधोऽनेन चक्रे वलिद्विट् गोपालस्य प्रियसुहृदयं
सर्वकार्येऽच्युतोऽसौ । विश्वक्सेनो धरणिस्थिरियमयुद्धता येन मग्ना
अस्मिन् जन्मन्यपि सुचरितैरेव विश्वम्भरोऽभूत् ॥ १९ ॥

यद्दानविगलदारिमाटका भूतमाटकाः सस्यसम्पत्तिसम्भारैर्दीन
हीनाऽभवन्मही ॥ २० ॥

कैलासाद्रिहिमाचलस्तनतटव्यासङ्गिमन्दाकिनीहारश्रीर्यदिकीर्तिरस्य
तिलकं चन्द्रं कजङ्गाशयात् ॥ ज्योत्स्नाहासमुखीपयोधिरसना कुन्दद्युतिं
नात्यजत् कायं स्यादिह चन्द्रशेखरपदारुणो मृङ्गानीपतिः ॥ २१ ॥

भक्तिप्रहसुरासुरेन्द्रविलसन्मौलिस्त्रिरत्नावलीच्छायाशक्रधनुःस्फुरत्य
दलसत् मेघेश्वरसामुना । उन्नत्याऽपरपर्वतो बज्रतरद्रव्यव्ययं कुर्वता
प्रासादो रचितः सुधाच्छविहसत्कैलासशैलेश्वरः ॥ २२ ॥

खर्खाद्रिः ससुरालयो हरिखुरदुसुखं पूर्वा गिरिर्वारुण्या परिचुम्बि
तोऽस्तशिखरो मान्यः स गौरीगुरुः । इत्यद्यापि परामृषन्नवनवस्थानं
चलन्मन्दिरो लङ्केन्द्रेण शिलोच्चयं गृह्णमदः प्राप्तोऽनवद्यं शिवः ॥ २३ ॥

इह विजयिना प्राकारश्रीर्महोपलनिर्मिता जलधरगतीरत्युन्नत्या
निरोद्धुमिवोद्धता । कलिजलनिधेर्मर्त्यादालीभयादिव तस्य वै शरणम
विशद्दर्भा यत्र त्रिनेत्रसुरक्षया ॥ २४ ॥

यासां नेत्राच्चलतरलिमा विश्ववश्यैकमन्तः पादन्यासस्त्रिभुवनगतस्त्रि
म्भनं संविधते । नृत्यारम्भे वलयमणिभिर्निर्मिताऽयत्नदीपास्तस्मै दत्ता
स्त्रिपुरजयिने तेन तास्ता मृगाव्यः ॥ २५ ॥

उपवनमथ चक्रे तेन मेघेश्वरस्य स्फुरितकुसुमरेणुश्रेणिचन्द्रातपश्चि ।
अविरतमकरन्दस्यन्दसन्दोहवर्षधृततरतिपतिलीलायन्तधारागृहत्वं ॥ २६ ॥

वनश्रीमुक्ताखकृदरदलितपुष्पोत्करमितत्परागैर्मङ्गालीकलितसितिमा

यत्र जयनी । मुनेः पुष्पास्त्रस्य स्फटिकपुटिताक्षवलिख्यं वसन्तोद्यन्मत्त
द्विपशिरसि नक्षत्रविततिः ॥ २७ ॥

अत्यच्छं शरदम्बरात्सुरसरितोयाच्च पापापहं गम्भीरन्नयशालिनोपि
हृदयात् शीतञ्च चन्द्रद्युतेः । हृद्यस्वादु सुधारसादपि सरो वारान्निधेः
सोदरन्तेनाखानि नरेश्वरप्रणयिना मेघेश्वरस्यालये ॥ २८ ॥

आनन्दैकनिकेतनं नयनयोः शश्वन्मनःकैरवज्योत्स्नौघः खलु विश्व
कर्मनिपुणव्यापारवैदग्ध्यभूः । ग्रीष्मग्रासभयातिभातजनतासौन्दर्यं
दुर्गालयो मार्गः कीर्त्तिविष्टम्भणस्य जयिना प्रोत्तम्भितो मण्डपः ॥ २९ ॥

अपां शालामालाः पथि पथि तङ्गागाः प्रतिपुरं प्रदीपाः सम्पूर्णां
प्रतिसुरगृहं यस्य विमलाः । मठा वेदादीनां द्विजपुरावहाराः प्रति
दिशं विराजन्ते सत्राण्यपि च परितः सेतुनिवहाः ॥ ३० ॥

आराद्ब्रह्मपुरं बृहस्पतिपुरस्पर्द्धिं स्मरारेः सदाचार्यं विष्णुमभि
स्फुरद्विजवरग्रामाय धर्मात्मने । दत्तं तेन मुदा सदादितमखप्रारब्ध
धूमध्वजस्फूर्जद्भूमचयेन यत्र स कलित्थालः समुत्सायते ॥ ३१ ॥

तं प्रत्यतिष्ठद्विजराजपूज्यः प्रासादमीशस्य सनन्दकश्रीः । सुदर्शने
नान्वित एष विष्णुराचार्यराजः सपृथक् न विष्णोः ॥ ३२ ॥

उदयनकविस्तस्यादेशात्प्रशस्तिविलासिनीं सुललितपदन्यासैः शश्वदि
दग्धमनोहरां । ध्वनिभिरनिशं कण्ठे श्लिष्टामलङ्कृतिहारिणीमतिर-
सतया श्रुत्यायातां प्रसाधितवानिमां ॥ ३३ ॥

यावत् ज्योत्स्नासुधांश्च धरणिफणिपतो यावदम्भोजलक्ष्म्यौ याव
द्यावच्च गङ्गाहिमधरणिधरौ यावदेवार्णवोर्मिः । वागर्थौ यावदस्त्रिंश्वर
मनुवसतोऽद्वैतरूपेण लोके तावत् प्रासादकीर्त्ती त्रिभुवनकुहरे राज-
तामस्य नित्यं ॥ ३४ ॥

। श्री । दिशि धवलधीरतनयः स चन्द्रधवलः प्रशस्तिमिह पट्टे ।
सरत्नाक्षरमालाभिर्लिख मेघेश्वरद्वारे ॥ ३५ ॥

सूत्रधारः शिवकरः सदृत्तामक्षरावलीं । निचखान शिलापट्टे मुक्ता
फलनिभामिह ॥ ३६ ॥

Translation by the Rev. WM. YATES.

1. Salutation to SHIVA. The row of skulls (on KA'LI') are dancing over SHIVA*, being made alive by the stream of nectar flowing from the bright flame of the eye in his shining forehead. Seeing this, the moon thinking one Ráhu had become many, took refuge in the fortress of *Gangá* amidst the wood of SHIVA's thick hair: may that moon preserve you.

2. "Who is this that from the pride of the eye in his forehead subdues all the world?" May that GAUTAMA, the chief of sages, who in thus addressing SHIVA with detraction, transferred the brightness of his eye into his own foot, live for ever.

3. The prince of his family was the ornament of the world which is the birth-place of all, revered by the learned, the seat of virtue, and glorious as the mountain that churned the mighty ocean. He was glorious: the whole earth was overspread with the creeper of his fame, and he was the eradicator of the white lily of his enemies' glory, which was withered by his powerful rays.

4. He was the ornament of all his race; by him the boisterous host of all opposers was defeated. Hence he outshone the moon, and laid the beautiful spreading creeper of his jasmine-like fame prostrate in the dust. He was the first and chief of all.

5. From this source of virtue sprung AHIRAMA, worthy of praise, the possessor of ethical skill, who by his unbounded glory was like the mountain on which the full moon rises. When he exerted himself in the virtue of liberality, the triumphant banners of his pure and shining honor were resplendent before the palaces of the three worlds.

6. From AHIRAMA were born two individuals, a son and a daughter, like the moon and LAKSHMI' from the sea, and they were fitly named SWAPNESWARA and SURAMA'. The one, as an ornament of the world, was the possessor of all virtues; and the other, as the destroyer of the disease poverty, was like the goddess of wealth.

7. He became the glory of his race, and, like SHIVA, distinguished by endless good qualities. His lotus-like feet rested on a footstool enlightened by gems in the crowns of prostrate kings.

8. When the disk of the glorious sun was shining on the sea of dust excited by the hoofs of his galloping steeds, and setting to opposing kings, then fortune accompanied with companions from all sides, and adorned with the pearls of elephants slain, met him in the midst of the field of battle according to appointment.

9. "Ho! ye young and aged, shall famine ever come to you? am I prepared to offer sacrifice only for the gratification of the eaters of flesh?" Hearing these his words, the evil spirits around filled all their granaries with the flesh of enemies slain in battle.

* SHIVA is here supposed to be prostrate and KA'LI' standing on his breast. He has three eyes, one in his forehead with the crescent of the moon.

10. From him who resembled INDRA, was born a generous son possessed of an arm strong enough to sustain the weight of universal government. This glorious monarch, SRI' RAJARAJA, then governed the world.

11. The servants of INDRA were all confused, one laying hold on the tail and another on the proboscis, were dragging on shore his elephant, which, while sporting in the water, had fallen into the mud that had been collected in the heavenly river from the abundant dust raised by the hoofs of the spirited steeds of this king.

12. If so many enemies had not indeed been constantly killed in battle by this king having an arm like VISHNU, then, in this iron age, in which wickedness so much abounds, how could BRAHMA' have formed so many gods*?

13. SURAMA', which is another word for the goddess RAMA' or LAKSHMI, and who was also called ANTAHPURA-SUNDARI', was the glory of all jewels. She, assimilating quickly with the excellent man whom she married, gave away mountains of gold, and became renowned, and the sole envy of kings.

14. This distinguished king, after enjoying for a long period all the pleasures of the Kalí-yuga or iron age, and becoming old, anointed to the kingly office, his younger brother ANIYANKA-BHÍMA, at whose feet other kings bowed.

15. This ANIYANKA-BHÍMA was a renowned monarch, a famous emperor, the supreme ruler over opposing kings, who yet did not seize upon their wives. This moon of men, with strength like INDRA's, having obtained the sea-girt circle of the earth, soon made it like the circular discus held in his hand.

16. Oh, ANANTA†, what say you? The great weight sustained by the tortoise you know is insignificant, but the weight sustained by the glory of the king of the three Kalingas I know not. Hear this! When this king delights to go forth to victory, half the earth rises to heaven in the form of dust excited by the strokes of the hoofs of his fleet steeds.

17. Fortune herself springing from the sea of contest, holding in her hand a sword bright as the king of serpents, and desiring the love of many, like the faithless woman produced by the mountain Mandara, remains constantly with this renowned king: the proof of which is furnished in this, that the moon of his fame is still always shining‡.

18. Like the famous SWAPNESWARA, he went forth to complete the conquest of the world, and was himself *alone* greater than the *complete* armies of the kings descended from GANGA' with all their bright weapons.

* It is supposed that those who die in battle are saved: in these words, the doctrine of Apotheosis, as believed by the Greeks and Romans, is distinctly avowed.

† *Ananta* is the serpent on whose head the earth is supposed to rest: he supports the tortoise that bears the earth.

‡ The moon and *Lakshmi* or fortune are supposed to have been produced by the gods at the churning of the ocean, and to have a common origin and end.

He was the divine treasury of justice, and formed a new ocean by the blood flowing from the foes slain by his bright arms.

19. He was the lord of *Lakshmi**; the opposer of *Bah*; the beloved friend of the herdsmen; the never-failing one in all his undertakings; the *Vishwakshena* by whom the deluged world was raised; and the real *Vishvambhara* by his virtuous deeds in life.

20. The earth, the mother of all creatures, was nourished by the streams of his benevolence, and enriched with abundance of corn and wealth.

21. If his fame is bright as the necklace-like river *Mandakini*, where united with the breast of the *Kailasa* and *Himalaya* mountains, then where is SHIVA, ascending to the top of the *Chandra-shikhara* mountain, if he does not remove the stains from that moon, whose smiling face is bright with light as the white jasmine or froth of the ocean?

22. This other great mountain *Kailasa*, abounding with pure nectar, was made a palace by SHIVA's expending the wealth of this INDRA-like king, whose feet were rendered glorious by the rainbow, or reflection of the rays from the gems on the heads of the obedient Surs and Asurs.

23. *Sumeru*, with the residence of the gods, was injured by the hoofs of this king's horses, also the eastern mountains, and the western peaks were touched by *Varan†*: so the venerable SHIVA, seeking after fresh places, and having no settled temple, at last gained, with the king of *Lanka*, this unparalleled mountainous habitation.

24. By this victorious one inclosures were formed so high as to obstruct by their elevation the movements of the clouds. And here virtue by SHIVA's interposition, for fear of the aggression of the sea of wickedness, took refuge.

25. The women, the glance of whose eyes was all-subduing as a *mantra*, and the motion of whose feet made the three worlds motionless; and whose lamp or light was formed by their bracelets and jewels when they began to dance—these deer-eyed ones were given by this king to SHIVA.

26. By him a garden was made like INDRA's, shining bright with the farina from the full-blown flowers, and constantly watered by the distillation of the juice of flowers, as by the sportive engine of KA'MADEVA‡.

27. The star-like marks on the heads of the elephants that are furious in the spring, are nothing more than the dice spots of the sly KA'MADEVA set in crystal. There the white is made triumphant by the humming bees covered with farina from the scattered flowers, which are the pearls of the necklace of the wood.

* This and the following are metaphors: the meaning is, that he was like the persons mentioned.

† *Varan* means the western horizon, and also spirituous liquor, by the touch of which a person or thing is defiled.

‡ Cupid.

28. By this kind king an immense pond was cut near his INDRA-like palace. It was in size like the sea ; its water was clearer than the autumnal sky, more purifying than the waters of the *Ganges*, more deep than the heart of the profound casuist, more cold than the rays of the moon, and more delicious to the taste than nectar.

29. By this victorious one an open temple was built, and it was the delight of the eyes ; the moon-light of the white lily, the mind ; the splendid workshop of the celestial artist VISHWAKARMA, the beautiful fort of those afraid of being seized by heat, and the way of him who covets fame.

30. Houses with water were on every road, tanks in every city, lamps full and splendid in every temple, sheds for reading the Vedas, &c, in every direction, the ornaments of the bráhmán cities. Sacrifices too and bridges were conspicuous in all directions.

31. By him was given with pleasure to the preserving bráhmans, for residence, a city of BRAHMA', one nearly equal of VRISHASPATI, and one of SHIVA, and one of the venerable VISHNU. There the serpent wickedness was withered by the crackling smoke, the sign of sacrifices commenced.

32. The famous SANANDAKA, the most venerable of bráhmans, remained near this palace. This chief of teachers was in appearance like VISHNU, and differed nothing from him.

33. The poet UDAYANA, by the king's command, wrote this (eulogy) which resembles a fine woman, always charming in the motions of her handsome feet, with harmonious sounds in her throat, adorned with ornaments, and coming with pleasure to my resting place.

34. As long as the moon and its rays, the earth and its supporter, the lotus and *Lakshmi*, *Gangá*, and the supporter of *Himálaya*, the sea and its waves, words and their meaning, abide together in the world, so long the palace and fame of this king will ever shine through the three worlds.

35. SACHANDRA-DHABALA, the son of DHAVALA-DHIVA, wrote this excellent inscription on a slab in jewel-like letters over the door of this INDRA-like king.

36. The best artist engraved these well arranged words, which resemble pearls, on a stone-slab.

III.—*Specimens of Hindu Coins descended from the Parthian type, and of the Ancient Coins of Ceylon.* By JAMES PRINSEP, Sec. As. Soc.

Among the coins extracted from the *Manikyala* tope were two that excited more than ordinary curiosity from their having marginal inscriptions in Sanscrit characters around a device in all other respects of the Sassanian type. The inscription (which will be found in Plate XXI. of vol. III. also p. 439) baffled all attempts to decypher it. The repetition of the word *Srî* left little doubt of its language being

Indo - Sassanian Coins



Indo - Sassanian Coins.



Sanscrit, but neither with the aid of modern nor ancient alphabets could the sentence be made out. The individual letters seemed to be

श्रीह्रितिविरधेरभवदरपविर श्रीयह्रितिणचदवजारि :

Shortly afterwards, among the coins procured for me by KERA'MAT ALI, another instance of the mixture of legends was discovered (Vol. III. Pl. XXV. p. 439) ; and here the name was clearly श्रीवसुदेव *Srī Vasudeva*, either denoting the god KRISHNA, or the Indian monarch of that name alluded to in the Persian histories. Mr. MASSON's last memoir containing one or two coins of the same class, led to a fresh scrutiny of our respective cabinets, whence with Capt. CUNNINGHAM's aid I have now assembled a tolerable group of Indo-Sassanian specimens, for inspection at least, though it will be difficult to say much about them.

The distinctive characters of the Sassanian or Parthian coins are, the fire-altar reverse, the peculiar head-dress of the king with flowing fillets,—sometimes the latter attached to the shoulders,—and a legend in the Pehlevi character. There is, however, as Mr. MASSON has pointed out in a memoir published in this Journal*, a marked difference between our coins, (called by Ton “ of a Parthian dynasty unknown to history,”) and the genuine series of *Persia* proper.

Sassanian coins, of the type common to *Persia*, are never found at *Beghram*, according to MASSON, although they are brought for sale in abundance to the bazar of *Cábul*. Two exceptions, however, are noted,—one, an extensive series of small copper coins having a crowned head on the obverse, with a name in the same character as that on fig. 3, greatly resembling the corrupted Greek of the deteriorated *Nanorao* group—the commonest inscription can be exactly represented by the English type **posopo**. One of this group, supposed by Mr. MASSON to bear the *Bamián* name, was depicted in his note on the antiquities of that place in Vol. V. On the reverse of all these is the fire-altar without supporters, “ demonstrating, at least,” as Mr. MASSON writes, “ that they were adorers of *Mithra* ; while from the numbers in which these coins occur at *Beghram*, it may be further inferred that they were current there, and that the sovereigns they commemorate ruled there: although the difficulty then presents itself to determine at what period to introduce their sway, with the mass of Greek and Indo-Scythic coins before us. The coins themselves, however numerous, may be reduced into three series with reference to the nature of the head-dress. The first class bearing a helmet, the second a crown with a ball above it, and the third a

* Note on the *Bámian* antiquities, vol. V. p. 711.

tripartite crown surmounted by an arch of jewels." All these head-dresses, it must be remarked, are met with in the regular Sassanians of Persia, and it may therefore be possible that they were but a provincial coinage of the same dynasty. It was under this impression that I omitted to engrave the figures of these coins, reserving them for a Sassanian series,—although some of them would have served remarkably well as the precursors or prototypes of the copper coins about to be described in Plate XV.

The second exception noted by our countryman at *Cábul* is the Indo-Sassanian group, figs. 3, 5 and 6, of Plate XIV. "The strongly marked Indian features of the busts, and their plentiful occurrence at *Beghrām*, especially of their copper money, prove these princes to have ruled here. The heads are remarkable for the bulls' (or buffaloes') skulls around them,—some having four or five of these ornaments, but in general one only surmounts the cap. The legend is in a peculiar and unknown type. The reverse is distinguished by the wheel over the heads of the altar defenders." A great many of the type No. 5 were extracted from the principal tope of *Hiddah* near *Jelalábád*. (See Vol. V. p. 28.)

MR. MASSON (J. A. S. Vol. V. 711) refers them to the *Kiánín* dynasty of Persian historians, to whom he would also attribute the *Bamián* antiquities. He cannot of course here allude to the early branch, which includes CYRUS, CAMBYSES and DARIUS HYSTAPES, for it is verve vident that the coins before us cannot equal, much less surpass, in antiquity the celebrated *daric archers* of Spartan notoriety. He must rather speak of their far descendants, to whom the present independent chiefs of *Seistán* still proudly trace their origin. This race under the name of *Tajik* claims proprietary right to the soil, though encroached upon by the Afgháns on all sides, and at *Bamián* they are found inhabiting the very caves and temples constructed by their infidel progenitors.

As to the probable date of these coins then, little more can be conjectured than that they were contemporaneous with the Sassanian dynasty in *Persia*, viz. between the third and sixth centuries. Their frequent discovery in the *Panjáb* topes, accompanied with the Indo-Scythics having Greek legends, should give them a claim to the earlier period; but as far as the fire-worship is concerned, we learn from PRICE'S Muhammadan history, that "as late as the reign of MASAU'D, son of Sultán MAHMU'D of *Ghizni* (A. D. 1034), a race, supposed to be the remnant of the ancient Persian stock, submitted to his arms," who had doubtless maintained their national faith to that time unchanged.

The intimate relation between the worshippers of MITHRA and the followers of the *Vedas*, is established by the affinity of the language in which the books of ZOROASTER are recorded, with the Sanskrit. The learned restorer of this ancient text indeed cites some reasons for giving priority to the Zend as a language, and he finds many occasions of interpreting the verbal obscurities of the *Vedas* from analogies in the latter. I cannot refrain in this place from noticing, in allusion to Mr. MASSON's location of the *Kaianians*, a passage in M. BURNOUF's most elaborate *Commentaire sur le Yûçna*, just received from Paris, bearing upon this point, and leading to the unexpected conclusion that the Kaianians of Persia and the *Suryavansas* of India, are the same, or have a common origin. The word *kai* preferred to so many names (as Kaiumars, Kaikobad, Kaikaous, Kaikhosru, &c.) having the same signification as the Sanskrit *kavi*, कवि, "the Sun." Against such a hypothesis, however, M. BURNOUF confesses that the *Gujeratî* translator of the *Yûçna*, NERIO-SINGHA, renders the word كاي *kai*, simply by the Sanscrit equivalent for "king." I give the passage at length, as of first importance in a discussion on a mixed Indo-Sassanian coinage.

"Je n'ai pu, jusqu'à présent, déterminer si les Kaïaniens ou les rois dont le nom est précédé de *ké* (en Zend *kavi*) sont les rois *soleil* ou des rois *descendant du soleil*; en d'autres termes, si le titre de *soleil* a été joint au nom de chacun de ces rois, uniquement pour indiquer la splendeur de leur puissance, ou bien si le chef de cette dynastie a passé pour descendre du soleil, et s'il a laissé ce titre à ses successeurs, comme cela a eu lieu dans l'Inde pour les *Suryavança*. Je ne veux pas ajouter une hypothèse étymologique aux traditions fabuleuses dont les Parses ont mêlé l'histoire de ces rois; mais il serait intéressant de retrouver la forme Zende du nom du premier des Kaïaniens, de *Kobâd* قباد, nom dans lequel on découvrirait peut-être le mot *kavi* (nom. *kavâ* et *kava*), soleil. Si *Kobâd* pouvait signifier "le soleil" ou "fils du soleil," la question que nous posions tout à l'heure serait résolue, et les autres Kaïaniens n'auraient reçu le titre de *kavi* (*ké*) que parce que la tradition les regardait comme issus d'un fils du soleil. Je remarquerai encore, sans attacher toutefois beaucoup d'importance à ce rapprochement, qu'on trouve dans l'histoire heroïque de l'Inde plusieurs rois du nom de *kavi*, et notamment un fils de PRIYAVRATA, roi d'*Antarvêdi*. HAMILTON dans l'index de ses *Genealogies of the Hindus* cité quatre personnages de ce nom, sans parler de deux autres rois, dans le nom desquels figure ce même titre de *kavi**. Enfin M. ROSEN a cité un

* *Gen. Hindus*, page 77, on trouve dans le Rik et dans le Yadjourvéda, un roi nommé *Cavasha*, (COLEBROOKE, *As. Res.* VIII. 399;) et ce qui peut faire penser

vers extrait d'un hymne du Rigvéda, dans lequel les mots *viçdm kavim*, voisins du composé *viçpatim*, doivent peut-être se traduire plutôt par *hominum regem* que par *agricolarum vatem*."—[*Commentaire sur le Yaçna, chapitre I. p. 455.*]

I now proceed to particularize the coins inserted in my plate.

Indo-Sassanian Coins, Plate XIV.

Fig. 1, a silver coin in my cabinet of an unique type :—*Obverse* the prince on horse-back, head disproportionate in dimensions. On the horse's neck is a flower vase*, which is probably supported by the man's left arm; on the margin are some indistinct Pehlevi characters and on the field a monogram, resembling the Nágari letter ञ. The device on the *reverse* is nearly obliterated.

Fig. 2, a copper coin, also unique : it escaped my detection among a number of old *Bokhara* Musalmán coins, or it should have appeared along with the *bull* and *horseman* or Rájpút series of December, 1835. It seems to link this curious outline group with the full-faced Sassanians of *VASUDEVA*, &c. ; for on the border of the obverse are Pehlevi letters. The features of the supposed face are barely admissible as such even on the lowest estimate of native art. The horse on the *reverse* is more palpable, but it seems more like a *toghreh* or flourish of Persian letters, than ever. It is also reversed in position, and has no Nágari legend.

The coins of this genus, although we have found them connected with *Delhi* sovereigns and *Malwa* rájas at one end of the series, evidently reach at the other to the bráhmanical rulers of the *Panjáb*, and probably *Cábul*. They are procured much more abundantly at the latter place (and on the site of *Taxila* according to M. COURT) than in any part of India. Some of them exhibit on their reverse the style of Arabic now known to belong to the *Ghaznavi* Sultáns, while others agree rather with the *Ghori* type, and contain known names of that dynasty.

Fig. 3, a silver coin in my cabinet, K. A. Several of the same nature are depicted by *MASSON* as noticed above. The execution is very bold and the preservation equally good. A double blow has, however, confused the impression on the reverse.

The head-dress or helmet is surmounted by the head of a buffalo, in imitation perhaps of *MENANDER*'s elephant trophy. The two wings common on the Sassanian cap are still preserved. The

a quelque monarque *Bactrien*, c'est que ce *Kavacha* est père de *Tura*, dont le nom rappelle le *Touran*. Mais je ne crois pas, pour cela, que *Kavacha* puisse être identifié avec le mot *Zend* et *Sanscrit kavi*.

* Perhaps the *Kámacumbha* or vase of abundance, of *Tod. Ann. Raj. I. 603*.

prince wears a profusion of pearls and handsome earrings. In front of his face is a legend in an unknown character, which can, however, be almost exactly represented by Nágari numerals, thus : ३ १४ ० ३ ० २. None of the pure Pehlevi is to be seen on either face, but on the shoulder in the corner is something like a Nágari म, which is probably an *m*, not a *bh*. The fire-altar of the reverse is remarkable from the two wheels or *chakras* over the officiating priests. We shall see more of these again as we descend.

Fig. 4. is a silver coin in Dr. SWINEY's possession : it is of inferior workmanship, the features *beginning* to be cut in outline. A diminutive figure (female) in front of the face holds a flower or cornucopia :—just above can be discerned two small Sanskrit letters प्रति *prati* or *pratá* . . . which suffice to ally the coin with our present group.

The two succeeding figures are from MASSON's drawings, some of which have already appeared in lithography. *Fig. 5* represents rather a numerous class of the same type as *fig. 3*. The letter of the legend is sometimes omitted, and the ∞ becomes a ∞ ; but without examining the coins themselves, it would be unsafe to argue on such differences. *No. 4* represents a variation of the monogram, it may be an old form of म

Fig. 6, is an interesting coin, similar to my *Vasudeva*, and the *Manikyala* coins in some respects, but hardly so far advanced towards Hinduism, inasmuch as the fire-altar is retained, and the full marginal legend on both sides is in the unknown character, while the Nágari occupies only a secondary place on the field. This name, too, is, as it stands in MASSON's drawing, wholly uncertain, with exception of the initial *Srí Va* . . . It may be श्रीवहरवह्म . ल.

We now arrive at a class of coins of considerable interest as well to the history of India, as to the science of numismatics ; for the gradual manner in which the nature of their device has been developed is as much a matter of curiosity, as the unexpected conclusion to which they lead respecting the immediate prevalence of the same Sassanian (or ignicolist) rule in Upper India, while the foregoing coins only prove the mixture of Hinduism with the religion of Bactria.

Colonel TOD has repeated an observation of Dr. CLARKE, the traveller, that "by a proper attention to the vestiges of ancient superstition, we are sometimes enabled to refer a whole people to their original ancestors, with as much, if not more certainty, than by observations made upon their language, because the superstition is engrafted upon the stock, but the language is liable to change." In some respects the converse of this proposition would be better

suited to the circumstances of India, where we have long had irrefragable proof of the alternate predominance of the Buddhist and Bráhmanical faith among people using the same language ; and now we are obtaining equally strong testimony of the engrafting of the fire-worship upon the same local stock. The extensive spread of this worship in the north-west is supported by the traditionary origin of the *Agnicula* or fire-worshipping races, whence were derived some of the principal families of the Rájputs.—Indeed, some have imagined the whole of the *Surya-vansís*, or sun-descended, to have been of Mithraic origin, and the *Indu-vansís* to have been essentially Buddhists*. Numismatology will gradually throw light upon all these speculations, but at present all we can attempt to elucidate is the important fact of another large series of Hindu coins, (namely, that bearing the legend श्री मदादिवराह *Srímada dí varáha*,) having directly emanated from a Sassanian source. I say another, because the *Saurashtra* coins, and the *Chauka-dúkas* their descendants, have been already proved to possess the Sassanian fire-altar for their reverse. The sects of the *Surya-panthis*, and the *Mors* who are known as fire-worshippers at *Benares*, have not perhaps received the attention they merit from the antiquarian ;—but even now the solar worship has a predominance in the Hindu pantheon of most of the *Márwár* principalities. Colonel Tod thus describes the observances sacred to this luminary at *Udayapur* (the city of the rising sun) :—“ The sun has here universal precedence ; his portal (*Surya-pol*) is the chief entrance to the city ; his name gives dignity to the chief apartment or hall (*Surya-mahal*) of the palace ; and from the balcony of the sun (*Surya-gokra*) the descendant of RÁMA shews himself in the dark monsoon as the sun’s representative. A huge painted sun of gypsum in high relief with gilded rays, adorns the hall of audience, and in front of it is the throne. As already mentioned, the sacred standard bears his image, as does that Scythic part of the regalia called the *changí*, a disc of black felt or ostrich feathers, with a plate of gold to represent the sun in its centre, borne upon a pole. The royal parasol is termed *kirnia*, in allusion to its shape like a ray (*carña†*) of the orb.” Many other quotations from the same author might be adduced in proof of the strong Mithraic tinge of Hinduism in modern *Rájputána* : and, in fact, the Muhammadan historians tell us that the fire-worship in *Gujerat* was only finally uprooted in the time of ALA-U’DIN’S incursions into the *Dekhan*.

* Annals of Rájasthán, I. 63. See also preceding remarks.

† Can this have any connection with the title *korano* of our coins ?

Fifteen years ago Colonel CAULFIELD sent me two coins dug up at *Kota*, where he was then Resident, which were engraved in Pl. III. of the Asiatic Researches, XVII. as fig. 65. It seemed then perfectly hopeless to attempt a guess at their nature—but now we can pronounce precisely the meaning of every rude mark they contain—the fire-altar and its attendant priests, and the bust of the prince on the obverse. Colonel STACY's collection has furnished the chief links of this investigation, but it is to Captain CUNNINGHAM's examination of it and careful analysis of the numerous small silver *Varáhas* of our several cabinets that we are indebted for the knowledge of the balusters, parallelograms and dots being all resolvable into the same fire-altar and its attendants. Indeed so long ago as January 1836, he wrote me from Benares his conjectures that this series was descended from the Parthian coins.

From the selection he had assorted to trace out and illustrate this curious fact, I have been obliged to restrict myself to such as my plate would contain; giving the preference to those that exhibit well defined letters on some part of the field.

Fig. 7, silver. Col. STACY. Obverse, the Sassanian head in its degenerated state, or cut in outline: the hair is represented by a mere ball, the ear by a curve, &c.; the two stiffened muslin lappets rise from each shoulder as in figs. 3 and 5, and would be utterly unintelligible but for the light thus afforded. Above the head is the Sanskrit श्री (resembling the *Gaur* or *Bengálí* form) and in front of the mouth the letter रु which is most probably a भ or *bh*. On the *reverse* of this coin the fire-altar is very discernible, and it is instructive to study the configuration of the two supporters, the flame, and the altar itself, so as to be able to follow out the subsequent barbarization they were doomed to undergo. Thus in fig. 8 (Col. STACY) they lose a little more:—in 9 (ditto) the two breast dots and the curve of the arm separating them from the body are barely traceable. In Col. STACY's copper coins 11 and 12, the engraver has collocated the various dots and lines without any regard to their intent or symmetry. Then in 13, 14, which are precisely similar to the class engraved in figs. 17, 19, 20, Pl. L. vol. IV., the fire altar is transformed into a kind of spear-head, or the central shaft taken out and supplanted by the old Nágari letter म; but the side figures, where the die permits of it, can still be readily made out. These general remarks will save the necessity of describing the reverse of each coin in detail. There are equally grotesque varieties in the contour of the face on the obverse, which none but an experienced eye could trace:

for instance, in figs. 11, 13, and 14, where the eye, nose, lips and chin resolve themselves into elementary dots, very like those on the Saurashtra coins.

Fig. 9 has the letters श्रीलध or श्रीलध *Srī Ladha* . .

Fig. 10, a small copper coin belonging to Dr. SWINEY, is in a far superior style, with the exception perhaps of an unaccountable substitution of the *chakra* for the head of the attendant at the altar ! Can thus it denote the Sun himself ? There are letters in front of the face श्रीदट . . . *Srī Dat* . . . or some such name.

In figs. 11 and 12 (which latter gives the lower portion of the same die), there are more letters than usual :—enclosed in a circle on the cap or crown the letter स *s* : then in front of the nose the usual श्री, and below it the ढ or *h* of the same alphabet.

In the lower series (13, 14,) the shoulders and hand are generally replaced by letters. On some the context seems to make श्रीविग्र . . *Srī Vighra* (*ha*) ; on others श्री यो . . *Srī Yo*, and श्रीपि . . *Srī Pi* . . . None are complete enough to give us a cognate name.

Having conducted this line of Indo-Sassanians down to its amalgamation in the *Varāha* series of my former plate, we may recede, once more, back to the period when the Indian artists could execute a less imperfect copy of the Grecian or Sassanian portrait-die.

Figs. 15, 16 of this plate, and 6 of the ensuing one, are types of a distinct group of copper coins, plentiful in the SWINEY and STACY cabinets. The appendage to the shoulder decides the Sassanian origin, and the wheel on the reverse seems to be borrowed from the emblem above the fire-altar. I incline to think it the solar effigy, rather than the symbol of a *Chakravartti*, or ruler of universal dominion. It is probable that this common emblem is still preserved in the sun of the *Ujjain* and *Indore* coins of the present day. There is the appearance of a letter in front of the face, but ill defined. On the opposite side, however, the two large letters under the wheel are most distinctly तोर, *tora*, the meaning of which remains a mystery. They are not in the same alphabet as that of the preceding coins, but of the more ancient *lāth* character which accords so far with the comparative superiority of the engraving.

Plate XV.

Figs. 1, 2, 3, from Colonel STACY's drawings, and 4, 5, from Dr. SWINEY's coins, are closely allied to the series just described : the Indian bull only being brought on the reverse, generally with the retention of the *chakra* under his feet or on his haunches. The name in front of the *rāja's* face in figs. 3 and 4 contains several recogniza-

ble letters; on fig. 5 they are still more distinct, श्री प्रहेर कु it may possibly be intended for श्री महाराजा *Śrī Mahārājā*, leaving us still in the dark for a name.

On the reverse of fig. 4, under the bull, are the letters विजय वग *vijaya vag.* . . a form that will be found more developed in another branch of this curious series below.

In the next variety, figs. 7 and 8, of which Dr. SWINEY boasts the largest supply, the Sassanian head is no longer retained, but the *chakra* remains coupled with a kind of cross which may be read as the syllable *ku* of the old alphabet. The bull of the reverse is now accompanied by an attendant exactly in the fashion of the inferior *Kadphises* or OKPO group of the *Mithraic* coins.

In the succeeding variety, figs. 9, and 10 (SWINEY), the *chakra* gives place to the trident (of SHIVA ?) and the bull takes an attitude of repose à la *Nandi*. The letters वीदीसगु *Vīdī sagu* or *Vēdēsagu* are bounded by the marginal dots, and must therefore be complete, however unintelligible. Were there room for a final न्न we might conjecturally read विदेशगुप्त *Vīdēsagupta*, “cherished by foreigners;” which would tally with the notion of a Parthian interloper.

In fig. 11 (which I also engraved in the *Kadphises* plate of vol. III.) the trident has the letters त्र *tri*, as if for *trisula*.

In figs. 12 and 13 the symbol is more like the original fire-altar;—to the former are adjoined the letters रुद्र, or perhaps रुद्र *Rudra*, a name of SHIVA.

In figs. 14, 15, (STACY,) and 16, (SWINEY,) the standing figure has quitted the bull to take the chief post on the obverse—the marginal inscription of 14 commences with राज and the last letter is स.

In figs. 17, 18, (SWINEY,) the bull is again replaced by the *chakra*, with two Sanskrit letters पत or सुत—sense unknown.

And now we advance or perhaps it would be more correct to say retrograde to a much more satisfactory group, forming as it were a link between these Indo-Sassanians, and what have been called the Buddhist coins.

The specimens of this series, christened the “cock and bull” by Colonel STACY, and first made known by him, were deficient in preservation; but Mr. TREGGAR of Juanpúr has since been fortunate enough to procure a considerable quantity of various sizes with the epigraph beautifully distinct. They were found in company with copper coins of the GUPTA series, which are in the same style both as to the letters and their horizontal situation in what is called the *exergue* of western numismatics. As pointed out by Mr. TREGGAR, there are three varia-

tions in the reading. On 20 and the coin below it; सत्यमितस *Satya mitasa*. On the fine coins figs. 21, 22; सयमितस *Saya mitasa*. And on Nos. 19, 23, 24 and 25; विजयमितस *Vijaya mitasa*. The variable portion of these, *satya*, *saya*, and *vijaya*, are evidently epithets, the perfect, the true, the victorious,—but the name to which they are applied, *mitasa*, whether of a person or thing, is unfortunately only open to conjecture. From the analogy of the *okro* bull, and the evident descent that has been traced in these plates to a *Mithraic* origin, I feel strongly inclined to read the word मित्रस्य “*mitrasya*, of the true, the victorious sun,” the *Mithras*.—*Mitra* has also the signification “ally,” if it be preferred to confine the title to a mundane ruler.

If the possessive termination be not made out, the terminal *s* may possibly be used in place of the *visarga*.

In figure 22, the trilingual symbol brings us directly to the extensive and oldest of our Hindu series. Of these we have, thanks to Mr. TREGGAR and Col. STACY, enough to fill another plate or two, but they must be kept distinct; while to close the present plate more consistently, I have inserted in figs. 26, 27, two small silver coins found by Capt. BURNES at old *Mandiví* or *Raipúr* in *Cutch*, having Sassanian heads, and reverses respectively corresponding to figs. 7 and 12.

The little copper piece 28, from the same place, has the Nágari letters श्री भीम *Srí Bhima*; the last letter uncertain.

To balance these I have selected three copper coins of Dr. SWINEY'S store, on account of their having the *chakra* or the bull for obverse. On No. 31 we can read the titles श्री . . . महाराज *Srí . . . Mahārāja*; the name as usual provokingly obscure! Dr. S. reads it *ganapati*.

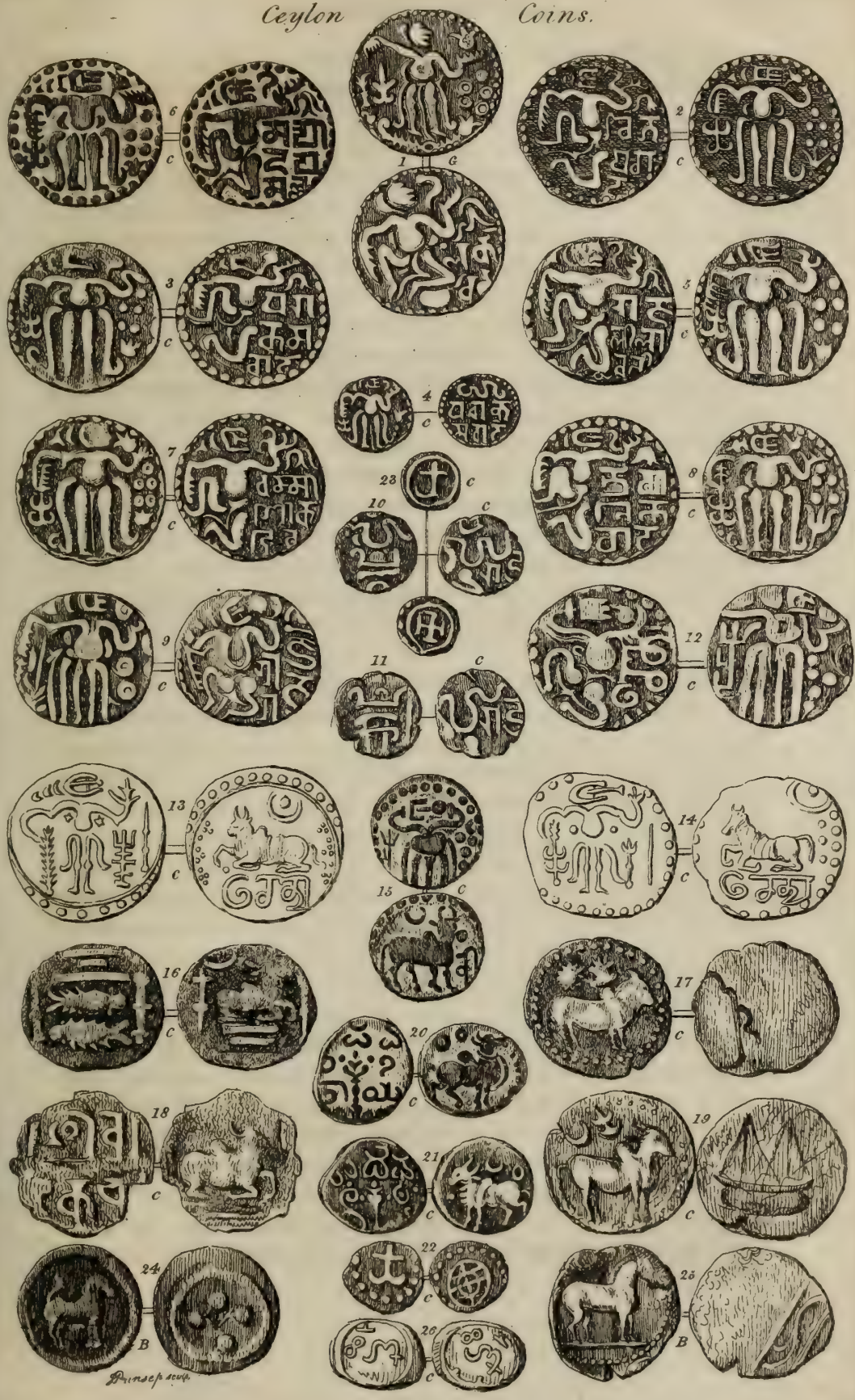
Plate XX. Ceylon Coins.

After wading through the doubtful maze of obscurity exemplified by the foregoing coins, where we have almost in vain sought a feeble landmark to guide us even as to the race or the country whence they sprung, it is quite a relief to fall upon a series of coins possessed of their true and legitimate value as unequivocal evidence of the truth of history.

The peculiar coins of ancient *Ceylon* have been long known to collectors: they have been frequently described and depicted in books, and the characters they bear identified as Deva-Nágari, but little more. MARSDEN and WILSON, as will be seen below, were quite at fault in regard to them, and so might we all have remained had not the Hon'ble Mr. G. TURNOUR published his *Epitome of the Ceylon History* from the Buddhist Chronicles. Upon my publishing in vol. IV. a sketch of the coin which ranks first in the present plate, and suggest-

Ceylon

Coins.



Princely coin

ing the reading *Srī Mayātraya Malla*, I remarked that, although princes of this family name were common in *Nepal*, I could find none in the *Ceylon* list to correspond. This observation elicited the following note from Mr. TURNOUR, which in justice to his sagacious and correct prediction ought to have been published long ago.

“ *Note on Hindu Coin*, fig. 22, of Pl. L. vol. IV.—In your valuable paper in the Dec. Journal, on Hindu Coins, you say that the name of *Malla* does not appear in my Catalogue. He is doubtless identical with *Sahassa Mallowa* in my epitome published in the Almanac of 1833. In the translation No. 6 of the inscription published in 1834, you will also find him called *Sahasa Malla*. That inscription contains a date, which led to an important correction in my chronological table explained at page 176. He commenced his reign in A. D. 1200. His being a member of the *Kalinga* royal family—his boastful visits to India:—and *Dambodinia* (which you have called *Dīpaldinna*) becoming the capital in about 30 years after his reign, where the former similar coins were found;—all tend to shew that the coin in question may be safely given to him. You will observe also by the inscription that his title was *Sirri Sangaba Kālinga Wijaya bahu*, surnamed *Sāhasa Malla*.

Kandy, 17th March, 1836.

GEORGE TURNOUR.”

There was no other *Malla* in the list, and therefore the assignment was probable, but I laid little stress on it from the total variance of the rest of the name. In August, 1836, Captain ORD, of *Candy*, sent me impressions of the coins he had met with, and pointed out that the first letter of the third line was not formed like त्र but open like द. To pursue the train of small causes leading to an important result, when lithographing the *Delhi* inscription of the 10th century in vol. V. page 726, the very first letter स struck me as resembling in the squareness of its form, □ the *Ceylonese* letter I had before mistaken for च. The enigma was thus in a moment solved, and every subsequent reading, (for coins of this prince are exceedingly common compared with others,) has confirmed the reading श्रीमत्साहायसमज्ञ *Srī mat Sāhasa Malla*, in accordance with Mr. TURNOUR's conjecture. In some few specimens the *t* of *mat* is either omitted through ignorance, or worn away; but in general it is quite distinct. MARSDEN's reading was मया दया मज्ञ *Maya daya malla*.

The ice once broken, it became comparatively easy to find owners for all the other specimens either published in former notices, or existing unpublished in cabinets on the island.

Capt. ORD, not content with sending me drawings of those in his

possession, kindly transmitted the coins themselves, allowing me to retain the duplicates. Mr. TURNOUR also generously presented me some coins lately dug up in the ruins of the old city of *Montollee* by Mr. GIFFORD, Assistant Surveyor General. So that, including the gold coin sent me six years ago by Sir W. HORTON himself, and the coins in the Society's Cabinets from *Dipaldinna* (which are of the same class precisely), I am now in a condition to issue a full plate of this type, preserving a degree of chronological order in their arrangement.

The device on all these coins is the same; a rude standing figure or *rāja* on the obverse, holding a flower in the left hand, and an instrument of warfare in the right. The skirts of the dress are rudely depicted on either side of the body, and the fold of the *dhōṭī* falls between his legs, which being taken for a tail, has led some to call him HANU-MÁN, but I think without reason: there are 5 dots and a flower to the right. On the reverse the same figure is more rudely depicted in a sitting attitude. The mode of expressing the face is altogether unique in the history of perverted art.

Fig. 1, the gold coin sent me by Sir W. HORTON, has the inscription श्री लंकेश्वर *Srī Lankēswara* on the side of the seated *rāja*.

This name I presume to be the minister *Lokaiswara* of Mr. TURNOUR's table, who usurped the throne during the Sholean subjection in the eleventh century, (A. D. 1060;) but he is not included among the regular sovereigns, and the coin may therefore belong to another usurper of the same name who drove out the queen LILÁVATĪ in A. D. 1215, and reigned for a year. The Ceylon ministers seem partial to the name: one is called LANKANÁTH.

Fig. 2, a copper coin, copied from MARSDEN, but found also in Mr. LIZAR's drawings, though I have not seen the actual coin. The name is श्री विजय बाहु *Srī Vijaya báhu*. (MARSDEN makes the last word गद् *gada*, erroneously.)

There are several princes in the list of this name: the first and most celebrated was proclaimed in his infancy in the interregnum above alluded to, A. D. 1071, and reigned for fifty years. He expelled the Sholians from the island and re-established the Buddhist supremacy.

Fig. 3, a copper coin, given to me by Capt. ORD. One is engraved in the *Researches*, and is doubtingly interpreted *Srī Rāma náth* by Mr. WILSON. From many examples, however, it is clearly श्री पराक्रमबाहु *Srī Parákrama báhu*. The first of this name was crowned at *Pollonnarowe*, A. D. 1153, and sustained for 33 years the most martial enterprising and glorious reign in *Singhalese* history.

Fig. 4. Among the coins dug up at *Montollee* were several small ones of the same prince. *Srī Parākrama bāhu* fills the field of the reverse.

Fig. 5. This coin, one of the new acquisitions, has the name श्री राज-
लीलावती *Srī Rāja Lilāvatī*, another celebrated person in Singhalese history. She was the widow of the *PARĀKRAMA* just named; married *KIRTI*, the minister of one of his successors, not of the royal line, who was put aside, and the kingdom governed in her name from A. D. 1202 until she was deposed by *SĀHASA MALLA*. She was twice afterwards restored.

Fig. 6. of *Srī mat Sāhasa Malla*, has already been described. The date assigned to this prince in the table is 1205 A. D. or 1748 A. B.; a date confirmed by a rock inscription at *Pollonarowe*, translated and published in the *Ceylon Almanac* for 1834, page 190. He again was deposed by his minister *NIKANGA*, and was succeeded in 1213 by

Fig. 7. श्री धर्माशोकदेव *Srī Dharma Asoka deva*, a prince of a very imposing Buddhistic name, who was placed on the throne at the age of three months, but of whom nothing further is said. The portrait would lead us to suppose him of mature age.

Fig. 8. We here pass over a period of turbulence and continual invasions from *Chola*, *Pandia* and *Kalinga*, and arrive at a coin of श्रीभवानेक बाहु *Srī Bhawāneka bāhu*, who seized the throne on his brother's assassination by a minister in A. D. 1303. In his reign the Pandian general, *ARIYA CHAKRAVARTTI* took *Yapahu*, the capital, and carried off the *Dalada* relic so much prized by the Buddhists of *Ceylon*.

Fig. 9. We now come to a name of less certainty than the foregoing, and possibly not belonging to the island, for it is one of a large quantity of coins found by Col. *MACKENZIE* at *Dipaldinna* or *Amarāvatī*, on the continent of India,—a name so similar to the *Dambadinia*, where many of the *Ceylon* coins were discovered, that, seeing the coins were identical, I supposed at first the places must be so likewise. The uppermost letter is cut off. The next two below are decidedly ज, and under the arm we find श्री and रा. The most legitimate context would be श्री (ग) ज राजा *Srī Gaja Rājā*, (A. D. 1127,) but the ग is hardly allowable.

There are many small coins (10 and 11) from the same place, reading like it the same indefinite title राज *rāja*, to which no better place can be assigned.

Fig. 12. Here again is a common variety of the *Dipaldinna* series, which was thought utterly hopeless, until Mr. *TURNOUR* favored me with drawings of Mr. *LIZAR*'s collection. Two of these (figs. 13 and 14) exhibit a new type of reverse, the Indian bull *Nandi*, which may

possibly betoken a temporary change in the national religion. The legend beneath I immediately recognized as identical with the flourish on figure 12, turning the latter sideways to read it. What it may be, is a more difficult question. The first letter bears a striking analogy to the vowel *e* of the Southern alphabets—but if so, by what alphabet is the remainder to be interpreted? for it may be equivocally read *bètya*, *benya*, *chètya*, and perhaps *Chanda* or *Nanda*. The last alone is the name of a great conqueror in the Cholian and other Southern annals, but it would be wrong to build upon so vague an assumption. It is, at any rate, probable that the bull device is a subsequent introduction, because we find it continued into the *Halu Canara* coins below.

Fig. 15, of the Society's cabinet, a thick well preserved coin, has a device one step less recognizable as a human figure on the obverse, but the bull very neatly executed on the reverse, and in front of him the Nágari letters *वी वी*, as if of *Vira báhu*, 1398?

Figs. 20, 21. In these the upright figure has quite disappeared, or is dwindled to a mere sceptre: leaving space around for the insertion of a legend in the old Canarese character, of which an alphabet was given in my last number. It is, unluckily, not complete, but the *Canara* letters *.. da cha... ráya* are very distinct.

But before touching such modern specimens, I should perhaps have noticed a few other genuine old coins; some, as *fig. 16*, having a bull and two fish; others, as *fig. 24*, having a *singha* and four dots. They were all dug up at *Montollee* with the rest.

These symbolical coins without names agree in every respect with the numerous class of Buddhist coins found in India, and fellows to them may be pointed out among the *Amarávatí* coins, as *figs. 17, 19*, of the bull kind, the reverse plain or uncertain; one much resembling a ship; and *fig. 25*, a prettily executed brass coin of a horse.

One fragment, *fig. 18*, of the sitting bull, from *Montollee*, has the letters *श्रीवी . . कच* in the Nágari character on the reverse.

The two very small coins, 22, 23, retain some of the *Ceylon* symbols—the anchor-shaped weapon (of *HANUMÁN*?) in particular; but to show how cautious we must be in receiving as equally old, all the coins found buried together in the same locality, I have given as the finale to this plate, one of the *Montollee* specimens, *fig. 26*, which, however mystified by the ignorance of the die-engraver, I cannot interpret otherwise than as an old Dutch *paisa*, stamped on both sides $\frac{1}{8}$ St. or one-eighth of a stiver! A *Seringapatam* *paisa* with *xx. CASH* (written invertedly, *HSACXX*.) has often puzzled amateur collectors in the same manner.

IV.—*On the Revolution of the Seasons, (continued from Vol. IV. p. 257.)* By the Rev. R. EVEREST.

A correspondence between certain atmospheric phenomena, and certain positions of the moon, similar to what we have attempted to trace in the preceding papers, has been observed before in various ways, by others, and, in a degree, in all ages. But the objection may be fairly urged to such attempts, that, if we examine the supposed correspondence closer, no regular succession of phenomena can be made out. No state of the atmosphere can be expected to return of a certainty upon the recurrence of the assumed cause: nor, in such cases, can any probable circumstance be assigned, which might be supposed to have counteracted its operation. We may remark, however, upon this, that no two cases are precisely similar; one of the principal conditions of the problem, viz. the heating surface of the earth, never remaining the same, owing to the changes continually brought about in it, both by natural agents, and by the hand of man. Nor can the effect of this last be deemed unimportant, if we consider the many common processes, such as the felling of forests, ploughing, reaping, and irrigating, which are going on, at all times, more or less, over large tracts of country? Let us suppose it possible that a local irregularity of some kind might interrupt the operation of the cause—say (for instance) to such a degree, that the shower, which should have fallen with us, fell 5, or 50, or 500 miles distant from us; then, if, instead of the results of a single rain-gauge or a single barometer, we could measure the amount of effect produced over an extensive surface of the earth, we might the more reasonably hope to obtain some approximation towards a regular succession of phenomena, in proportion as we were thus enabled to obviate the effects of disturbing causes. It occurred from this, that, in a country where the harvest depended almost entirely upon the quantity of rain that fell, the prices of grain in past years (the averages being taken as extensively as possible) might indicate, though imperfectly, a regular succession of the seasons, as far as drought and moisture were concerned; provided, of course, that such a regular succession had actually taken place.

This idea may appear so strange to many, especially to those who are not acquainted with the interior of India, that it may be as well to give it a little further consideration.

It must be familiar to every one that parts of the ancient world, such as Egypt and Judea, were subject at different times to famines

consequent upon drought. These are not uncommon at the present day in low latitudes. In *Australia*, for instance, 'frightful droughts occur in cycles of 9 or 10 years,'—(see *Westminster Review*, No. 45, July 1835, p. 223, and again p. 224;) and that such always have occurred in India, the history of the country abundantly shews. Perhaps the most remarkable one upon record is that which took place in Bengal in the year 1770. (See MILL's History for the particulars of this.) Now we have in the 1st vol. of the *Gleanings*, a list of the prices of different kinds of grain at *Chinsurah* in *Bengal*, from which we find that, in that year, rice was so dear that only 3 seers of it were sold for 1 rupee. If we examine this list further, we shall see that from the year 1733, the years of scarcity, or minimum quantity, and the intervals between them, were as follow:—

Years, . . . 1733. . . . 1752. . . . 1770. . . . 1788. . . . 1807.

Intervals, . . . 19. 18. 18. 19.

If we add to the upper line, 1826, we have altogether 5 intervals of between 18 and 19 years for the recurrence of scarcities in Bengal. From 1733 to 1826 is 93 years, which divided by 5 gives $18\frac{3}{5}$ years. There are some, but faint, traces of scarcities intermediate to these. We must remember that $18\frac{3}{5}$ years is very nearly the duration of the Lunar Cycle.

Having proceeded thus far, we next ascertained by inquiry the dates of the principal scarcities that had occurred in the upper provinces within the memory of man. They are—

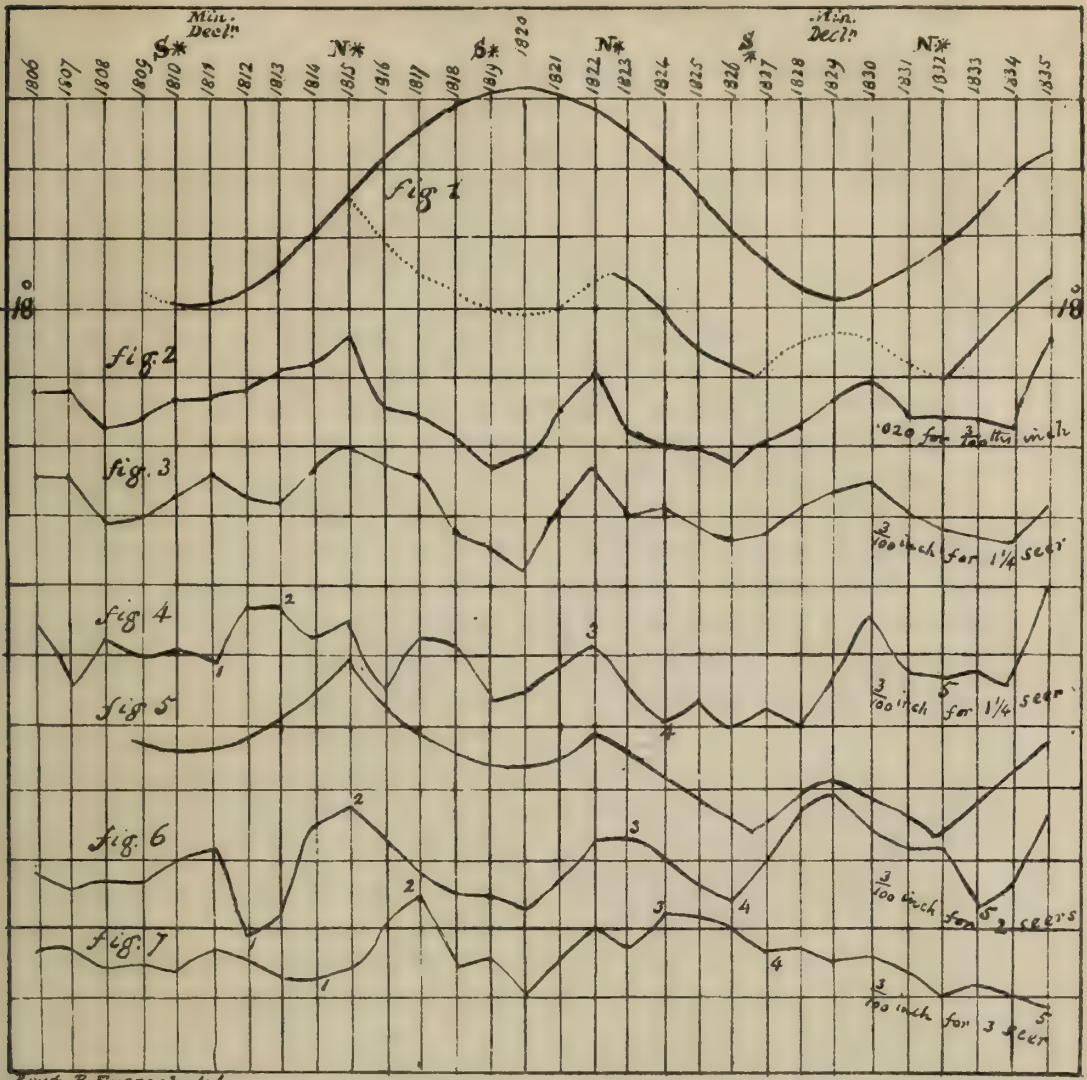
1782-3—1792-3—1802-3—1812-13—1819-20—1826—1832-3.

It will be observed that the recurrences here are nearly twice as frequent as in the former case.

The year 1829 being the year of minimum declination, the years corresponding to it in the previous cycles will be 1811 and 1792; and 1820 being the year of maximum declination, the years corresponding to it in the previous cycles will be 1802 and 1783. Thus we have a scarcity in each year of maximum declination, besides another on, or close upon, the year of minimum declination, and in the case of 1829 a double one, viz. 1826 and 1832. We shall revert to this presently.

On obtaining one or two lists of the prices of corn, it was found, as might be expected, that these were the years when the least quantity was sold for a given sum; and that, intervening, about midway, were years of extraordinary plenty, when the greatest abundance everywhere prevailed. So that it appeared as if the prices would form a curve of which the maxima and minima recurred at fixed intervals of

Variations of the Moon's Declination, and of the price of Grain.



Rev. R. Everest del.

Head of a Snake killed at Cuttack. L. Kittoe

COLUBER MYGTERIZANS?



Abdominal plates 185

Caudal 280.



M. Kittoe des.

2nd Fossil Bone from Fort Baring, 362 ft.



J. Princep lith.

Full size

nearly 9 years. Still, on considering the many causes, both natural as well as produced by human means, which must operate in determining the price of corn, we could not believe it probable that the indication of one; or even of a few lists, were to be depended upon. To obviate, therefore, local irregularities of every kind, it was thought necessary to procure lists of prices from as many places as possible,—lists specifying in detail the prices of four of the principal varieties of corn grown in the neighbourhood (two of the summer, and two of the winter crops), and, as in the *Chinsurah* list in the *Gleanings*, the number of seers sold for one rupee was to be mentioned in each case. Lists of this sort were obtained from *twenty-two* of the principal towns within 200 miles on each side of *Delhi*, *Lodiana*, and *Hansi*; *Bareilly* and *Agra* being the extremes. They all agree very nearly in the principal maxima and minima, and, as they were furnished by different persons who had no communication with each other, their joint result cannot well be ascribed to the errors of copyists, or, indeed, to incorrectness of any kind. The average of all these was taken (four kinds of corn at each place) for each year; the mean price for the season being thus settled by 88 items.

The series thus obtained we shall call our north-west line. Three lists (four kinds of corn in each) were obtained from *Bengal*, and the average of them taken for the *Bengal* line. Two lists (also four kinds of corn) were obtained from the neighbourhood of *Benares*, and the average of them taken for the *Benares* line. The average, then, of the three lines thus formed was taken for a general line.

To connect the variations in this general line with the declination of the moon, we must have recourse to the supposition that the variation is for a series of years direct with the declination, and then for a series, inverse with it,—a supposition for which no reason can be assigned, but which will appear the less improbable, if we recollect a circumstance stated in a previous paper, viz. that the variations of the barometer, either in excess or defect of the mean, increased with the increase of declination.

This connection, or assumed connection, may be most readily shewn thus. Let us first trace upon paper the progress of the moon in declination in different years in this manner. Draw a number of vertical lines at equal intervals (Plate XXII.) to represent the years in succession from 1810 to 1835 (both inclusive). Take out of the Nautical Almanack the highest declination to be found in the month of July in each year, and mark that height upon the vertical line corresponding to the year at any fixed rate, (as 0.1 inch) for each degree that it is above

18°. When you have marked all the heights, join them, and you have the upper, or continuous line, fig. 1. The lower or dotted line in fig. 1, where it separates from the upper,—is formed from it, by substituting for the increments, equal decrements, so as to be exactly the inverse of it. Where this lower line again changes to a continuous one, it runs parallel (or varies directly) with the upper one, and again, where it changes to a dotted one, becomes the inverse of it. It is this lower line, partly direct, partly inverse with the upper, that appears to be the type of the variation of the seasons. As a proof of this, we subjoin below (fig. 2) the general average line of variation in the prices of corn during the same period. This line was thus formed. The three principal lines, the north-west, the *Benares*, and the *Bengal*, were first formed from the average of the different lists. When the maximum and minimum number in each line within the last 85 years (since 1750), were noted, and the difference between them reckoned as the whole amount of variation. This amount was divided into 1000 parts, and, for the actual number in each line, the proportionate parts of the variation were substituted. The average was then taken of the 3 lines, and this is the line expressed in fig. 2, which is there traced upon the paper at the rate of .020 parts of variation for $\frac{1}{16}$ th of an inch. The lowest line (fig. 3) is the general average, simply taken, of the principal lines, without any previous division of the variation into centesimal parts. A fourth, or southern line, was in this case included in the average, having been formed from prices at *Jubulpoor* (two kinds of corn), at *Bhopaul* (three kinds of corn), at *Indore* (two kinds of corn). But as the country in that direction was during part of the time the seat of war, and has been generally subject to unsettled government, and moreover the returns are not numerous, no great dependance can be placed upon it. In fact, the indications given by the north-west series are much more to be relied on than those of the others, owing to the more extensive induction.

In the last paper on this subject we noticed that there were certain years in which, about the solstices, the perigee of the moon fell on the same day with her maximum declination, either north or south, and that these were commonly extreme years, both of drought and moisture. These years are marked thus in the Chart N.* and S.* according as the declination is north or south, and it would appear on referring to the figures that these are usually the extreme years both of plenty and scarcity. They appear also to be the periods at which the variation changes from direct to inverse.

The maxima and minima by the *Calcutta* rain-guage since 1820, are

1823	1826	1832	1835.
+	—	—	+

These results do not differ from those afforded by the average of corn prices (figs. 2 and 3), more than the prices obtained from any one place differ from the general average. The results of registers kept in other places do not show so good an agreement; but the three principal ones we can refer to are those of *Macao*, *Madras* and *Bombay*; all places on the sea-coast, where rain seems to fall more irregularly than elsewhere. If it be asked, why, with the anomalies that still exist in the lines (figs. 2, and 3), we have presumed the upper line (fig. 1) to be the type of them, we answer that that line was formed after seeing the three or four lists of corn prices that first came to hand, and that every successive list received helped to approximate them more closely; the inference, therefore, is only fair, that still further lists obtained would diminish the irregularities at present existing, though we could not hope to obtain an exact parallelism, unless we were previously enabled to apply corrections for the many other causes that must affect the prices of corn. If we refer to the line (fig. 1) which we have assumed as the type of the variation, we shall perceive that on each side of the year 1829 a small inverse, or dotted piece exists: on looking back over the lists of prices, some of which extend as far back as 1700, I do not think that this small inverse piece is interpolated or intercalated, if I may so call it, oftener than every third cycle. With this exception, the variation appears to be direct for about 9 years, and then inverse for the same period. Thus from 1815 backwards, the variations are 9 years directly to 1806—9 years inversely to 1797—9 years directly to 1788, and 9 years inversely to 1779. Then from 1779 a variation is inserted similar to that between 1836 and 1823, up to 1767 or 1766; and again backward from that, periodical curves of 9 years in duration appear to occur as before. On this I shall crave permission to speak more hereafter, when, by the obtaining further lists of prices from different places, I may be enabled to correct those which I at present possess. For this reason I have refrained from carrying the present investigation further back than 1806. I beg at the same time to return my grateful thanks to those who have already assisted me with lists of prices. On looking over the lists it appeared that in those from particular quarters the maxima and minima occurred a year or two too soon, in other places a year or two too late for the supposition. To elucidate this, the lines, figs. 4, 5, 6, and 7, were drawn. Of these, fig. 5 is the type,

being the same as the lower line, fig. 1. Fig. 4, or the *Bengal* line, appears to have its maxima and minima, generally speaking, somewhat earlier than the fictitious line :—fig. 6, or the north-west line, has them somewhat too late, and fig. 7, or the southern line, still later. A fact somewhat analogous to this is observed in Europe where the variations of the barometer are said to take place on the shore of the *Atlantic* a day and a half earlier than at *St. Petersburg*; but in neither case is the difference regular. However, all the information of every kind that I can gather on the subject would lead to the belief that the changes generally do take place earlier towards the northern and eastern parts of the country, later towards the southern and western. I am speaking, of course, of Northern India, having as yet no lists from the south of the *Nerbudda*.

I have not endeavoured to connect the appearances observed with the position of the moon, unaware of the difficulties which attend such a supposition, but because I was at a loss to find one which would account for the phenomena better. As to the appearances themselves, the variations in the price of corn and their recurrences, they of course will rest upon better or worse evidence in proportion as the multiplication of lists from different parts of the country confirm, or not, the indications they afford. From the nature of the subject, much accuracy in the conclusions cannot be hoped for : nevertheless by perseverance some truths may be elicited, which may serve to direct philosophical research, and perhaps to give us some insight into what is likely to happen for the future, in the absence of all better information.

V.—On the Climate of Darjiling.

We make an exception to our general rule of not inserting meteorological registers except in abstract, in favor of the following six months' diary kept by Doctor CHAPMAN at the new station of *Darjiling* in the *Sikkim* portion of the *Sub-Himálayan* range, because it is very important that every information should be made public in regard to the climate of a place selected, or at least proposed, as a sanatorium for the recruiting of exhausted Bengálí constitutions, more accessible than the far western hills of *Simla* and *Masúrí*, or the eastern station of *Chirra Punjí*.

Before Doctor CHAPMAN started on his official deputation to *Darjiling*, his instruments were carefully compared with the standards registered in this Journal. He was particularly requested to attend to the wet-bulb depression, as compared with the dew point ; and to the

boiling point of water, as compared with the barometric indications. As his thermometer for the latter object was only divided to 2° , we have since despatched a new one of greater sensibility, whence we hope soon to obtain valuable data for the correction of the usual tables for the measurement of heights by the thermometer. The dew points noted are curious, sometimes higher than the wet bulb or evaporation point. Can this arise from an error in the DANIELL's hygrometer? We have always found a little iced water added drop by drop to a little common water in a highly polished gilded silver cup, the most trust-worthy mode of taking the dew point. It can be depended on to the tenth of a degree.

Upon the strength of our observations in the December Journal we may, with confidence, calculate the altitude of *Titalya*, and *Darjiling* from the three months' observations of October, December, and January*. Thus applying the constant correction of—.004 to Dr. CHAPMAN's Bar. A, we have

			Altitude
Corrected heights of the Barometer at $8\frac{1}{2}$ A. M.	Calcutta.	Titalya.	deduced.
mean temperature of air 75° ,	29.894	29.626	ft. 255.7
At $4\frac{1}{2}$ P. M, ditto, 84.5 ,	29.815	29.514	293.5
Average altitude of <i>Titalya</i> ,			ft. 275.0

For *Darjiling* the data are more numerous :

	Calcutta.		Darjiling.		Altitude.
	Barom.	Temp.	Barom.	Temp.	feet.
Dec. 1836, obs. 9 A. M.	30.098	68.0	23.367	44.6	6925.1
Ditto, ————— 5 P. M.	29.989	75.	23.298	47.6	6973.1
Jan. 1837, obs. 9 A. M.	30.073	68.	23.322	42.1	6942.2
Ditto, ————— 5 P. M.	29.970	75.	23.247	43.4	6989.9
Mean altitude by 120 obs. of the Barometer,					ft. 6957.5

The altitude of *Darjiling* hill by two observations of Capt. HERBERT, published with his report in the *Gleanings of Science*, is 7218 feet, or 250 feet higher than Dr. CHAPMAN's house. The altitude deducible from the thermometric indication of boiling water is only 6648.5: but little confidence is to be placed in the latter without a very accurate instrument. It is to be remarked also, that the barometric measure will shew a much closer agreement when not corrected by the multiplier for the assumed mean temperature of the stratum of air between the two stations, Unconnected they stand thus: 6595.8, 6578.4, 6624.6, and 6619.2; the maximum discrepancy from the mean 6604.5 being only 26 feet. A numerous series of barometrical results from similar tables will enable us to form a more correct appreciation of the influence of variations of temperature on the formula. N. B. The barometric heights above stated have been all reduced to 32° .

* We have since received the registers for February and March, which we insert, deferring observations till the series is completed.

Meteorological Register kept at Titilya, for the month of October, 1836.

	Barometer A.		Thermometer in the Air.				Regtg. Ther.		Rain.	Wind.		App. of Sky.		
	8½ A. M.	4½ P. M.	8½ A. M.	4½ P. M.	Depres- sion of m. bulb.	4½ P. M.	Min.	Max.		8½ A. M.	4½ P. M.	8½ A. M.	4 P. M.	
1	29.506	.463	71	.5	73	73	69	73	4.53	E. N. E.	N. E.	Rain.	Rain.	October 6th, 2 P. M.
2	.592	.541	72.5	.5	81.5	82.5	70	82.5	1	N. E.	W. S. W.	Cum.	Cum.	Thermometer in air 84°.
3	.576	.533	71	.5	82.5	84	68.5	84	..	W.	S. W.	Clear.	Clear.	Moistened bulb 72°.
4	.672	.583	75	2.5	85.5	85.5	70	85.5	..	N. E.	S. W.	Few Cum	Few Cum	Dew-point by Daniell's
5	.712	.630	75	4.5	83	83	66.5	83.5	..	N. E.	Calm.	ditto.	Clear.	Hygrometer 72°.
6	.740	.664	73.5	3.5	85	85	70.5	85	..	N. E.	W.	Cum.	ditto	
7	.776	.673	76.5	6.5	87	87	68	87	..	E. N. E.	W.	Clear.	ditto	
8	.722	.615	75.5	6.	87	87	66	87	..	N. E.	W.	ditto	ditto	October 7th, 1 P. M.
9	.727	.652	76	4.5	88.	88.	66	88	..	N. E.	Calm.	ditto	ditto	Therm. 85, Moist. bulb 72°.
10	.754	.672	75	5.	87.5	88	67	88	..	E.	W.	ditto	ditto	Dew-point by Hyg. 73°.
11	.768	.695	76	5.5	88	88	67	88	..	N. E.	W.	ditto	ditto	
12	.763	.648	76	4.5	86.5	87	69	87	..	N. E.	W.	ditto	ditto	
13	.742	.684	77	4.	85.5	85.5	70.5	88	..	N. E.	W.	ditto	ditto	October 14th, 1 P. M.
14	.738	.662	75.5	3.	84.5	84.5	69	85.5	..	E.	W.	do fog ear	ditto	Therm. 84, Moist. bb. 73.5
15	.690	.653	67.5	2.5	82.5	82.5	64	84.5	..	W.	W.	do. do.	Cum.	Dew-point by Hyg. 75°.
16	.723	.660	68.5	3.	79	81	62.5	81	..	E.	S. W.	Few cum	Clear.	Water boils 211.24.
17	.792	.713	70	3.	82	82	64	82	..	N. E.	E. S. E.	ditto	ditto	Barometer 29.700.
18	.805	.722	70	3.5	82.5	83	65	83	..	N. N. E.	N. E.	Clear.	ditto	October 19th, 1 P. M.
19	.802	.727	69	5.	82.5	83.5	65	83.5	..	N. E.	S. W.	ditto	ditto	Therm. 83, Moist. bb. 69.5
20	.826	.762	70.5	3.5	82.5	83	65	83	..	E. N. E.	W.	Cirri.	ditto	Dew-point by Hyg. 69°.
21	.837	.782	71	4.5	82	83	64.5	83	..	N. E.	W.	Clear.	ditto	Water bils. 211.5 Br. 29.770
22	.883	.770	70	4.	81	83	64	83	..	E.	W.	ditto	ditto	October 21st, 1 P. M.
23	.820	.727	70	4.	82	83	63	83	..	N. E.	W.	ditto	ditto	Therm. 83, Moist. bb. 69°.
24	.797	.694	72	6.5	82.5	82.5	64	82.5	..	E. N. E.	S. W.	ditto	ditto	Dew-point by Hyg. 68°.
25	.820	.740	71.5	4.5	81	81	64	82.5	..	E. N. E.	W.	ditto	ditto	Water boils 212, Br. 29.800
26	.808	.713	70.5	4.	81.5	82	64	82	..	N.	S. E.	ditto	ditto	October 31st, 1 P. M.
27	.783	.700	70.5	4.5	83.5	84.5	63	83.5	..	N.	Calm.	ditto	ditto	Ther. 77, Moist. bulb 70°.
28	.780	.690	70.5	4.5	84	85	65	85	..	N. E.	S.	ditto	ditto	Dew-point by Hyg. 71°.
29	.782	.664	72	4.	84	84	66	85	..	N.	Calm.	ditto	ditto	Water boils 211.5, Barome-
30	.768	.682	73.5	4.5	82.5	83.5	67	83.5	..	E.	S. E.	Cirri.	Cirri.	ter 29.736.
31	.778	.666	71	3.	77	78.5	68	78.5	..	N. E.	E. N. E.	Cum.	Cum.	
Means,	29.750	.670	72.4	4.2	83.1	83.9	66.4	83.9						

Meteorological Register for the month of November, 1836, kept at Titalya and elsewhere.

Observations made at	Barometer A.			Thermometer in the Air.			Regtg. Ther.		Wind.		Weather.		Boiling Point at 8½ A. M.
	8½ A. M.	4½ P. M.	8½ A. M.	4½ P. M.	8½ A. M.	4½ P. M.	Min.	Max.	Morn.	Even.	Morn.	Even.	
Titalya,	1 29.742	29.644	70	79.5	3	9.5	65	80.5	E.	W. S. W.	Cum.	Cum.	
2 Ditto,	2 .640	.520	70.5	80.5	4	11.5	65	81.5	N. E.	W.	ditto	Clear.	
3 Ditto,	3 .616	.544	67	78	3	12.5	63	81.5	Calm.	W.	Fog, early clr.	do.	
4 Ditto,	4 .737	.686	63.5	80.5	2.5	16	59	81.5	N. W.	W.	ditto ditto	ditto.	
5 Ditto,	5 .804	.749	69	80.5	4.5	13	63	81.5	E.	W. S. W.	Clear.	Fragts. cum.	
6 Ditto,	6 .820	.690	69	81	5	12.5	61	82	E. N. E.	S. S. W.	ditto	Clear.	
7 Ditto,	7 .760	.692	68	81	3.5	13	62	82	E.	S.	Overcast	ditto.	
8 Ditto,	8 .827	.748	68.5	79	5	12	61	81	E.	W.	Clear.	ditto.	
9 Ditto,	9 .846	.754	69	79.5	6	10	60.5	80.5	N. E.	Calm.	ditto	ditto.	
10 Ditto,	10 .771	.700	67	80	5	11.5	61	83	E. N. E.	ditto	ditto	ditto.	
11 Ditto,	11 .793	..	66	..	6	..	60.5	..	N. E.	..	ditto	ditto.	
12 Ditto,	12 .720	..	65	..	..	..	61	..	N. E.	..	ditto	ditto.	
Ranee Dangah,	13 .056	28.960	64	69.5	6	7.5	60	78	N.	N.	ditto	ditto.	210.8
Teprah Munni,	14 .060	.940	66	70	9.5	8	60	78	N.	N.	ditto	ditto.	
15 Ditto,	15 28.978	..	63	..	8	..	60	..	N.	..	ditto	ditto.	
Dinali Golah,	16 .231	.146	61	66.5	4	5.5	55	71	N. N. W.	S. W.	Cum.	Heavy cum.	210.6
17 Ditto,	17 .204	.128	60	69	5	6.5	54.5	72	N.	Calm.	ditto	ditto.	209.0
18 Ditto,	18 .229	.155	60	66	4	5	54	70	N.	ditto	ditto	Overcast.	209.0
19 Ditto,	19 .226	.141	60	68	5.5	6	52	72.5	E.	W. S. W.	ditto	ditto.	209.2
20 Ditto,	20 .200	..	58	..	4	..	53.5	..	N. W.	..	Fragts cum.	..	209.0
Samdong,	21 27.169	27.070	57	62	2	3.5	48	70.5	Calm.	S. W.	Cirri.	Overcast.	207.6
22 Ditto,	22 .185	.100	58	63	3	5	50	73	N.	N. W.	Clear.	ditto.	207.4
23 Ditto,	23 .160	.053	57	64	2.5	5	46	70	N.	S.	ditto	ditto.	207.2
24 Ditto,	24 .150	.073	57	64	3	4.5	47	73.5	N. W.	N. W.	Cirri.	Cumuli.	207.4
25 Ditto,	25 .135	..	54	..	3	..	46	..	N. E.	..	Clear.	..	207.6
Tikie Bong,	26 24.000	23.960	45	54	10	7	37	58	N. E.	S. W.	Bright.	Clear.	201.0
27 Ditto,	27 .073	24.054	46	55	6.5	7	40	60	N. N. E.	S.	ditto	Bright.	201.2
28 Ditto,	28 .137	.094	46	54.5	7	4.5	40	61	N. E.	S.	ditto	Misty.	201.5
29 Ditto,	29 .140	.079	47	52	4	5.	40	59.5	E.	S. W.	Misty to S.	ditto.	201.8
30 Ditto,	30 .126	.071	49	50.5	5.5	5.	42	56	S. W.	S.	Hazy.	Cumuli.	202.0

Meteorological Register kept at Darjiling, for the month of December, 1836.

Barometer A.				Thermometer in the Air.				Regtg. Ther.		Rain.	Wind.		Appearance of Sky.		Boiling Point at 9 A. M.
9 A. M.	5 P. M.	9 A. M.	5 P. M.	5 P. M.	Depression of moist. bulb. A. M.	P. M.		Min.	Max.	Inches	Morn.	Even.	Morning.	Evening.	
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	23.386	23.329	..	46.5	6	6.5	..	38	51	Rain.	N. E.	S. E.	Fragts. cumuli.	Nimbi.	200.5
4	348	308	..	43	5	5	..	36	48	ditto	N. W.	N. W.	Overcast.	Overcast.	199.8
5	392	350	..	44	5	5	..	34	48	ditto	N.	F.	ditto	ditto.	199.5
6	430	394	..	42.5	4	4.5	..	35	47.5	..	E.	N.	ditto	Cumuli.	200.0
7	483	430	..	43	8	9	..	33	50	..	E.	N. W.	Clear.	Clear.	200.3
8	483	440	..	44	9	8.5	..	34	54	..	N.	E.	Bright all day.		200.2
9	475	423	..	46	7	9	..	35	54.5	..	N.	Calm.	ditto		200.2
10	434	398	..	44	11	9	..	36	53	..	W.	S. W.	Clear.	Few cirri.	200.0
11	403	358	..	45	8	11	..	35.5	53	..	Calm.	W.	ditto	Cirri.	200.0
12	373	333	..	49.5	7.5	10	..	36	51.5	..	N.	W.	Clear all day.		199.7
13	393	332	..	42.5	5	7.5	..	35.5	51.5	..	N. E.	N. W.	Few light cumuli.	Few cumuli.	200.0
14	368	317	..	45	8	8.5	..	36.5	56	..	W.	N. E.	Cirri.	Cirri.	199.5
15	371	320	..	42.5	5	6	..	36.5	51.5	..	W.	W.	Overcast, cldy. all day.	Overcast.	199.7
16	400	314	..	45.5	51	9	..	32.5	54	..	N.	W.	Clear all day.		200.0
17	386	296	..	50	8	9	..	33	53	..	N.	Calm.	ditto		199.7
18	392	341	..	46	52	10	..	34	53	..	W.	W. N. W.	ditto		200.0
19	454	370	..	47	52	9	..	35.5	54	..	N. E.	Calm.	ditto		200.0
20	392	312	..	52	51	9	..	35.5	54	..	S.	S.	Clear, a few clouds at noon.	Clear.	199.8
21	335	303	..	45.5	48	5.5	..	36.5	53.5	..	E.	S. S. W.	Overcast, cloudy all day.	Overcast.	199.8
22	341	289	..	45	46	6	..	38	50.5	..	W. S. W.	S. W.	Misty all day.		200.0
23	326	254	..	44	49	7	..	33	52	..	W. S. W.	W. S. W.	Few cumuli.	Overcast.	200.0
24	330	270	..	46	45	4	..	33.5	48.5	..	Calm.	W. S. W.	Cumuli.	Overcast.	200.2
25	342	274	..	41	42	4	..	35	50	..	N. N. E.	N.	Overcast.		200.0
26	343	288	..	43	46	5	..	34	49	..	N.	W. S. W.	Clear all day.		200.0
27	386	324	..	44	48	5	..	33.5	49.5	..	N. N. E.	S. W.	Few cum.	Few cum.	200.0
28	412	356	..	41	45.5	6	..	34	51	..	S.	W.	Cumuli.	Clear.	200.0
29	480	412	..	41	48	5.5	..	34	51	..	N. N. E.	Calm.	Clear all day.		200.2
30	452	320	..	51	49	9	..	38.5	55	..	N.	S. W.	Bright all day.		200.2
31	331	228	..	43	8	5.5	..	34	50.5	..	S.	S. W.	Clear.	Overcast.	200.0
23.396	334	44.6	..	47.6	7.3	7.6	..	34.9	51.6	..	..	..	..	..	200.0.

3rd, 4th, and 5th. Distant thunder in the afternoon and light showers during the nights ; quantity of rain not measured.

6th. A few flakes of snow fell about 2 P. M. To the W. and N. W. heavy snow showers.

30th. Depression of moistened bulb Thermometer at 9 A. M. 18°. Dew-point of Hygrometer 29°. Min. Temp. during the night,.. 38.5.

Ice above $\frac{1}{2}$ an inch thick in the morning.

Hear frost and ice every morning, excepting 15th, 20th, 21st, 22nd, and 24th.

Meteorological Register kept at Darjiling, for the month of January, 1837.

Barometer A.					Thermometers in the Air.				Regdg. Ther.		Rain.	Snow.	Wind.		Appearance of Sky.		Boiling Point at 9 A. M.
9	5	P. M.	9	5	A. M.	P. M.	5	P. M.	Min.	Max.	Inches		Morn.	Even.	Morning.	Evening.	
A. M.	P. M.		A. M.	P. M.													
1	23.333	23.272	43	42.5	5	5.5	42.5	50.5	34	50.5	..	..	Calm.	W.!	Cumuli, cloudy all day.	Overcast.	200.0
2	323	.233	42	42.5	6	5.5	42.5	46.5	34	46.5	..	..	ditto	Calm.	Cumuli ditto.	Cumuli.	199.8
3	340	.298	40.5	45	7	7.5	45	49.5	32.5	49.5	..	..	N.	W.	Bright all day.		199.8
4	400	.308	52	51	16	17	51	54	36	54	..	..	N.	Calm.	ditto do., very thick ice	this night.	200.2
5	341	.240	55	48	16	8	48	56	39	56	..	..	N.	ditto	ditto ditto.	ditto ditto	200.0
6	341	.269	45.5	44	9	5	44	51	34.5	51	..	..	N.	S. W.	Clear all day.	ditto ditto	200.0
7	365	.330	44	44	5	6	44	48	33	48	..	..	Calm.	W.	ditto ditto	ditto ditto	200.0
8	430	.366	44.5	45	7	6	45	51	33	51	..	..	N.	W.	ditto ditto	ditto ditto	200.0
9	404	.336	47	44	8.5	5	44	50.5	34	50.5	..	..	Calm.	W.	ditto ditto	ditto ditto	200.0
10	380	.268	31	37.5	*	5.5*	37.5	37.5	31	37.5	..	..	W.N.W.	E. N. E.	Hvy. sn. till after 12.	Cr. & cr. strat.	200.0
11	380	.322	39	40	5	2	40	45	29	45	..	..	N. E.	Calm.	Bright.	Overcast.	200.0
12	390	.350	40	43	4	3.5	43	45.5	31	45.5	..	..	S. S. E.	N. W.	Clear all day.		200.0
13	404	.316	38	41	3	3	41	45	33	45	..	..	N. N. E.	Calm.	Few cum.	Overcast.	200.4
14	413	.311	39	38	3	2	38	41	31	41	..	..	N. N. E.	ditto		ditto	200.0
15	411	.344	37	41	2.5	2.5	41	43	30	43	..	..	N. N. W.	S. W.		Cumuli.	200.0
16	449	.372	40	41	5.5	4	41	47.5	30	47.5	..	..	N. E. N. E.	W. S. W.	Few cr. Clr. S. & E.	Ovrst. N. & W.	200.0
17	391	.308	42	44	4	3	44	47	32	47	..	..	S. W. W.	W.	Cirri.	Overcast.	200.0
18	412	.348	42	46	6	4.5	46	50.5	31	50.5	..	..	N. N. E.	W.	Clear all day.		200.0
19	391	.268	40.5	43	2.5	2	43	47	31.5	47	..	..	Calm.	W.	Ovrst. clr. N. & N. W.	Hzy cum. W.	200.0
20	284	.181	42.5	41	2.5	1	41	42.5	34	42.5	..	..	W.	Calm.	Overcast hazy W.	Misty.	200.0
21	280	.221	42	41	3	3	41	46	34	46	..	..	S. S. E.	N.	Mist and haze.	Overcast & hazy.	199.8
22	280	.190	40	44	2	2	44	46	33	46	..	..	Calm.	W.	ditto ditto	Mist.	199.8
23	278	.232	45	45.5	2.5	2	45.5	45.5	34	45.5	..	..	W.	Calm.	Overcast and misty.	ditto	200.0
24	267	.204	42	46.5	3	2.5	46.5	48.5	34	48.5	..	..	N.	W.	Fragts. cumuli.	ditto	199.5
25	273	.220	44	47.5	2	3.5	47.5	49	34.5	49	..	..	N. W.	S. W.	Misty.	Cumuli to W.	200.0
26	268	.208	44	44.5	3.5	4.5	44.5	51	36	51	.06	Hail.	SW. sqs W. sqs.	W.	Cumuli, hail and rain.	Clr. cum. N.	200.0
27	236	.184	40	47	3	6	47	51	33	51	.09	..	N.	W.	Clear.	Clear.	199.5
28	232	.192	40.5	40.5	2	3.5	40.5	44	33	44	.05	..	N.	Calm.	Misty.	Rain.	199.5
29	370	.300	40	43	3	2.	43	47.5	30	47.5	..	..	N.	N.	Overcast and misty.	ditto	200.0
30	365	.270	45	45	5	3.	45	48	33	48	..	..	Calm.	W.	Few cumuli.	ditto ditto	200.3
31	306	.244	40	40	2.5	1.5	40	42	32	42	..	..	N. E.	Calm.	Cum. and hazy.	Thick mist.	200.0
	23.346	23.274	42.1	43.4	4.9	4.2	43.4	47.2	32.8	47.2	0.20						

10th. At 4 A. M. distant thunder from the S. At 5 A. M. severe thunder storm from S. with heavy snow shower. Snow continued to fall till noon, by which time it was one foot deep on the ground. Some snow remaining on the ground till the 20th.

* The moistened muslin frozen. Hoar frost and ice every morning, excepting the 1st and 21st.

Meteorological Register kept at Darjiling, for February, 1837.

Barometer.				Thermometer in the Air.				Rain.	Snow, &c. &c.	Wind.		Appearance of Sky, &c. &c.		Boiling Point.
9 A. M.	5 P. M.	9 A. M.	5 P. M.	Min.	Max.	Morn.	Even.			Morning.	Evening.			
1	23.344	23.284	43	42	33	48	Calm.	Calm.	Overcast and haze.	Haze and mist.	200.0			
2	.334	.270	43.5	42.5	34	48	S. W.	ditto	Cum. haze N. & E.	Cum. haze N.	200.0			
3	.394	.332	42.5	45.5	33.5	48.5	N. E.	W.	Thick hz. & mist N. & E. c. S. H. z. N. cum. dis.		200.3			
4	.429	.347	49.5	50.5	34	53	W.	S.	Cum. disp. haze N.	Cirri. haze, N.	200.6			
5	.362	.237	47.5	47	33.5	52	Calm.	W.	ditto	Hazy cum. S. and W.	200.2			
6	.318	.229	42	45	34	52.5	N.	W.	Few cum. intersp.	Overcast.	200.0			
7	.364	.318	47	49	35	53	Calm.	W.	Gen. clear, haze N.	Hazy N. cum. S.	200.3			
8	.416	.350	43	48	35	54.5	N.	W.	Cloudy, haze N.	Cirri. horizon hazy.	200.5			
9	.366	.283	45.5	45.5	35	54.5	S.	W.	ditto haze near horizon.	Rain.	200.3			
10	.354	.280	45	43.5	37.5	52	Var.	E.	Horizon hazy.	Cirri. cum. N.	200.2			
11	.280	.191	47	44	37	48	Squalls.	S.	Cum. S. W. & N. W.	Overst. dist. thunder.	199.8			
12	.181	.124	42	41.5	34	42	S.	W.	Rain.	Rain.	199.5			
13	.187	.157	37	42	29	45	N. E.	S.	Clear S. W. rest misty.	Clear.	192.5			
14	.255	.177	34	36	26	44	N. E.	S. S. W.	Generally clear.	Cumuli.	200.0			
15	.293	.252	36	37	25.5	43	N. E.	W.	Clear.	Overcast.	199.8			
16	.272	.213	35	37	28.5	38	S. S. W.	S.	Snowing.	Thick mist.	199.5			
17	.348	.327	38	42.5	29	44	Calm.	W.	Overcast, clear N.	Cum. strat. and haze.	200.0			
18	.376	.320	41	40	33.5	50	S.	N. N. E.	Mist.	Few cumuli S. W.	200.0			
19	.359	.328	43	50	33.5	53	Calm.	W.	Generally clear.	Clear.	200.0			
20	.369	.353	43.5	51	36.5	54	N. E.	N.	Thin mist.	Cum. S. haze N.	200.3			
21	.442	.411	46	52	37	55	N. N. E.	W.	Clear.	Few cirri.	200.5			
22	.450	.381	45.5	51	38	55	Calm.	W.	Haze and mist.	Light haze.	199.8			
23	.396	.315	52	51	37	57	N. N. E.	W.	Bright.	Overcast and haze.	200.2			
24	.368	.296	47	46	38	50	Calm.	S. S. W.	Overcast and haze.	Overcast and haze.	199.5			
25	.277	.194	45.5	48	37	53	S. W.	S. W.	Thin mist.	Light clouds.	190.8			
26	.227	.179	44.5	46	38.5	52	N.	S. W.	Cirri. & cir. strat.	Hazy cum. N. & N. W.	200.0			
27	.276	.237	46.5	51.5	37.5	55	N.	W.	Cirri.	Cumuli.	200.0			
28	.346	.294	46	49	38	53	N.	S. W.	ditto	Cum. strat.	200.0			
29	23.335	23.274	43.5	45.5	34.2	50								

Frost on the 2nd, 4th, 5th, 6th, 7th, 8th, 10th, 13th, 14th, 15th, 16th, 17th, 19th, 20th, 21st, 22nd, 23rd, and 27th.
The Max. Temperature by frequent observation of the common Thermometer. — Registering Thermometer out of order.

Barometer.										Therm. in the Air.				Regtg. Ther.		Danl. Hygt.		Rn.		Wind.		Weather, &c &c.		Blg. Point.			
10 A. M.		4 P. M.		10 A. M.		4 P. M.		M. bb.		Min.		Max.		Dew-point. 10 A.M. 4 P.M.		Inches		Morn. Even.		Morning.		Evening.		By Ther. No. 1.		By J. P's.	
1	23.432	23.342	54	49	51	45	44	44	38.5	55	48	44	Cm. W. S. W. stg.	Hazy.	Cirri. and haze.	200.0	..										
2	.380	.268	55	47.5	55	48.5	46	46	40	56	46	46	S. W. W.	Cirri.	Clear.	199.8	..										
3	.342	.254	56	44	56.5	46.5	43	43	40	58	43	44.5	Cm. S. W. stg.	ditto	Gen. clear.	199.5	..										
4	.376	.276	52	46.5	53.5	48	45.5	45.5	37	55.5	45.5	48	N. E. R. variable	Clear.	Few cum.	200.0	..										
5	.379	.315	53.5	46	54	49	45	49	39	56	45	49	S. S. S. W.	ditto	ditto	200.3	..										
6	.375	.329	52.5	49	54	49	48	48.5	39.5	55	48	48.5	Calm. S. S. W.	ditto	Clear.	200.0	..										
7	.384	.312	53	47	53	47.5	47	47.5	40	55	47	47.5	ditto S. strong.	ditto	Clear horizon N. hazy.	199.7	199.7										
8	.417	.350	58	51.5	56	50.5	50	50	42.5	56	51	50	ditto W.	ditto	Clear.	199.7	199.7										
9	.439	.380	53	50	53	49	49	49	43.5	56	50	49	ditto S. W. stg.	Light haze.	Cirri. and haze.	199.7	199.7										
10	.412	.290	55	49	56	50.5	45	45	45	58	49	50	S. W. W.	Clr. ab. hor. cloudy.	Gen. ovrst. cr. & cu.	199.8	199.8										
11	.332	.255	58	44.5	55.5	44.5	43.5	43.5	43.5	59	37	42	N. S. S. W.	Clear.	Clear.	199.6	199.6										
12	.388	.334	57	46	55	47.5	41.5	41.5	41.5	59	43	47	S. light.	ditto	ditto	199.8	199.7										
13	.434	.304	55	46	54	47	45	45	41	58.5	45	47*	Calm. W.	ditto horizon hazy.	Cirri and hazy.	200.0	200.0										
14	.287	.150	54	47	50.5	43	44	44	45	54	45	44	S. W.	Few cum. horizon hazy.	Cum. S. & W.	199.6	199.5										
15	.215	.167	53	46	54	46	40	40	37	54	46	46	N. E. W.	Clear	Cum. & haze.	199.5	199.5										
16	.307	.246	54	47	53	47	43	43	40	55	46	46	N. N. E.	ditto horizon hazy.	Ovrst. & thick haze.	199.5	199.5										
17	.400	.310	55.5	48	55	48	49.5	48.5	43	59	47	47	N. E. W.	Clr. above, cum. S. & E. haze.	N. do. do.	200.0	199.7										
18	.396	.282	54.5	49.5	56	49	48.5	48.5	43.5	57.5	48.5	48.5	N. E. W.	Cum. S. thick haze N.	ditto ditto	200.0	199.8										
19	.360	.240	56.5	52	52	48.5	49.5	49.5	43	59	52	49.5	N. E. W.	Cum. intpsd. thick haze N.	Raining.	200.0	199.8										
20	.325	.246	56.5	51.5	59	52	48.5	48.5	44	60.5	51	52	N. E. W.	Cum. S. haze N.	Cum. hazy N.	199.8	199.6										
21	.270	.162	56.5	51.5	53.5	58	45.5	45.5	45.5	60.5	51.5	48	N. E. W.	Cum. S. E. hze. N. chr. above.	Ovrst. & hazy.	199.5	199.5										
22	.276	.223	59	50	60	51.5	43	43	43	63.5	50	49	N. E. Calm.	Clear.	Partially overcast.	199.5	199.5										
23	.379	.319	58	51	56.5	51	45	45	45	61	50	51	W. S. S. W.	Genl. clear. horizon hazy.	Ovrst. & hazy	200.0	199.8										
24	.396	.326	54	50	54	51	47	47	47	58	50	51	W. Calm.	Overcast and hazy.	ditto ditto	200.0	199.8										
25	.373	.300	53	51.5	56	52.5	47	47	47	57.5	52.5	52.5	W. Calm.	Misty.	ditto ditto	200.0	..										
26	.364	.314	55	52.5	58	54.5	48	48	48	58.5	52	54	W. Calm.	Hazy.	ditto ditto	199.8	..										
27	.375	.284	58	55.5	59.5	54.5	49	49	50	61.5	55.5	55.5	N. light. S. W. stg.	Mist and haze.	Cum. S. & W. mist N. & E.	200.0	..										
28	.252	.158	65	53.5	65	50	48	48	49	66.5	51	40.5	N. light. S. W. do	Bright.	Bright above horizon. hazy.	199.6	..										
29	.191	.0.0	61	48.5	61.5	45.5	48	48	48	64	42	36	S. W. S. W. do.	ditto horizon hazy.	ditto ditto	199.4	..										
30	.237	.179	62	49	59.5	48	47	47	47	62	40	41	Calm. W.	Clr. above hor. thick haze.	Hor. hazy.	199.4	..										
31	.310	.221	58.5	47.5	59	48	45	45	45	61.5	43	41.5	Variable. W.	Horizon hazy, chr. above.	Thick haze.	199.7	..										
Mns	23.348	23.265	56	48.9	55.7	48.7	43.1	43.1	43.1	58.4	47.3	47.2															

* 13th, } Dew was deposited on the bulb at 49° } but immediately vanished. 2nd observation gave the results as stated in the column.
 14th, } 45° }
 † 19th, and 27th. No mistake: the dew-point was carefully observed thus.
 Difference between Barometer on Capt. Herbert's station at Darjiling hill, and mine, .063 in. at 56°.

VI.—Note on the Genera *Oxygyrus* and *Bellerophon*. By W. H. BENSON, Esq. B. C. S.

When I described the *Pelagian* genus *Oxygyrus* in the 4th volume of the Journal, from specimens taken on the surface of the Indian and Southern Atlantic oceans, it did not occur to me to search for cognate genera in any other order than that in which the characters of the animal showed its place to be; still less did I expect to find any fossil shell allied to it; but recent consideration of the recorded characters of the fossil genus *Bellerophon* of MONTFORT, which was placed by that author among the *Polythalamous Cephalopodes*, and was subsequently removed by DEFRANCE, on account of the absence of septa, to the neighbourhood of *Argonauta* among the *Monothalamous Octopoda*, suggests the opinion that this shell is improperly associated with the *Cephalopoda*, and that its real station is among the *Nucleobranchous Gasteropoda*, with *Atlanta* and *Oxygyrus*, to the latter of which genera it appears to be intimately related.

The manner in which the umbilicated species of *Bellerophon* are convoluted, the acute keel which is observable in some species, and the sinus which indents that keel within the aperture, are characters which denote the affinity of the two genera; while the prolongation of the lips on either side beyond the umbilicus, and the shelly texture of *Bellerophon*, contrasted with the absence of any prolongation of the lips, the subcorneous nature of the habitation of *Oxygyrus*, and the sudden truncation of its partial keel, form sufficiently prominent characters to distinguish them as generic groups.

That no recent species of *Bellerophon* has hitherto been discovered, may be possibly owing to the *Pelagian* habits of the genus, and the paucity of observers of the interesting Oceanic *Testacea*. Without specimens I am unable to decide on a point on which RANG and DEFRANCE are at issue; the former stating, in his Manuel, that the shell of *Bellerophon* is thin; whereas, in the first volume of the Zoological Journal, DEFRANCE contrasts the great thickness of that shell with the thinness of that of *Argonauta*. Even supposing the latter statement to be correct, weight will not be considered likely to interfere with the *Pelagian* habits conjecturally attributed to the genus, it being now well ascertained that the ponderous *Nautilus Pompilius* ascends to the surface of the ocean with as little difficulty as the lightest of the naked *Cephalopoda*.

P. S.—In vol. 4, p. 175, there is a misprint in regard to the locality of *Oxygyrus*. 29° 30' S. lat. should be 39° 30' S. lat. The

erroneous locality is possessed of a temperate climate, whereas the real one is occasionally subject to the invasion of fields of ice, and therefore more strongly contrasted with the observed habitats in the vicinity of the line, and in the Bay of *Bengal*.

VII.—*Proceedings of the Asiatic Society.*

Wednesday Evening, 3rd May, 1837.

The Hon'ble Sir EDWARD RYAN, President, in the chair.

Colonel D. MACLEOD, Engrs. M. A. BIGNELL, Esq. Capt. S. F. HANNAY, and Dr. W. GRIFFITH, were elected Members of the Society.

Dr. J. SWINEY and Lieut. M. KITTOE, 6th N. I. were proposed by the Secretary, seconded by Capt. CUNNINGHAM.

Professor O'SHUGHNESSY, proposed by Dr. CORBYN, seconded by Sir E. RYAN.

G. W. BACON, Esq. C. S. proposed by Dr. FALCONER, seconded by Mr. MACNAGHTEN.

FRANCIS ROBINSON, Esq. C. S. *Futtehgurh*, proposed by Captain FORBES, seconded by Mr. MACNAGHTEN.

The Bishop of Cochín-China returned thanks for his election.

Read extract of a letter from Major TROYER, the Society's Agent at *Paris*, proposing that honorary membership should be conferred on Baron SCHILLING of *Cronstadt*, the Mongolian and Tibetan scholar.

[Referred to the Committee of Papers.]

Major TROYER mentions that M. GUIZOT, Minister of Public Instruction, is about to sanction a yearly grant of about 2,000 francs, for procuring copies of Sanskrit manuscripts from *Calcutta*. The study of the Oriental languages is increasing fast on the Continent, and a fresh supply of our publications indented for on *London* has been immediately disposed of. Capt. TROYER's French translation of the *Rāja Tarangini* would not issue from the press under a year, on account of the difficulties of printing the Sanskrit text.

Read a letter from the Secretary to Government, General Department, directing the packages of Oriental books to be sent to the Export Warehouse-keeper, and passing the bill for their package, Rs. 17.

The Secretary reported the death of BEHADUR, the pensioned *furash* of the Museum, who had been on the establishment since Sir WILLIAM JONES's time. He was with his wife burnt to death in one of the late dreadful conflagrations.

The account current of the Society with Messrs. MORRIS, PREVOST and Co. shewed a balance of £75 18 1 in favor, after paying the arrears due to the Oriental Translation Fund.

A letter from N. CARLISLE, Sec. Antiquarian Society, dated November, 1836, acknowledged the receipt of the Journal for 1835.

Library.

The following books were presented.

Two copies of the Address by Earl STANHOPE to the Medico-Botanical Society, January 1836, received from that Society through the Government.

Voyage autour du Monde: the Experimental Voyage of the French corvette *Favorite* in 1830-32, by Capt. LAPLACE,—presented by M. FORTUNE' EYDOUX, *Med. Officer and Naturalist of the Frigate La Bonite*.

The Quarterly Journal of the Calcutta Medical and Physical Society, Nos. I and II.—presented by the Editors, Professors Goodeve and O'Shaughnessy.

From the Booksellers; Lardner's Cabinet Cyclopædia, Literary Men, 1. Meteorological Journal for March,—by the Surveyor General.

Antiquities.

Read the following letter from Lieut MARKHAM KITTOE, 6th N. I. dated 2nd April, announcing that in compliance with the Society's desire he had visited *Khandgirî*, in order to re-examine the inscription published by the late Mr. STIRLING.

"Agreeably to the request contained in your letter of the 20th ultimo, of which I have the honor to acknowledge the receipt, I proceeded on Monday last to *Bovanesar* and *Khandgirî*, and examined the inscription given by STIRLING in vol. XV. page 313 of the Asiatic Researches. I found that only part of the inscription is given, and that, too, appears faulty. I was unable to attempt a facsimile, not being provided with scaffolding or ladders, which are indispensably necessary for that purpose. I shall therefore again visit *Khandgirî* in the course of a few days, when I hope to be enabled to furnish a detailed account of the place and of the remarkably curious caves and sculpture existing there.

"The inscription is immediately over a tolerably large cave on the southern face of the hill; unfortunately a great part of it is obliterated: I am, however, in hopes of making out a number of the apparently lost letters by a method I adopt of casting different degrees of shade on the surface, and which I have found to assist greatly in deciphering those of which there is the least shadow remaining.

"I did not rest with observing this cave, as I saw no reason why others more extensive should not possess like inscriptions; in this conjecture I was not altogether mistaken: for I found almost all, large or small, to have more or less writing, some only having one word of six or eight letters (probably the names of the originators of these hermitages), others, sentences. I discovered no less than 14, of 13 of which I enclose copies: of these, four are apparently Sanskrit, one (a name) in a new character, and the rest in the column character.

"I have further great pleasure in announcing the discovery of the most voluminous inscription in the column character I have ever heard of: it was shown to me by the same ascetic who had assisted me before.

"It is on a low rocky hill under a high and isolated one, a mile to the west of the *Pooree* road, and near *Piplee* at the N. W. corner of the famous tank named *Konslaung*: it is called '*Aswastuma*.' There is neither road nor path to this extraordinary piece of antiquity. After climbing the rock through thorns and thicket, I came of a sudden on a small terrace open on three sides with a perpendicular scarp on the 4th or west, from the face of which projects the front half of an elephant of elegant workmanship, four feet high: the whole is cut out of the solid rock. On the northern face beneath the terrace, the rock is chiselled smooth for a space of near 14 feet by 10 feet, and an inscription neatly cut covers the whole space. It is divided apparently into four paragraphs, two of about 36 lines each, a third of about 20, and a fourth of 9½ lines, encircled by a deep cut frame or line, evidently to distinguish it from the other inscription. I took a facsimile of it, as well as of 19 lines of the centre paragraph: this took me a whole day to perform. I shall copy the remainder on my return thither before going to *Khandgirî*, as I consider it of far more importance than the one there, a very small part of it being obliterated. A number of new letters occur, and variations of those already known. I am preparing a list of all, which I shall lay before the Society together with all the facsimiles when finished."

Lieut. KITTOE had met with obstructions in his inquiries from a mistrust of the resident bráhmans, which he found to originate in their temples having been robbed some years ago of slabs containing inscriptions, by some officer; and he strongly urged the justice of restoring any such that might have come into the Society's possession. One he suspected, from its dimensions, was the identical one published in the Journal for February.

The Secretary stated that on examination he found this to be the case, as a second inscription of precisely the same character, now under publication, contained the name of the Rája of Orissa, who founded *Bhubaneswar* temple. The Meeting resolved unanimously, that the slabs should be restored, and that Lieutenant KITTOE had their warmest thanks for the suggestion.

Read a letter from Lieutenant SALE, Engineers, dated *Allahabad*, in April, forwarding a facsimile taken on cloth and paper of an inscription at *Kalinjer*, situated at the entrance of a temple of *Mahadeva*.

The greater part of this inscription being obliterated, it will be impossible to make any profitable use of the facsimile, but it has been so far useful as to enable us to ascertain that another large slab in the Museum in the same peculiar character, must be the one stated to have been brought from the same fort and presented by General STEWART.

"The inscription," Lieutenant SALE writes, "is cut on black marble; portions of it are effaced by former clumsy attempts to take copies, which have destroyed the letters. The date appears to be only about 700 years back, and the text contains the name of a certain rája by name PARMA'LIK. The resident bráhmans give a curious tradition of the origin of the palace and fortifications of *Kalinjer*, attributing them to the virtues of a mineral spring which cured a rája in the *Satya yuga* from a loathsome cutaneous disorder."

The Secretary exhibited Mr. VINCENT TREGGAR's splendid collection of the GUPTA gold coins, which had been intrusted to him for the purpose by the proprietor, whose zeal in this line of research had been attended with remarkable success.

The box contained 40 gold coins of the series—principally of CHANDRA, SAMUDRA, KUMARA, SKANDA and MAHENDRA GUPTAS: also the new *Vicramáditya* type, and the celebrated ARDOKRO coin.

Lieutenant KITTOE had just added a new name to the same list from a coin in the possession of an officer at *Pooree*. It bears the title *Báladitya*, and a name not yet well deciphered, NARA, perhaps intended for NARAYANA GUPTA.

Physical.

The following observations on the declination and inclination of the magnetic needle made at *Diamond Harbour*, were obligingly communicated to the Society by the chief hydrographer of the French corvette *La Bonite*, Captain VAILLANT, during her sojourn here.

The instruments used were of extreme delicacy, with a contrivance for changing the agate of suspension which is found to be worn away by the platina point on which it revolves. The poles of the magnets are changed at every observation so as to remove all index error.

It will be seen that gradual change has taken place since the observations of M. BLOSSVILLE and Colonel HODGSON, published in the *As. Res.* Vol. XVIII. On referring also to experiments made at *Benares* some years ago, the same fact is confirmed. The following table embraces an abstract of the whole of the observations.

Declination, or Magnetic variation.

	°	'	
1813, Mean of Maj. HODGSON's obs. in N. West. Provinces,....	0	41	East.
1821, March, observations at <i>Benares</i> , by J. PRINSEP,	0	53	do.
1822, April,..... ditto,..... ditto,	1	1	do.
1825, March,..... ditto,..... ditto,	1	27	do.
1827, November, at <i>Calcutta</i> , by Captain FABRE,	2	38	54 do.
by Surveyor General,	2	28	36 do.
1828, February, ditto, by ditto,	2	41	16 do.
1829, June, ditto, by ditto,	2	24	10 do.
1837, 14th April, at <i>Diamond Harbour</i> , <i>La Bonite</i> , 4 needles, ..	3	37	East.

Inclination, or dip.

1827, November, at <i>Calcutta</i> , by M. BLOSSVILLE,.....	26	32	38	N.
1832, February, ditto, by J. PRINSEP,.....	26	42	?	N.
1837, April, at <i>Diamond Harbour</i> , mean of four observations, by direct and indirect methods*, with two instruments,	26	39.	4	N.

The Secretary noticed that the bill drawn from Malacca on account of the *Tapir*, had been presented and accepted for Rs. 226 12—but the animal had not yet made his appearance.

M. CHEVALIER, mineralogist of the corvette *La Bonite*, requested the Society's acceptance of a series of Geological specimens from *Corsica*.

Lieutenant KITTOE presented specimens of the rocks in *Cuttack*:—also a snake (*Coluber mycterizans* ?) in spirits; thus described by the donor:—

“The snake was killed by a sipáhi in the hilly country west of *Cuttack*. It occurred to me that I had read of a similar reptile, and on referring to the Journal of the A. S. for April, 1835, page 217, I found the description (given there by Lieut. CAUTLEY) of one found near the *Sewalik* hills; mine, however, differs very materially in some points, though it answers nearer to the description given of the “snouted snake” in his note extracted from the *Encyclopedia Britannica*, as will be seen on comparing the following detail:—

	ft.	in.	
Extreme length of the reptile,	4	11	番
Circumference of the thickest part of body,	0	2	本
Ditto of the neck,	0	1	
Breadth of the widest part of the head,	0	0	寸
Length of ditto,.....	0	1	寸
Projection of the upper jaw or snout,	0	0	本
Length from snout to the vent,	3	2	本
Ditto vent to end of the tail, ..	1	9	本
Abdominal plates or scales,	185		
Subcaudal to extremity of tail,	280		

The eye yellow, oval shape, with black horizontal pupil. Color, upper half grass-green, under half pea-green: has a white line on either side 1.16th of an inch wide for whole length, except towards the extremity of the tail, which is very sharp pointed. The lower jaws when the mouth is closed are even or nearly so with the upper, but when open, expand to near double the width. It has double rows of teeth in both the upper and lower jaws, and several in the upper, much larger than the rest, having the appearance of fangs. Its motion is described as that of rapid bounds, moving also swiftly on the leaves and branches of trees: the present specimen, however, was killed in the sandy bed of the *Mahanaddi*, near a bush, while in the act of catching a bird. See Plate XXIII.”

Lieut. KITTOE in another note mentions the discovery of extensive coal beds in *Ungool* and *Hindoe*, near the *Kursooa* and *Byturnee* rivers.

The existence of the mineral at these places had before been made known to the Europeans, and specimens had been produced. Lieut. KITTOE was anxious to visit and survey the locality, that he might report in further detail, as, if conveniently situated for water carriage down the *Mahanaddi*, the coal might be made available for steamers touching at *Pooree*. The coal and iron mines are together.

Letter from Professor ROYLE inclosing Prospectus of the London Caoutchouc Company, and inviting the Society's attention to this new commercial product, which might be cultivated to any extent on the *Silhet* frontier and in lower *Assam*.

The present supply, from *Para* chiefly, is many thousand tons less than the demand for home consumption. The mode of gathering the juice for export followed at *Para* is approved of, but the Company or Patentees recommend in lieu of the clay balls, that wooden cylinders about the size of a quart bottle should be used. First dipped into clay water, they are immersed in the crude juice and hung up to dry; the dipping is thus repeated until a layer of Caoutchouc $\frac{1}{2}$ an inch thick covers the cylinder

* The indirect method is by taking the dip out of the meridian, and reducing it thereto by a simple calculation; the agreement is very close.

about 6 inches high—this cup (shaped like a tumbler) is then drawn off and the cylinder used again.

The preference given to the solid clean rubber is doubtless consequent on the discovery of a very cheap solvent of Caoutchouc in the volatile coal-oil, which is collected in large quantities at the gas-works. When rectified it resembles in lightness and extreme volatility the distilled mineral naphtha, with which it is probably identical. The Caoutchouc dissolved in this menstruum, and spread in a coat between two folds of silk or cloth, regains its solid and elastic form without injury. Might not the naphtha springs of *Assam* be thus turned to account to introduce the manufacture at once there, with the durable silks of the valley as a basis? Professor ROYLE remarks, that all the trees on which the silk-worm feeds are found to contain the Caoutchouc principle, which is supposed to be essential to the production of the cocoon.

The splendid fossils from Dr. SPILSBURY of *Jabalpúr*, had arrived and were exhibited.

They consisted of the humerus and cubitus of an elephant, upwards of 15 feet in height; also a portion of the pelvis of the same animal; a very perfect elephant's head, ferruginized, of a smaller size, and the head and horns of a buffalo of large size. Dr. SPILSBURY pointed out no less than five new sites of fossils in the *Nerbudda* valley, two of them due to the zealous search of Major OUSELEY. His note along with sketches of the fossils shall appear in our next.

A paper on a new genera of *Raptore*s, one on a new species of *Scolopacida*e, and one on a new genus of the *Plantigrades* with a drawing, were received from B. H. HODGSON, Esq.

A second fossil bone was exhibited and presented by Major TAYLOR, brought up from the Fort boring at a depth of 362 feet below the surface.

A drawing of this fragment is given in Plate XXII. : it appears to be a fragment of the *scutellum* or shell of a turtle—much resembling some of the fragments found so plentifully among the *Jumna*, the *Siválík* and the *Ava* fossils. It is mineralized just to the same extent as the bone exhibited at last meeting; sp. gr. 2.5, loss by heating red 10 per cent. A recent fragment found at the Sandheads by Dr. CANTOR, which had lost all its *inflammable* animal matter, had a sp. gr. 1.66.

The following specimens of natural history were presented.

A collection of shells, and two snakes preserved in spirits; by Mr. FELL, Indian Navy.

A collection of shells, by Lieutenant MONTRIOU, I. N.

A specimen of *Squilla* Mantis, by Lieutenant MONTRIOU, I. N.

A specimen of the Indian Sucking-fish (*Echeneis Indica*), and a foetus of a species of ovi-viviparous shark preserved in spirits, by the Hon'ble Colonel MORISON, in the name of Mr. W. EWING, Branch Pilot.

To the foetus of the shark the yolk bag is still attached by the funis. Colonel MORISON states that a shark was caught at the Sandheads on the 8th of January last, which when opened was found to contain 17 young ones all marked and spotted like the present specimen, which was one of them, although the mother was of the bluish grey and white color, common to most species of the genus. The Indian Sucking-fish (*Echeneis Indica*) was found attached to her body.

Mr. J. T. PEARSON exhibited to the Meeting specimens of the larvæ, pupa and imago of the *Lamia Rubus*. FAB. and a log of the horse-radish tree, from which he extracted them.

Mr. PEARSON states, that having observed a tree at *Howrah* nearly dead from the ravages of insects, he purchased it, and on examination found it pierced in all directions with holes from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in diameter, perfectly round, and more or less filled with a substance resembling coarse saw-dust. These holes were made by the large, long, square-shaped apodal larvæ of the *Lamia Rubus*; and on the tree being kept about two months, the perfect insects began to appear, which led to an examination of the interior, and the discovery of many specimens in the imago state, and that of the pupa exhibited to the Society. Mr. PEARSON mentioned, that, as appears by the last part published of the Transactions of the Entomological Society, Capt. W. SAUNDERS, who paid much attention to Indian Entomology, had never been able to meet with the pupa of *Lamia Rubus*: therefore it may be new to science.

The change from the larva to the pupa in this species appears to take place about half way between the bark and centre of the tree ; and on changing from the pupa to the imago state, the perfect insect works its way out, by eating with its strong mandibles a circular hole, about the same size as that made by the larvæ in the interior of the tree. The general direction of the passages made by the larvæ is perpendicular ; while that of the exit of the imago is horizontal—the shortest way in fact to the air.

The second experimental year of the Curatorship having expired, Dr. PEARSON read the subjoined report on the operations of the Museum for the past year.

Report on the Museum of the Asiatic Society, by the Curator,—May 1837.

At the conclusion of the term of my charge of the Museum last year I stated the improvements that had been made ; and how much it was to be desired that it should not be allowed to fall back into the state in which I found it twelve months before. I am now again called upon to report progress, and to request your attention to form some arrangement by which the evils I then deprecated may be averted, and an improved method adopted, if you wish to alter that which has been followed for the past two years.

The present state of your Museum may be mentioned in a few words. The arrangements of last year have been followed out, by improving the appearance of the apartments and by matting the floors ; while by free ventilation the dampness, from which so much inconvenience was formerly experienced, has altogether disappeared. No enemy now remains indeed but the dust, which does much mischief by settling upon the specimens, and giving a dingy appearance to them ; as well as by frequent leaning being required, and the inevitable injury to which they are in consequence exposed.

Improvements have also been made in the cabinets. They have been all glazed and made ready for the reception of specimens, save one, which is nearly completed. The subscription now on foot for this part of the Museum will render it all that can be wished.

A great number of specimens have been presented during the year ; but owing to the insufficient means taken by their presenters to preserve them, only a portion could be made available to the purposes of the science. I may here state that, preparations, whether of skins or of insects, which have not been preserved by arsenical soap, or by some preparation of arsenic, are not proof against the attacks of insects in this country ; even the so much vaunted solution of corrosive sublimate in spirits of wine is, as I have found after a fair trial, to be almost useless. But of the specimens presented, there have been mounted two hundred and thirty birds, ten of which are of large size ; twenty-eight mammalia, and sixteen reptiles ; eight skeletons have been prepared and articulated in the Museum ; viz. those of the Orang-outang, the cow, the ass, hog, adjutant, two terrapins and a turtle. These are complete, with the exception of the first ; and those who know by experience the labour of preparing and afterwards of joining together, or articulating as it is technically termed, the bones of a skeleton especially in this country, will be able to appreciate the labours of Mr. BOUCHEZ, to whom the praise of executing the manual part of them belongs. The bones of the Orang-outang were presented by Mr. FRITH, but the hands and feet having been unfortunately lost, they were restored in wood from those of the Sumatran gigantic ape in the Museum.

Besides the articulated skeletons there have been presented twenty-two other osteological specimens ; consisting of the skulls of mammalia and birds, the jaw of a whale and the legs of the *Emeu*.

The other specimens consist of a few reptiles and fishes, and a considerable number of insects and shells.

Independent of the above, Mr. HODGSON of *Nipal* sent a series of upwards of eighty well preserved skins of birds, with the intention of their being placed in the Museum, as the originals from which some of the plates of his forthcoming great work have been taken; but circumstances having rendered it desirable to send them for the examination of a naturalist of eminence in England, they were, on his promising speedily to replace them, delivered over, by directions from the Secretary, for transmission there.

With regard to the financial arrangements, the Secretary did not think himself empowered to advance for contingencies any sum beyond that voted by the Society. But that sum being nearly absorbed by the salaries of Mr. BOUCHEZ and his nephew, who is employed to assist him, I have paid the remainder of the charges myself; and in this manner expended Co.'s Rs. 138 15 6, more than I have received.

A few words may be expected from me as to the future management of the Museum. Much has been urged against expending the funds of the Society for this purpose; and a strong protest on the same side, signed by five Members, has also been given in. So far as my own feelings are in question, I shall be happy to yield to this or any other view of the subject taken by the majority. Although I do not agree with those who think money ill expended, which is expended upon an object that contributes to further the pursuits of any considerable portion of the Society. And my respect for the protest would not have been less had it been signed by the older Members of the Society, instead of by those who had been elected only two or three months before the proceedings took place, against which they thought proper to protest; who mistook the mere lodgment of money in public securities for a vested fund; and who had not, I believe, any one of them, ever seen the Museum previous to, or since the new arrangements were made! Under these circumstances I am not inclined to allow much weight to the protest, nor to sacrifice our Museum in accordance with the views of the protestors. It is true, a substitute for a Curator has been proposed in a committee, each member of which should undertake a particular department; and as a body assisting with their advice, and superintending the operations of the Curator, such a committee would be of great service; but as an executive engine, a committee is always worse than useless, and I anticipate nothing but failure in the scheme. If your Curator is not a paid and responsible officer, you will, in effect, have no Curator at all; and if you have no Curator, you will have no Museum; while I am sure a Museum is, in the present direction of men's minds towards natural history, essential to the well-being, if not even to the existence of the Society. If our own funds cannot support our Museum as it should be supported, we ought to apply to the Government to assist us; when, judging from the liberal views of science taken by the present Governor General, and the anxiety he has evinced to encourage that of natural history in particular; coupled with the fact that the Court of Directors have ever been the patrons of zoological pursuits; there is little fear of our making the application in vain. I think the advantages of adopting this plan would be great and manifold; our Museum would be placed on a vigorous and permanent footing; and be the means of enhancing the prosperity of our institution, and of conferring no light benefit upon the public: while we should soon be able to wipe off the reproach so repeatedly and justly thrown upon the name of Englishmen in the East,—of leaving to distant nations the task and the honor of gleaning in our own field the treasures of natural history, which we ourselves are indifferent and too ignorant to reap.

J. T. PEARSON.

Resolved, that the Report be referred to the Committee of Papers for the purpose of drafting such arrangement as the Society's funds may permit for the maintenance of the Museum of natural history on the most efficient footing.

Meteorological Register, kept at the Assay Office, Calcutta, for the Month of April, 1837.

Day of the Month.	Observations at 10 A. M.							Observations at 4 P. M.							Calculated Humidity.				Observations at 4 P. M.				Calculated Humidity.				Register Thermometer extremes.		Wind.		Weather.		
	Old Stand. Barometer at 32°.	New Stand. Barometer reduced.	Thermometer in air.	Depression of wet-bulb.	Do. by Les.	Hair Hygrometer.	Centesimal tension of vapour by wet-bulb.	Do. by hair.	Hygrom.	Do. by dew-point.	Old Stand. Barometer at 32°.	New Stand. Barometer at 32°.	Thermometer in air.	Depression of wet-bulb.	Do. by Les.	Hair Hygrometer.	Centesimal tension of vapour by wet-bulb.	Do. by hair.	Hygrom.	Do. by dew-point.	Cold on roof.	Heat insun's rays on roof.	10 A. M.	4 P. M.	Morning.	Afternoon.	Night.						
1	29.796	30.761	85.7	15.5	15.1	58.8	86	40	41	70	29.660	30.588	91.9	18.9	21.4	57.7	67	29	33	40	73.5	118.2	104.5	SW.	SW.	hazy.	cloudy.	storm.					
2	807	775	79.5	8.0	6.4	67.0	87	63	69	72	716	666	84.1	10.9	10.4	66.2	81	56	56	61	64.0	104.5	64.0	W.	E.	dull.	do	do					
3	804	844	78.4	10.3	8.9	62.0	84	50	59	66	721	721	86.9	13.6	12.4	63.8	76	52	46	52	62.5	113.0	62.5	W.	S.	cloudy.	fine.	do					
4	833	801	82.5	6.7	6.9	66.3	82	55	57	63	709	657	91.9	17.3	16.1	53.0	73	41	65	48	63.2	113.0	63.2	sw.	sw.	overcast.	numb.	do					
5	808	871	83.7	11.5	10.8	66.0	82	55	57	63	683	631	92.7	18.7	20.2	53.8	69	32	35	42	68.2	115.0	68.2	sw.	sw.	cumuli.	cum. str.	do					
6	866	771	85.3	6.3	8.0	69.4	81	67	61	80	634	569	92.3	13.9	14.3	62.0	79	50	38	57	75.5	113.1	75.5	W.	SW.	cir. cum.	cloudy.	do					
7	738	698	85.9	6.3	8.3	67.7	89	66	61	80	622	547	95.7	22.9	27.2	52.7	59	25	38	58	75.4	114.7	75.4	W.	SW.	clear.	cumuli.	do					
8	760	700	88.1	7.0	7.0	75.8	89	72	67	76	630	583	91.6	9.2	9.5	75.7	84	63	61	66	69.8	115.6	69.8	W.	S.	do	haze.	do					
9	793	752	84.3	10.1	10.0	67.2	82	59	59	63	722	618	91.5	17.6	17.5	63.0	74	48	52	49	77.4	95.2	77.4	W.	S.	cloudy.	stratus.	do					
10	814	769	86.4	13.6	14.8	63.8	71	55	56	57	682	618	91.5	25.5	25.0	48.0	48	37	41	44	72.6	115.0	72.6	W.	SW.	ctr. cum.	cum. cir.	do					
11	792	747	86.8	12.4	12.9	68.0	76	52	53	52	660	610	94.8	23.8	22.4	49.0	48	25	22	20	65.6	117.3	65.6	sw.	W.	heavy fog.	c.	clear.					
12	783	772	86.8	7.0	7.6	71.0	76	55	63	53	585	548	97.7	27.0	28.3	55.8	57	19	24	23	75.4	116.0	75.4	W.	W.	do	do	hot wind.					
13	700	659	88.3	11.1	12.2	68.0	63	54	40	35	553	499	95.4	22.2	28.3	55.8	57	27	28	26	72.6	119.1	72.6	SW.	N.W.	do	do	do					
14	721	674	91.2	18.9	18.6	62.7	63	54	47	46	620	572	99.6	28.8	26.2	52.2	48	20	22	20	73.2	126.2	73.2	SW.	W.	sl. fog.	c. str.	hazy.					
15	711	674	91.2	12.7	12.2	66.5	74	34	43	39	564	511	99.9	24.4	53.0	50.3	44	26	22	22	75.4	128.2	75.4	n.	o.	clear.	very hot.	do					
16	722	704	90.7	13.4	14.2	61.0	64	38	33	36	483	440	100.2	27.8	26.2	55.4	51	24	24	24	75.0	127.0	75.0	SW.	sw.	do	do	do					
17	619	595	91.9	16.9	19.0	64.8	74	35	38	43	444	366	104.3	32.0	33.5	50.3	44	14	18	17	77.1	123.5	77.1	sw.	sw.	do	do	do					
18	572	556	93.3	12.6	13.7	68.3	76	63	46	52	497	445	98.4	15.7	14.0	73.0	74	52	45	49	77.6	111.2	77.6	se.	S.	do	do	hazy. (eclip.					
19	614	579	91.9	9.5	9.6	72.0	84	67	60	66	530	469	95.5	14.0	73.0	74	52	53	52	52	77.4	102.4	77.4	S.	SE.	cloudy.	do	do					
20	596	611	86.7	8.7	8.3	73.5	92	79	82	60	692	645	85.0	4.0	4.8	76.3	91	81	76	80	76.5	116.5	76.5	se.	O.	clear.	lull.	stm.					
21	756	727	87.6	8.1	5.0	76.0	85	65	71	68	735	686	86.4	19.2	21.2	66.0	67	33	39	40	66.5		66.5	sw.	S.	do	clear.	do					
22	872	825	87.6	7.6	8.0	76.2	85	68	66	70	755	700	97.4	17.8	20.2	70.2	67	35	26	25	76.2		76.2	sw.	sw.	do	do	do					
23	911	866	88.3	7.6	8.0	75.5	86	60	68	70	697	648	96.9	26.1	27.7	65.3	56	20	26	25	76.2		76.2	sw.	sw.	do	do	do					
24	842	796	88.3	5.0	12.4	70.3	78	53	53	56	697	644	96.9	26.1	27.7	65.3	56	19	37	27	69.6		69.6	sw.	sw.	do	do	do					
25	820	784	90.1	12.1	15.4	68.3	74	42	47	47	719	667	95.7	24.0	25.0	61.9	58	25	34	29	74.4		74.4	sw.	sw.	do	do	do					
26	836	796	91.5	17.0	12.0	69.5	73	54	52	57	696	642	93.5	21.3	58.0	61	28	33	33	33	76.1		76.1	sw.	sw.	do	do	do					
27	804	778	90.0	12.0	12.0	69.5	79	65	56	57	622	563	93.9	18.5	18.5	68.9	63	37	45	41	74.8		74.8	sw.	sw.	do	do	do					
28	765	733	88.3	8.9	10.0	70.0	87	66	66	72	580	531	91.5	10.3	9.6	74.2	86	61	58	70	76.2		76.2	S.	S.	cloudy.	do	do					
29	678	646	88.5	8.7	8.5	75.4																							overcast.				
Mean,	29.764	732	87.4	10.5	10.8	68.6	60	58	56	61	29.639	587	94.4	19.4	20.4	61.7	64	35	38	39	73.6	116.6	73.6		South west.		unusually hot and dry.						

Difference of Barometers .632 and .652.—The Dew-point observations are sometimes probably below the truth. Rain on March 22nd omitted, 0.4 inches.—There was a slight water-spout on the 22nd. A very destructive one occurred in March at Jessore.

Difference of Barometers .032 and .052.—The Dew-point observations are sometimes probably below the truth. Rain on March 22nd omitted, 0.4 inches.—There was a slight water-spout on the 22nd. A very destructive one occurred in March at Jessore.

JOURNAL

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I.—*Journal of a visit to the Mishmee hills in Assam.* By WM. GRIFFITH, M. D. Madras Medical Establishment.

[In a letter to Captain F. JENKINS, Political Agent, N. E. Frontier; communicated by Government to the Asiatic Society, the 5th April, 1837.]

In pursuance of my intention of visiting the *Mishmee* hills, as soon as the season was sufficiently advanced, I left this station on the 15th October, and proceeded up the *Brahmapútra*, or *Lohit*, to the mouth of the *Karam Púnee*, which we reached on the third day. I thence ascended this river, which is a mere mountain stream, for a similar period, at the expiration of which I had reached its extreme navigable point at that season of the year, even for the small boats which I employed. At *Chonpúra* the rapids of the *Brahmapútra* commence, and thence they increase rapidly in frequency and violence; so much so, that the river is only navigable for small boats one day's journey above the mouth of the *Karam*. No villages exist on the great river, the extreme banks of which are clothed with heavy tree jungle. It is much subdivided by islets formed of accumulations of sand and boulders: these islets being either scantily covered by coarse species of sugar, or tree jungle, or grass and tree jungle. The *Karam* is a considerable stream, consisting of a succession of rapids; its banks are clothed with very heavy tree jungle, among which the *simul**, *údal†*, and a species of alder occupy conspicuous places. On the second day of its ascent we reached the Kamptee village *Palampan*, situated about a mile inland in a southerly direction; it is small and of no consequence, although the Rájá is of high rank.

* *Bombax heptaphyllum*.

† *Sterculia* sp.

At this village my attention was first directed to a very valuable native dye, the *room* of the Assamese; with this dye all the deep blue cloths so much used by the Kampteas and Singphos are prepared. What is more curious, it belongs to a family (*Acanthacea*), the constituents of which are generally devoid of all valuable properties—it is a species of *Ruellia*, and is a plant highly worthy of attention. Leaving the boats, I proceeded up the *Karam*, the general direction of which is about E. S. E., and after a tedious march of five hours over small boulders, reached the first *Mishmee* village on the route. This village is called *Jingsha*, deriving its name, as appears to be always the case, from the Gam: it is about six miles from the foot of the hills—it is small, the number of houses not exceeding ten, and possesses apparently very few khets. The Gam is a man of inferior note. After a halt of two days to enable my people to bring up the provisions, &c., I left for *Brahma-kúnd*, which, from Captain WILCOX's description, I imagined to be the usual route to the interior. *Brahma-kúnd* lies to the E. N. E. of *Jingsha*, from which place it is distant by the path, which is very circuitous, about twelve miles. The route at first follows another bed of the *Karam* to the S. W., thence ascending the *Daí Pánee* to the eastward, thence diverging to the north through a heavy tree jungle, and after traversing this for about an hour ending at the *kúnd*, to which place the descent is steep, but short. Of this celebrated place much has been said, but no description at all answers to it, as it exists now. The scenery is bold, the hills on either side of the river being very steep but of no great height, and the *kúnd*, or reservoir itself is totally lost in the contemplation of the immensely deep bed of the river and the gigantic rocks visible in every direction. The extreme width of the bed of the river is certainly upwards of one hundred yards, but of this only the left half is occupied by the stream. The *kúnd* is contemptible, and unless the attention were especially directed to it, would quite escape observation. The *Deo Pánee* is a paltry attempt at a waterfall. The course of the river is slow and sufficiently tranquil, but to the eastward there is a violent rapid ending about sixty yards from the *kúnd* itself. This reservoir owes its existence to the projection of two rocks into the *Lohit*; at this season it contains but little water. The fuqeer's rock is a huge mass perforated near its summit; its extreme apex is accessible, but with difficulty; it does not represent Gothic spires, this appearance, so far as I know, being limited to shell-limestone. At this romantic spot I staid three days, paying particular attention to the vegetation of the place, which presents some curious features, of which the most

remarkable is the existence of a species of maple and one of rue : the former being an inhabitant of *Nipal*. the latter of considerable elevations on the Khasiya ranges. I was met here by TAPAN GAM, the chief of the *kúnd*, who claims all the offerings invariably made to the deity by every native visitor of whatever rank or religion he may be.

After examining the adjoining hills, over which the route pursued by Lieutenant WILCOX lay, I was convinced of the impracticability of proceeding, at least with the usual description of Assamese coolies. I was therefore compelled to retrace my steps to *Jingsha*, having previously arranged with TAPAN GAM for guides to shew me the usual route. At *Jingsha* I was delayed for several days in bringing up rice, which had been kindly forwarded from *Sadiyá* by Lieutenant MILLAR, and without which I knew it would be impossible to visit the interior. From *Jingsha* I proceeded up the *Karam* in an easterly direction, diverging thence up the *Kussing Pánee* in a N. E. direction, thence skirting the foot of the hills, through remarkably heavy bamboo jungle. After a long march we descended a low hill to the *Lai Pánee*, but at a higher point than any previously visited. The following day I commenced the ascent, passing during the day a small Mishmee village without a name, and halting on the slope of a hill in heavy tree jungle. Commencing our march early next morning, we ascended and descended several considerable hills, and at noon reached *Deeling*, the *Dilling* of Captain WILCOX. This is a small village consisting of a few houses, scattered in various directions, and opposite to it on the great mountain *Thumathaya* is another called *Yeu* : there is about this place a good deal of cultivation. It was here that I came upon the route previously followed by Captain WILCOX. This I followed as far as GHALOOM's : it is correctly described in that officer's memoir on *Assam* and the neighbouring countries. Our halts were as follows :—on the third day the bed of the *Lohit* ; on the fourth at the mouth of the *Lung* ; on the fifth at GHALOOM's, whose village has been removed to the banks of the *Lohit*, and at a distance of about one hour's march in advance from the old site. From GHALOOM's I proceeded to KHOSHÁ's, whose village is on the north bank of the *Lohit*. I crossed the river, which is here about forty yards wide, and as usual deep and tolerably rapid, on a bamboo raft, no one but the Mishmees venturing by the suspension canes, which are here stretched over a space of about eighty yards, and at a formidable height from the stream. From KHOSHÁ's I proceeded to PRIMSONG's, whose village is at a much higher elevation than any of the others : but PRIMSONG was unfortunately absent. This was the extreme point to which I was enabled

to proceed, and after waiting three days for the arrival of the chief, I returned to KHOSHA'S, where I met with PRIMSONG, who had just returned from a visit to TRUSONG, a chief whose village is far in the interior.

I had thus become acquainted with all the influential chiefs near our frontier, and by all I was received in a friendly and hospitable manner. In accordance with my original intentions, my attention was in the first place directed towards ascertaining whether the tea exists in this direction or not, and, as I have already informed you, I have every reason to think that the plant is unknown on these hills. From what I have seen of the tea on the plains, I am disposed to believe that the comparative want of soil, due to the great inclination of all the eminences, is an insuperable objection to its existence.

As I before observed to you, during my stay at *Jingsha* my curiosity had been excited by reports of an incursion of a considerable force of Lamas into the Mishmee country. It hence became, having once established a footing in the country, a matter of paramount importance to proceed farther into the interior, and, if possible, to effect a junction with these highly interesting people; but all my attempts to gain this point proved completely futile; no bribes, no promises would induce any of the chiefs to give me guides, even to the first Mishmee village belonging to the Meyhoo tribe. I was hence compelled to content myself for the present, with obtaining as much information as possible relative to the above report, and I at length succeeded in gaining the following certainly rather meagre account.

The quarrel, as usual, originated about a marriage settlement between two chiefs of the Meyhoo and Taeen tribes: it soon ended in both parties coming to blows. The Meyhoo chief, ROOLING, to enable him at once to overpower his enemies, and to strike at once at the root of their power, called in the assistance of the Lamas. From this country a force of seventy men armed with matchlocks made an invasion, and, as was to be expected, the Taeen Mishmees were beaten at every point and lost about twenty men. The affair seem to have come to a close about September last, when the Lamas returned to their own country. Where it occurred I could gain no precise information, but it must have been several days' journey in advance of the villages I visited.

It was owing to the unsettled state of the country, resulting from this feud, that I could gain no guides from the Digaroos, without whose assistance in this most difficult country, I need scarcely say, that all attempts to advance would have been made in vain. These people very plausibly said, if we give you guides, who is to protect us

from the vengeance of the Meyhoos when you are gone, and who is to insure us from a second invasion of the Lamas? Another thing to be considered is the influence even then exercised over the Mishmees near our boundaries by the Singphos connected with the Dupha Gam; but from the renewal of the intercourse with our frontier station, there is every reason for believing that this influence is ere this nearly destroyed.

I was, after various attempts, reluctantly obliged to give up the affair, although I am by no means certain that, had I known of the delay that would take place before I met Captain HANNAY, a longer sojourn in the hills would not have been attended with success. I returned by the same route, halting at *Deeling* to enable me to ascend the great mountain *Thumathaya*, on the top of which I passed one night, and the ascent of which in every respect amply repaid me for all difficulties incurred. On my return I visited TAPAN GAM's* village, where I met several Singphos, who were engaged in the late troubles on the side of the Dupha, and which is reported to be the favorite haunts of a famous Singpho dacoit, CHU'N YU'NG; thence I returned to *Jingsha*.

Nature of the country. The country traversed during the above journey consisted of a series of ascents and descents, as must always evidently be the case where the route follows the course of a considerable river; for difficulty it cannot well be surpassed, this again depending on the proximity of the route to the *Lohit*. The only comparatively easy portion is that between *Daí Pánee* and the place where we descended to the bed of the large river. The hills are invariably characterised by excessive steepness, and as the greater portion of the route winds round these eminences at some height above their bases, the marching is excessively fatiguing and difficult, to say nothing of its danger. In very many places a false step would be attended with fatal consequences; in one place in particular, upwards of an hour was consumed in traversing a sheer precipice at a height of at least one hundred feet above the foaming bed of the *Lohit*; the only support being derived from the roots and stumps of trees and shrubs, and the angular nature of the face of the rock, which is, I believe, grey carbonate of lime:

Paths. The paths are of the very worst imaginable description, always excessively narrow and overgrown by jungles in all directions. In very steep places the descent is assisted by hanging canes, which afford good support. No attempt is ever made at clearing them of

* This chief is not worthy of any encouragement. He would feel this the more, owing to the proximity of his village to our boundary and its easiness of access.

any obstruction: indeed the natives seem to think that the more difficult the paths the better, a greater security being thus obtained from foreign invasion. Better paths do exist, and there is one in particular on the north of the *Lohit*, which is that commonly used by the Mishmees when carrying cattle back from the plains to their homes. But it was my fortune to be shown the very worst, although I escaped the cliff above alluded to by following on my return another but very circuitous route. Up to GHALOOM's old site the hills are nearly entirely clothed with dense tree jungle, the points of some being covered with a coarse grass; thence every step towards the eastward is accompanied by a most material improvement, the hills presenting a very pleasing and varied surface, and being only clothed with tree jungle towards their bases. The extreme summits of the loftiest are naked and rugged.

Rivers and Torrents. The torrents which are passed between the foot of the hills and GHALOOM's are the *Tussoo* (*Dissú* of WILCOX), which separates *Thumathaya* from *Deeling*, the *Lung* and the *O*. Of these the *Lung* is the only one not fordable; the Mishmees cross it by suspension canes. I preferred constructing a rude bridge, which, as the torrent is divided by huge boulders, was neither a difficult nor a very tedious affair. The *Tid-ding*, which is of considerable size, is on the right bank of the river. The rills are frequent, especially towards the foot of the hills. I saw only one waterfall of any magnitude near the *Tussoo*: the body of water is not great, but the height of the fall is certainly one hundred feet. The *Lohit* itself beyond the *Lung* is of no great size, the average breadth of the stream at that season being from forty to fifty yards. At GHALOOM's its depth did not appear to exceed thirty feet. It is a curious fact, its temperature is lower than that of any of its tributaries. Although I have not seen the *Dibong*, judging from the comparatively small size of the *Lohit*, the probability is much in favor of the former carrying off the waters of the *Tsan-poo*.—PRIMSONG indeed informed me that the *Lohit* above the *Ghaloom Pánee* (*Ghaloom Thee* of WILCOX) is an insignificant mountain stream.

Altitude of Mountains. Of the height of the various ridges surmounted I can give no idea: the only thermometer I had was unfortunately broken before my arrival at the *kúnd*. The highest I visited was *Lamplang-thaya*; the next in height *Thumathaya*: on both these snow occasionally collects during the cold months. The western face of the latter is completely bare towards its summit, the eastern being covered with tree jungle. Of the former, the upper third is completely naked; and two efforts to complete its ascent were fruitless.

Geology. Of the geology of these hills I am unfortunately incompetent to judge; nor was I ever enabled to make a satisfactory collection, owing to the impossibility of procuring additional carriage.

Zoology. The subjects presented by the animal kingdom are certainly not extensive either in number of species or of individuals. I observed no wild quadrupeds except monkeys and an occasional squirrel; no tigers exist, but bears are represented as tolerably numerous. The number of birds which I succeeded in procuring barely amounted to species.

Botany. Of the botany it is not my intention here to give an extended account. It is sufficient to state that it appears to have similar features with other portions of the *Sub-Himalayan* ranges. I did not reach the region of fir trees, but I could plainly distinguish by the telescope the existence of very extensive forests on the loftier ranges to the eastward. The families that have the most numerous representatives are *Compositæ*, *Urticæ*, *Balsamineæ*, *Cyathandiaceæ*, *Acanthaceæ*, *Gramineæ* and *Filices*. The most interesting, chiefly from the indicating elevation, or from their being usually associated with climates similar to that of northern Europe, are *Ranunculaceæ*, including that valuable drug the *Mishmee-Teeta*, and the celebrated poison *Bee*. *Fumareaceæ*, *Violaciæ*, *Camelliaceæ*, *Hamamelidiæ*, including the *Bucklandia* and *Sedgwickia*, *Gentianeæ*, *Vacciniaceæ*, *Campanulaceæ*, *Thymaleæ*, *Juglandeæ*, *Cupuliferæ*. The most unique plants is a new genus of *Raffleseuceæ*, like its gigantic neighbour of the Malayan Archipelago, a *parasite*, on the root of a species of vine.

The natives of this portion of the range are divided into two tribes, Taeen or Digaroo and Meyhoo, these last tracing their descent from the *Dibong* Mishmees who are always known by the term crop-haired. The Meyhoo, however, like the Taeens, preserve their hair, wearing it generally tied in a knot on the crown of their head. The appearance of both tribes is the same, but the language of the Meyhoos is very distinct. They are perhaps the more powerful of the two; but their most influential chiefs reside at a considerable distance from the lower ranges. The only Meyhoos I met with are those at *Deeling*, *Yeu*, a small village opposite *Deeling* but at a much higher elevation, and *Tapan*. I need scarcely add that it was owing to the opposition of this tribe that Captain Wilcox failed in reaching *Lama*. The Digaroos are ruled by three influential chiefs, who are brothers, *DRISONG*, *KHOSHA*, and *GHALOOM*: of these, *DRISONG* is the eldest and the most powerful, but he resides far in the interior. *PRIMSONG* is from a distant stock; and as the three brothers mentioned above are

all passed the prime of life, there is but little doubt that he will soon become by far the most influential chief of his tribe. Both tribes appear to intermarry. The Mishmees are a small, active, hardy race, with the Tartar cast of features; they are excessively dirty, and have not the reputation of being honest, although, so far as I know, they are belied in this respect. Like other hill people, they are famous for the muscular development of their legs:—in this last point the women have generally the inferiority. They have no written language;—their clothing is inferior; it is, however, made of cotton, and is of their own manufacture;—that of the men consists of a mere jacket and an apology for a *dhuti*,—that of the women is more copious, and at any rate quite decent: they are very fond of ornaments, especially beads, the quantities of which they wear is very often quite astonishing. They appear to me certainly superior to the A'bors, of whom, however, I have seen but few. Both sexes drink liquor, but they did not seem to me to be so addicted to it as is generally the case with hill tribes:—their usual drink is a fermented liquor made from rice called *month*; this, however, is far inferior to that of the Singphos, which is really a pleasant drink.

Religion. Of their religion I could get no satisfactory information:—every thing is ascribed to supernatural agency. Their invocations to their deity are frequent, and seem generally to be made with the view of filling their own stomachs with animal food. They live in a very promiscuous manner, one hundred being occasionally accommodated in a single house. Their laws appear to be simple,—all grave crimes being judged by an assembly of Gams, who are on such occasions summoned from considerable distances. All crimes, including murder, are punished by fines; but if the amount is not forthcoming, the offender is cut up by the company assembled. But the crime of adultery, provided it be committed against the consent of the husband, is punished by death; and this severity may perhaps be necessary if we take into account the way in which they live.

The men always go armed with knives, Lama swords, or Singpho *dhaos* and lances; and most of them carry cross-bows—the arrows for these are short, made of bamboo, and on all serious occasions are invariably poisoned with *bee*. When on fighting expeditions, they use shields, made of leather, which are covered towards the centre with the quills of the porcupine. Their lances are made use only for thrusting: the shafts are made either from the wood of the lawn (*Caryota ureas*) or that of another species of palma *juce*—they are tipped with an iron spike, and are of great use in the ascent of hills.

The lance heads are of their own manufacture and of very soft iron. They have latterly become acquainted with fire-arms, and the chiefs have mostly each a firelock of *Lama* construction.

Their implements of husbandry are very few and rude. They have no metal utensils of their own manufacture,—all their cooking being carried on in square capacious stone vessels, which answer their purpose very well. The population is certainly scanty, and may be estimated as follows:—

Jingsha,	50
Tapan,	80
Deeling and Yeu,	80
Ghalooms,	80
Khasha,	100
Primsong,	70
	460

This must be considered as a rough estimate, and probably is considerably exaggerated.

The number of villages among which the above population is distributed is seven, but it must be remembered that there are two other villages, namely, *Meerisao* and *Rulings*, close to the *Khashas*. By far the greater number of villages appear to be located near the banks of the *Lohit*; I saw only one situated on the *Leeng*; while on the summits of *Thumathaya*, the villages *Jingsha*, *Tapan*, *Deeling* and *Yeu* consist of several houses, none, however, exceeding ten in number; and *GHALOOM'S*, *KHASHA'S* and *PRIMSONG'S* consist each of a single house. The houses in the former case resemble a good deal those of the *Singphos*, and are of variable size; in the latter case the house is of enormous length, this depending on the rank of the possessor, and capable of accommodating from eighty to one hundred and sixty persons,—all are built on *machauns*, constructed almost entirely with bamboo, divided into compartments and thatched with the leaf of a marontaceous plant (arrow-root family) likewise found in *Assam*; this being again covered, at least in some instances, with the leaves of a species of *ratan*. The leaf of the former answers its purpose admirably both as to neatness and durability, and forms an excellent protection against the rain. *KHASHA'S* house is certainly one hundred and sixty feet in length; it is divided into twenty apartments, all of which open into a passage: generally it would appear on the right side of the house as one enters, along which the skulls and jawbones of the various cattle killed during the possessor's life time are arranged. In each apartment there is a square fire-place, consisting merely of earth,

about which the bamboos are cut away. As no exit for the smoke is allowed, the air of the interior is dense and oppressive, and often exceedingly painful to the eyes.

Domestic animals. Their live-stock consist chiefly of hogs, *mathoons*, a noble animal intermediate between the bull and buffalo, and fowls. Of these the hogs are the most common—they are easily procurable; but they are not at all disposed to part with the fowls, which they say is the favorite food of the deity. I was hence frequently reduced to eat pork, which seemed to me, no doubt, on account of its vile feeding, very unwholesome. On my arrival at each village a hog was killed as a matter of course, of which a portion was presented to me, and a portion to my people. In one case only a young mathoon was killed; in all these cases, the flesh is immediately cut up and devoured as soon as possible. Their cooking is very rude, chiefly consisting of minces. Chowrie-tailed cows are only to be met with farther in the interior.

Their dogs are of the ordinary pariah kind. Cats are uncommon.

Among the skulls ranged in their houses, those of several other kinds of cattle occur, including the cows of the plains, and the buffalo; the remainder are procured entirely from *Lama*.

Cultivation. Their cultivation is scanty, apparently not sufficient to supply even their wants, and carried on in a very rude way. The most favorable places are of course selected, either on the slopes of the hills or on the occasionally more level patches, and joining the *Lohit*. The soil in almost all cases consists of a thin superstratum of vegetable mould. Some of the villages are in possession of a good sort of hill rice, but the chief cultivation is of *bobasá**, *goomdan†* or Indian corn, *khonee‡* and two or three still inferior grains. The villages situated at low elevations produce excellent yams and *aloos* of several kinds. They are unacquainted with wheat, barley, &c.; nor have they even taken the trouble to obtain potatoes. The capability of the country up to the point to which I searched, is not great, but thence the landscape is at once sufficient to convince one that the improvement is rapid as one proceeds to the eastward.

Of *kanee* a small quantity is cultivated, chiefly however for sale to the Singphos, although many of the natives are great opium eaters. They cultivate a sufficient quantity of cotton for the manufacture of their own clothing, but it seems to be of inferior quality. Tobacco is in great request, still it does not seem to be regularly cultivated. Both sexes, young and old, are determined smokers; their pipes are

* *Elentine caracana*.

† *Tea woy*s.

‡ *Davaee* sp.

chiefly of Singpho manufacture; the poor classes contenting themselves with those made from bamboo.

Granaries. I should have mentioned that the produce of their fields is kept in small granaries, at some distance from their houses: and it is a regulation calculated to prevent quarrels, that each wife, (for they tolerate polygamy,) has her distinct granary. Their bridges have been well described by Captain WILCOX;—the passage of that at GHALOOM's which is full seventy yards in length, occupying from two to two and half minutes. The articles in the greatest request among them are salt, woollen clothing, printed cottons, and glass beads of various colors. Of the existence of salt, within their own boundaries they are unaware: generally they have none. Occasionally they procure Lama rock salt, which is (in bulk) of a reddish color, from being mixed up with a red earthy substance somewhat aromatic. For these they exchange cloths of their own making, and their three staple articles, *mishmee-teeta*, *bee*, and *geitheoon*, which are, in fact, at present the only valuable known products of the country.

With *Lama* they carry on an annual trade, which apparently takes place on the borders of either country. In this case *mishmee-teeta*, is the staple article of the Mishmees, and for it they obtain *dhaos* or straight long swords of excellent metal and often of great length; copper pots of strong, but rough make, flints and steel, or rather steel alone, which are really very neat and good; warm woollen caps, coarse loose parti-colored woollen cloths, huge glass beads, generally white or blue, various kind of cattle, in which *Lama* is represented as abounding, and salts. I cannot say whether the Lamas furnish flints with the steel implements for striking light; the stone generally used for this purpose by the Mishmees is the nodular production from *Thumathaya*,—and this, although rather frangible, answers its purpose very well; with the Singphos they barter elephant's teeth, these animals being found in the lower ranges, for slaves, dhaws, and buffaloes.

With the Khamtees they appear to have little trade, although there is a route to the proper country of this people along the *Ghaloom Púnee*, or *Ghaloom Thee* of WILCOX's chart; this route is, from the great height of the hills to be crossed, only available during the hot months.

With the inhabitants of the plains they carry on an annual trade, which is now renewed after an interruption of two years, exchanging cloths, Lama swords, spears, *mishmee-teeta*, *bee*, which is in very great request, and *gertheana* much esteemed by the natives for its peculiar and rather pleasant smell, for money (to which they begin to

attach great value), cloths, salt and beads : when a sufficient sum of money is procured, they lay it out in buffaloes and the country cattle.

Political relations. With reference to their political relations they were all—at least all those near our frontier—active supporters of the Dupha Gam, to whom they rendered very effectual assistance in the erection of stockades, although they declined fighting. Formerly the Rája of *Assam* exercised almost exclusive control over them, entirely, as it appears, from making their most influential chiefs trifling annual presents of one or two buffaloes. With our government their intercourse has, as I before mentioned, been entirely interrupted during the last two years ; at present, however, they appear inclined to pay all proper respect to the Assamese authorities. From the active assistance they rendered Dupha Gam, and in the second instance to put an impediment in the way of the trade of slaves, it is obviously of importance to keep them in this friendly state, and this would be best done by adopting the plan followed during the times of the Rájas of this portion of *Assam* ; and with this view I would beg to direct your attention to GHALOOM, KHOSHA, and PRIMSONG : of these three, KHOSHA is perhaps possessed of the greatest influence, but he is getting old and inactive. The same may be said of GHALOOM, his younger brother. The most active, ambitious, and enterprising man is certainly PRIMSONG, who is still young ; and as he evidently looks up to the possession of the chief authority among the Gams, any favor shewn to him would render him a steady friend. He is the only chief I saw who is in the habit of visiting *Lama*. It was from materials given by him that Captain WILCOX drew up that portion of his map which has reference to the course of the *Lohit*, and it is through him alone that we may look forward to becoming acquainted with the country of the Lamas. He is, in fact, far superior to all the rest in talents and information, and, as a proof of his activity, he has just returned from the *Hookum* territory, where he saw Captain HANNAY, and whither he had no doubt followed the Dupha Gam. So long indeed as the Mishmees are in relation with the Singphos, so long will there be a ready way in which to dispose of slaves by the Singphos, a people on whom no dependence is to be placed. At the period of my visit to KHASHA, I saw a slave who had been actually sold by Singphos residing within our territory, within the last six months. With the *Dibong* Mishmees they are, and always have been, engaged in a war of extermination. Of this tribe, both Mooghoos and Digaroos entertain the greatest fear : their inroads have caused the latter tribes to forsake their haunts on the *Digaroo* mountains, and I am told that

at this time none are to be found to the westward of the *Tid-ding*. With the Lamas, as I have before observed, they are at present at rupture; and protection might be promised them against the inroads of either people, such protection being chiefly limited to the loan of old muskets and ammunition. It is chiefly owing to their proximity to the Lamas, that the country of the Mishmees, as being the most feasible route thither in this direction, is worthy of attention. It is obvious from all accounts that the Lamas are a very superior race, and that they greatly resemble the Chinese. It would hence be highly desirable to open a trade between *Upper Assam* and *Lama*, and to this I really see no insurmountable objection. The great object to be first attained is personal communication with these people, and I have every reason to believe that through the influence and aid of PRIMSONG, who is well acquainted with them, that I should be able to accomplish this. On this subject, however, I have already addressed you officially.—PRIMSONG, in the event of the non-consent of the other chiefs, has promised to take the responsibility on himself, and as the route he has promised to take me leads across the termination of the *Himálayas*, and ends in some distance from the southern extremity of the valley, in which the inhabitants of this portion of *Lama* reside, he could necessarily act independently of them; almost all the Meyhoo chiefs, from whom the chief opposition is to be apprehended, being located along the *Lohit* to the westward of the junction of the *Ghaloom Pánee*. Having once gained access to the valley, a return could be effected along the banks of the *Lohit*, so as to materially increase our knowledge of that river. From my knowledge of the Mishmees I am confident that the slightest care would ensure me from any attempts at treachery. Open hostilities they would never attempt, and as there would be no crossing of any considerable river, no attempts could be made, as they, the Meyhoos, appear to have intended in Captain WILCOX's instance, on the party when subdivided. The hasty retreat of this officer has been attended with unfortunate results in increasing the fear which the Digaroos entertain for the Meyhoos.

With reference to my making the attempt, I can only say that sixty maunds of rice are already lodged within the hills, and my orders are only necessary to cause its transportation to the villages of KHOSHA, GHALOOM, and PRIMSONG. Thus one great obstacle in all hill expeditions is already removed. PRIMSONG has engaged to provide me with men for the transports of my carriage and the necessary presents; thus I shall run but little risk from detention owing to the sickness or laziness of coolies. In short, the only thing likely to interrupt my

progress will be sickness ; but having once reached PRIMSONG's, safety would be perhaps insured. I speak here in allusion to the season, the route being, from the great height of the mountains to be crossed, only practicable during the rains. I shall close this portion of my letter with a few remarks on the Lamas, for which I am indebted to PRIMSONG. He describes them as resembling the Chinese, whose peculiar manner of wearing their hair they adopt ; the country is very populous, the houses well built, and the people are well supplied with grain, the staple one being rice. They are of a large stature, well clothed, wearing Chinese trousers and shoes, navigating their rivers by means of boats, and using horses, of which they possess three varieties, as beasts of burthen. They possess in addition, no less than seven kinds of cattle. They distil ardent spirits, and their manufactures, which are numerous, are said to be very superior.

On my arrival at *Jingsha*, I determined on crossing the country towards *Beesa*, having heard that tea existed in this direction. Leaving *Jingsha*, I proceeded up the *Karan* to the east, thence diverging to the south along the now nearly dry bed of the *Kamplee*. During the march I passed one small Singpho village, and in the evening arrived at *Onsa*, the largest Singpho village I ever saw. On the following day I left for *Suttoon*, and after a march of three hours halted beyond *Suttoon* close to the head of the *Tenga Pánee*. From this, on the following day, I proceeded crossing the *Tenga Pánee*, the course of which I followed for some distance, thence diverging to the S. W. towards the *Minaboom* range through excessively heavy bamboo jungle. On reaching the *Muttock Pánee* I ascended its dry bed for some distance until we reached the hills. This range, along which I proceeded some distance, is entirely sandstone, and in no part exceeds five hundred feet in height ; thence descended and arrived at the *Meerep Pánee*, in the bed of which we halted. The next day carried me after a long march to *Beesa*, the course first laying down the *Meerep Pánee*, thence to the westward and through a very low and uninteresting and nearly uninhabited country. We emerged from the jungle about a mile and a half above *Beesa*, to which place our course lay along the nearly dry bed of the formerly larger now small *Dihing*. This river, which up to last year drained a great portion of the Singpho country on this side of the *Patkaye* range, is now nearly dry, its waters having taken a new course into the *Kamroop*, and thence into the *Booree Dihing*. It is now only navigable for small boats as far as the *Degaloo Goham's* village, which is but a short distance from its mouth.

The valley occupied by the *Khakoo* Singphos, which I had thus crossed, is bounded to the N. E. by the *Mishmee* mountains, and to the S. W. by the *Mimboom* range ; it is of a triangular form, and not of any great extent : it is drained by the *Tenga Pánee*. The whole valley is comparatively high, and may be considered as a low table land : it is incomparably the finest part of our territory inhabited by Singphos, that I have yet seen : between *Itusa* and *Luttora*, I passed, although it was a short march, five large villages ; and whatever the case may be with the other portions of our Singpho territory, this valley is very populous and highly flourishing. *Luttora* is a village of no great size : formerly Luttora Gam was the chief of the whole valley, but his followers, since the affair of the Dupha Gam, have divided themselves between *Itusa* and *Ittanshantan* Gams who are friendly to our Government.

From *Itusa* Gam I met great attention ; from *Luttora* Gam, until lately an avowed enemy to our Government, I received a visit, being the first he ever paid to any officer. He made the usual professions of submission ; but on my telling him that he should send in his submission to the officers at *Sadiyá*, he replied very quietly, that he must first communicate with the Dupha Gam. (Latterly I understand that he has sent his submission in to the Political Agent.) He was attended with a considerable number of men armed with lances and *dhaos*. He is a large, ruffianly-looking man, nearly blind, and for a Singpho very dirty. He was attended with an adherent of the Dupha Gam, who had just returned from *Hookum*. This man descanted on the general satisfaction given to the chiefs about *Hookum* by the presents of Captain HANNAY, and he said that all the chiefs had agreed to bury the remembrance of all former feuds in oblivion.

The chief cultivation of the valley is that of *ahoo dhan*, the fields of which are numerous and extensive.

The manners of the *Khakhoos* are the same as those of the other Singphos ; they are represented, however, as excelling these in treachery and cruelty. I met with no opposition on the journey, although I was attended by only sixteen Donaniers ; and although, as I have since ascertained, my adoption of this route caused great offence to the chiefs, one of whom sent a letter of remonstrance to the officers at *Sadiyá*. They have a great number of Assamese slaves, and there is but little doubt that the practice of slave-selling still exists among them. In fact a Donanier from *Chykwás* was actually obliged to place himself under my protection. None of the villages are stockaded. *Luttora* is on a strong site, being built on a steep eminence nearly surrounded by two

small streams; and as the ascent is steep, although not great, it is difficult of access, and might be well defended.

I gained no clue to the actual existence of the tea, although the yellow soil was not unfrequent towards the head of the *Tenga Pánee*. The *Minaboom* range, as I have above observed, is of no considerable height; it is covered with tree jungle, among which occurs a species of *dammai*, *amagnolea*, and one or two species of oak.

On arriving at *Beesa* I heard that Mr. BRUCE was at *Fingree*, and as that gentleman had previously expressed a wish that I should give my opinion on his mode of tea culture, I immediately determined on proceeding thither: with this view I left for *Rapoo*, which I reached in two ordinary marches. There visited the tea, and then left for *Rapoodoo*. Here also I visited the tea, which is abundant, appearing to me the best of that produced in the Singpho territory;—the soil is precisely the same, in all its external characters, as that of the other tea localities.

The tea plant being certainly adapted to some degree of shade, the free exposure to the sun seems wrong in principle, evidently producing a degree of coarseness in the leaves, totally incompatible, I presume, with the production of fine flavored teas.

From this place I proceeded through heavy jungle, uninhabited except by elephants, for two days, literally cutting my way where the tracks of the elephants were not available owing to their direction. Our course being determined by that of the *Dibora*, on the evening of the second day we arrived at *Choakree Ting* in the *Muttock* country, and halted on the *Rolea Pánee*. The third day, after a very long march of nearly twenty miles, carried me close to *Ranga gurrah*. On reaching this I found that Major WHITE was expected daily, but that Mr. BRUCE had already returned to *Sadiyá*.

I had the pleasure of accompanying Major WHITE three days after my arrival to *Tingree*, from which place we returned direct to *Sadiyá*, the march occupying three days.

The greater part of *Muttock* which I had thus an opportunity of seeing may be characterised as capable of producing tea, the soil being in almost every instance of that yellow color, hitherto found to be so characteristic of the tea localities. To this the only exceptions exist in the swampy ravines, which are occasionally of great extent. The better portions consist of rather high plains, covered with tall coarse grasses, and intersected here and there with narrow strips of jungle. It may be considered as a comparatively open country;—the villages are numerous, and the people satisfied. Altogether *Muttock*

may be considered as a well-governed flourishing district. But on this point I need not detain you, as the nature of the district is sufficiently well known.

The villages passed between *Beesa* and *Muttock* are few; the first is a small temporary village occupied by Nagas, about ten miles from *Beesa*. The next is *Dhompson*, a large Singpho village, half way between the Naga village, and *Rapoo*, *Rusoo*; and, lastly, *Rupádoo*. Between this and *Choakri Ting* no villages occur.

II.—*Corrected Estimate of the risk of life to Civil Servants of the Bengal Presidency.* By H. T. PRINSEP, Esq. Sec. to Govt. &c.

In the number of this Journal for July, 1832, some Tables were published showing the risk of life amongst Civil Servants on the Bengal Establishment, and in a short article the principles were explained upon which the tables had been framed. The method adopted in that article for computing the risks of life in the Civil Service of the Bengal Presidency has met the entire approbation of the most able actuaries in England, and the tables have not only been adopted as affording the best estimate forthcoming of the chances of life amongst persons in good circumstances in the climate of India, but attempts have likewise been made to apply the same method of computation to other services. Amongst others, Mr. CURNIN has, we understand, successfully computed tables framed on the same principles for the Military Services of all the three Presidencies of India, from the year 1765 to the present date,—a work of immense labour, the results of which we have seen in abstract, and lament that the publication of them has been so long delayed. As our Civil Service tables have thus acquired an importance, as well from the use made of them by insurance offices, as from the application of the principle to the construction of other tables, we have deemed it necessary, now that another lustrum of five years has passed since they were framed, to republish them, completed to the close of 1836, and to draw attention a second time to the method adopted in their construction. We will not conceal that a principal motive with us for taking this trouble is that we have discovered some errors in the Tables of 1832, and therefore are anxious to supercede it for practical use by supplying one more accurate. We are glad also to avail ourselves of the opportunity to point the attention of public officers and persons of intelligence at other Presidencies to the expediency of keeping registers and framing similar tables for the different services with which they may be con-

nected. In a very valuable paper drawn up by Mr. GRIFFITH DAVIES for the Bombay Civil Fund, a form of register is given, which, if duly kept, will afford the means of constructing accurate tables for any purposes framed precisely upon our principle, and this table may be adopted for a regiment or for any number of persons circumstanced alike—that is, when in a condition to yield a fair average of casualties, just as well as for a service constituted like the Civil Services of the different Presidencies. The only thing to be attended to is, that in like manner as a separate page in the service registers ought to be set apart for the nominations of Civil Servants for each year, because, for facility of computation, we assume them to be of persons of the same average age, so a separate page must be assigned to persons of the same age when the register is formed for the purpose of obtaining the risks of life amongst persons promiscuously selected, and not of uniform or nearly corresponding ages.

As it is of importance that this should be well understood, and because we wish to inculcate the expediency of framing tables of the same kind not only for his Majesty's and for the Native regiments, but likewise for the natives of cities and towns in different parts of India, we shall devote a few words to a little further explanation of the registers we recommend to be kept. The following is the form into which any number of names upon which it is desired to obtain life results of any kind may be entered, taking care only, as before pointed out, that those entered in the same page are always of the same age at the time of first registry.

Page 14.

Age 23.	1st year.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	&c.
A. ..	1	1	1	1	1	1*					
B. ..	1	1	1	1	1	$\frac{1}{2}$ died.					
C. ..	1	1	1	1	1 mar.	1	1 one son.	1	1	1	
D. ..	1	1	$\frac{1}{2}$ died.								
	4	4	$3\frac{1}{2}$	3	3	$2\frac{1}{2}$	1	1	1	1	

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Age 25.											
E. ..	1	1	$\frac{1}{2}$ died.								
F. ..	1	1	1	1	$\frac{1}{2}\dagger$						
G. ..	1	1	1	1	1	1	1	1	1	1	
H. ..	1	1	1	1	1	1	1	1	1	1	
	4	4	$3\frac{1}{2}$	3	$2\frac{1}{2}$	2	2	2	2	2	

Now if one hundred names of soldiers were entered in the first column as having come into the country at the age of 23, though every one of them came, perhaps in a different year, still the register for as many years as it may extend in respect to these persons,

* Discharged.

† Returned to England.

giving in each the fact of the individual having outlived that year or not, or any other circumstance or event, must afford the means of computing the different accidents of life for every age that may be reached by the persons so registered, and the results of one page may be combined with those of any other by adding the sum at the bottom of the page to the proper column with reference to age of such other page, and by taking out of the whole the number of deaths or of marriages or of the births of children, male or female, or of any other accident of life that may be recorded in the column to compare with the sum of the lives of the age in both pages or of as many pages as may be brought into the computation.

We presume that every insurance office keeps registers framed upon this principle, but we wish to see them extended to the Army and likewise to some thousands of natives in towns and in the interior, with a view to obtaining the materials for computing the risks and accidents of life amongst these classes at different ages, in respect to which we are at present without any materials for framing a table or estimate of any kind.

The tables given in Captain HENDERSON's article upon the subject of the value of life in India, published in the last volume of the *Researches of the Asiatic Society*, though framed with great labour, are defective in this point*. They afford general averages of the value of life amongst certain classes, but not of the value of life at each year of age, which is a most essential circumstance; and for insurance offices or for institutions which deal in annuities, the risks with reference to age are the main and most important, if not the only, matter for consideration.

It is to be observed that it will not be possible to frame registers retrospectively for any class of persons, unless from peculiar circumstances a given number of names with the age of each individual can be entered for any specific past date, and these can be followed out in all their circumstances to the date of the formation of the registers. This is the principle upon which the previous and present tables have been framed for the Bengal Civil Service, and upon which similar tables have been made for the Army. The nominations of each year to the different services being fixed and known, and the

* Capt. DEHAVILAND's tables for the Madras army are an exception to this remark, as they are framed by years of service on our principle, but the results of the first years of the series give ratios of deaths for those years which cast a doubt on the accuracy of the whole table. Mr. GORDON's army table is of too old a date to be useful.

power existing of tracing almost every nominee, the registers have been made up for past years as completely and accurately as if the nominees of the present year were to be followed prospectively through their career of service to the time of their deaths or retirements. The same principle may perhaps be adopted in framing regimental registers retrospectively for privates and non-commissioned officers, because each individual can similarly be traced, and his age at the time of enlistment or of arrival in India will be on the regimental rolls; but no materials will be any where forthcoming from which to do the same for any class of natives, unless it be for the tenants of the different jails during the period of their confinement for debt or under criminal sentences.

Having premised the above remarks on the general applicability of the method of computation adopted for ascertainment of the risks of life amongst Bengal Civil Servants, it remains to give the amended table, framed from the registers prepared in the Secretary's office at Calcutta for the Bengal Service from 1790 to 1836. The number of individuals of the class whose names are registered, and who have given to our table a first year of life, is now very nearly 1000*, and the average of the first five years is consequently framed on a total of 4525 lives. To the end of the 20th year the number of annual lives now exceeds 300, and the five years' averages are upon numbers exceeding two thousand; the yearly numbers diminish to 100 at the end of the 30th year, only affording for the five years' average of that period of life as many as 660 lives. For the succeeding five years the average is reduced to actual casualties upon 299 lives, and after that the numbers are too small to afford any data that can be relied upon.

To the corrected estimate now given of the risks of life in the Bengal Civil Service, we have added a column for retirements, in order that the curious in Europe may build ingenious speculations thereupon. It is mortifying to observe that the total number of these

* The registered nominations are 1003, but this includes the nominees of 1836 who have not yet given us a first year of life. The following test of the accuracy of our table may be satisfactory.

Nominees from 1790 to 31st Dec. 1836,	1003
Deaths of table,	335
Deaths in year of nomination, not included in the table, ..	8
Retirements as in table,	177
	520
Remains on the Civil List 1st January, 1837, deducting the	
China Servants,	483

does not equal one half of the deaths, but this statement we would remark is not framed to show the chance an individual entering the Bengal Civil Service has of retiring with a fortune. For the exhibition of that result a very different table must be prepared, framed on the principle of following out the nominations of those particular years of which all the nominees are expended by death or retirement. There are four years in this predicament, the results of which give the following ratios of deaths to retirements.

Nominations.	Deaths.		Retirements.	
	Before 20th year.	In or after 20th year.	Before 20th year.	In or after 20th year.
1790 19	8	3	2	6
1792 18	5	2	2	9
1794 26	12	6	5	4
1798 32	8	8	6	10
95	33	18	15	29
	51		44	

From this it would appear that out of ninety-five Bengal nominations the deaths are 51, or more than half; the retirements are 44, of which 15 occurring before the 20th year cannot be considered as retirements with fortunes made in India. Twenty-nine, however, out of 95, or somewhat less than one-third, is the proportion of retirements with fortune afforded by the results of these four years.

To return, however, to the life tables: we have not thought it worth while to publish on this occasion the extended tables in which the results of each individual year have been combined for the formation of the corrected general result now exhibited. These exist together with elaborate registers with the name of every Bengal Civil Servant inscribed ready to be referred to by any person desirous of looking further into the detail. We explained fully in the article of July, 1832, the method we had followed in extracting and combining these results, and it would be an unnecessary repetition therefore to follow the process of computation again through each of the stages. We conclude with expressing our desire that the present table may supercede altogether Table III. of the article of July, 1832, and we vouch for its superior and, we believe, perfect accuracy. The quinquennial percentage is carried only to the thirteenth year of residence or 49th of life. The results of the remaining years are gathered into our percentage for the whole.

Amended Table for shewing the risks of life in the Bengal Civil Service, founded on the actual casualties upon the nominations made to that Service from 1790 to 1836, the first year being computed from the 1st January, after the year of nomination.

Year of Service.	Age.	Number of Servants.	Deaths.	Total deaths in 5 years.	Percentage rate of deaths in 10,000.	Retirements actual.
1	20	4525	975	90	199	2
2	21		933 $\frac{1}{2}$			3
3	22		906 $\frac{1}{2}$			7
4	23		874 $\frac{1}{2}$			5
5	24		835 $\frac{1}{2}$			7
6	25	3454 $\frac{1}{2}$	790 $\frac{1}{2}$	72	208	7
7	26		754			4
8	27		694 $\frac{1}{2}$			3
9	28		638			4
10	29		577 $\frac{1}{2}$			3
11	30	2469 $\frac{1}{2}$	545	41	166	2
12	31		519 $\frac{1}{2}$			1
13	32		489			2
14	33		463			6
15	34		448			2
16	35	1879	424	44	234	6
17	36		403			2
18	37		376 $\frac{1}{2}$			7
19	38		351			2
20	39		324 $\frac{1}{2}$			7
21	40	1214 $\frac{1}{2}$	293 $\frac{1}{2}$	43	354	9
22	41		270			6
23	42		239			6
24	43		216			2
25	44		196			10
26	45	660 $\frac{1}{2}$	167 $\frac{1}{2}$	24	363	9
27	46		148			8
28	47		129			8
29	48		114 $\frac{1}{2}$			1
30	49		101 $\frac{1}{2}$			5
31	50	299	88 $\frac{1}{2}$	21	486	9
32	51		67 $\frac{1}{2}$			5
33	52		57 $\frac{1}{2}$			5
34	53		47 $\frac{1}{2}$			1
35	54		38			0
			16			
36	55	109	32 $\frac{1}{2}$	21	486	1
37	56		24 $\frac{1}{2}$			5
38	57		19 $\frac{1}{2}$			1
39	58		17 $\frac{1}{2}$			1
40	59		15			0
			3			
41	60	25	9	3		2
42	61		5			0
43	62		5			0
44	63		3			0
45	64		3			0
			1			
			0			

III.—*A Grammar of the Sindhí language, dedicated to the Right Honorable Sir ROBERT GRANT, Governor of Bombay. By W. H. WATHEN, Esq.*

It has been often paradoxically asserted, that those who have the most to do, contrive also to have the most leisure. The maxim will admit of as easy illustration in India as elsewhere, and may be supported by the highest examples, if it be conceded that the office of Secretary, or Minister, to an Indian Government requires a full allotment of time, an ample share of mental and mechanical exertion; for the Secretariat of either Presidency may be regarded as the fountain head of authorship on all Indian subjects, literary, political or historical. We need not recapitulate digests of law, Hindu and Musulmán; narratives of campaigns; schemes of fiscal administration, which may naturally enough emanate from such sources; but in pure literature, editorship of oriental publications, and translations therefrom, our Secretaries have ever occupied the foremost rank.

The present production of the Chief Secretary at Bombay is only a fresh instance of the talent and industry which in India is sure to win the reward of high appointment; but it is deserving of more than usual encomium, being a work of sheer labour and troublesome compilation, unsweetened with the associations of the annalist depicting events on which the fate of empires rested;—unenlivened by the ingenuities of antiquarian speculation or the romance of mythologic fiction. His has been a dry labour of utility, not of love, “to facilitate the intercourse of Europeans with the inhabitants of *Sindh* and the adventurous merchants of *Shikárpur* and *Múltán*.” It is a sequel to the famous Indus-navigation treaty;—one better calculated to effect a mutual understanding than the diplomatist’s negotiation with its uncompromising tariff! That it serves as a faithful interpreter, we have at this moment the best testimony to offer in a letter from an officer now travelling on the *Indus*, who says, “The Sindhí grammar does not contain a mistake, and I have never found myself at a loss, with a knowledge of its contents.” It may seem extraordinary that such a work should have been wholly compiled at a distance from, and by one who has, we believe, never visited, the country; but this is explained by the constant resort of the Sindhís to *Bombay*, where for the last 20 or 30 years at least 10,000 persons, the greater part of the population of *Tutta*, have become domiciled, speaking and writing their own tongue.

The Sindhí language is spoken “through the whole province of *Sindh*, and is said to be understood as far north as the territories of

BAHA'WAL KHÁN, the *Deráját*, and *Múltán*; it prevails westward in *Cutch-Gandava*, *Shál*, *Mastúng* and *Pishín*; eastward in *Cutch* it is spoken with some slight variations in formation and accent."

May we not venture to extend these boundaries, if not of the precise idiom, at least of the connected dialects of the *Sindhi* language?—Have not the words *Sindhi* and *Hindi* a common origin, the permutation of the *h* and *s* being nothing more in fact than the same difference of dialect which is preserved to this in the twin names of the river, *Sinde* and *Indus*? This at least is one of the most plausible theories of the origin of the name of India, and it is supported by innumerable examples of Zend and Persian words, in which the aspirate has taken the place of the Sanscrit sibilant.

The commercial celebrity of the Hindus in all ages attaches with undiminished force to the *Sindh* and *Márwár* merchant of the present day. They have their branch *kothís* not only throughout Upper India, but in *Calcutta*, *Bombay*, and wherever commerce is active. Theirs may be said to be the very language and archetype of hoondie circulation—the monopoly of banking business throughout the country. "The adventurous nations of *Shikárpur* and *Múltán* are spread in colonies throughout the whole of the extensive provinces of Central Asia, and form the chief medium for commercial transactions in those countries. They are to be found in *Russia*, at *Astrakhán*, through *Baluchistán* and *Seistán*, as well as at *Hirát*, and *Bokhára*: they possess political influence occasionally with the chiefs of those countries, from their command of capital, and their frequently taking farms of the revenues. Travellers starting from *Shikárpur* or *Múltán* (add *Bombay*, *Calcutta*, or *Benares*) might from them obtain bills of exchange on *Russia*, *Persia*, *Khorásán*, and Central Asia."

The neighbouring province of *Gujerat* is equally celebrated for its early commercial enterprize. We learn from HAMILTON, that the numerous tribes of *banyas*, named banyans by the English, are indigenous to this part of India, whence they have travelled to all parts of the continent, and formed settlements, "where their descendants continue to speak and write the *Gujerátí* tongue, which may be pronounced the grand mercantile language of Indian marts*."

For the foreign commerce of India the mouths of the *Indus* probably held long precedence to *Gujerat*, *Cambay*, and *Baroach*, the *Barugaza* of ARRIAN, which, more distant from Arabia and the Persian Gulph, would require a more advanced knowledge and boldness of navigation. Indeed it is a curious fact, that *Pátala*, the seaport on

* HAMILTON'S Hindostan, I. 612.

the *Indus*, still famous in ALEXANDER's time, should no longer be mentioned by the author of the *Periplus*, in whose time *Minagara* (*Mahá Nagar* ?) had become the capital of the country.

Pátala, in further support of our argument that *Sindh* was one focus of *Indian* civilization and colonization, is accounted by the Hindus the seat of government of the very founder of the Solar races, the Rajpúts of modern India ; Mr. CSOMA KÖRÖS extracts the following particulars regarding it from the Tibetan authorities.

“ *Potala* or *Potalaka* (Tib. གུ་རུ་ཐོ་ལྷ་ཁྱེ་ *gru-hdsin*, or vulgo *kru-dsin*, boat-receiver, a haven or port) is the name of an ancient city at the mouth of the *Indus* river, the residence of IXWÁKU and his descendants of the *Suryavamsa*. Four young princes (who afterwards were surnamed SHA'KYA) being banished from that city by their father, took refuge in *Kosala* on the banks of the *Bhagirathí* river (in the modern province of *Rohilkhand*) and built the city of *Capilavastu*. The residence of the Dalai Láma at *Lassa* (built about the middle of the 12th century) is likewise called *Potala*, ཐོ་ལྷ་ཁྱེ་, because CHEN-REZIK (ཡུན་པུ་ལྷ་ཁྱེ་ཐེག་པའི་བླ་མ་) the patron of the Tibetians, the spiritual son of AMITÁBHA, is said to have resided at *Potala* in ancient India, and to have visited *Tibet* from that place*.”

The Sindhian origin of the Rajpút tribes derives no inconsiderable support from the evidence of the grammar and vocabulary before us. Here we find the mass of the language (excluding of course the Persian infusion) merely a little different in spelling and inflexion from the *Brijbháká* or pure *Hindí* of Upper India ; while there is a strong argument that the *Sindhí* is the elder of the two, in the more regular and elaborate inflexions of its cases and tenses ; and particularly in the complete conjugation of the auxiliary verbs *huwan* and *thiyan*, to be, of which, in the *Hindí*, we find but a single tense of the latter†, and a few tenses and a present and past participle of the former, extant. Although we cannot attempt to enter upon a critical examination of the grammar, which would indeed require a knowledge of Sanskrit, and perhaps Zend in addition to the vernacular, we feel it impossible to resist inserting these two verbs, as well for the important part they enact in modern dialects, as for the philological interest of these almost universal auxiliaries, particularly in regard to the pronominal affixes, elsewhere become nearly obsolete. The infinitives, like the Persian and Sanskrit, terminate in *an*.

* CSOMA's MSS. See the Observations of M. BURNOUR in the preceding number, page 291.

† Or rather, none at all in the *Hindí* ; for *thá thé thí* belong to the *Hindu-sthání* or *Urdu*.

Conjugation of the Sindhi auxiliary verbs, to be.

Infinitive. <i>Ho-wan</i> (Sanskrit root भु.)		<i>T,hi-yan</i> (S. स्यात्, or बलि ?)	
Indicative.	S. 1. <i>Awn áhiyan</i>	I am.	Caret
1st Present.	2. <i>Tun áhin</i> 3. <i>Hu áhe</i> P. 1. <i>Asin áhiyun</i> 2. <i>Ain áhiyo</i> 3. <i>Hui áhin</i>		
2nd Present.	S. 1. <i>Huwán-t,ho</i> 2. <i>Huen-t,ho</i> 3. <i>Hoe-t,ho</i> P. 1. <i>Ho,un-thá</i> 2. <i>Ho,o-thá</i> 3. <i>Ho,wan-thá</i>	I am being.	<i>T,hiyán t,ho</i> (fem. <i>thí</i>) <i>T,hiyen t,ho</i> <i>T,hiye t,ho</i> <i>T,hiyun thá</i> <i>T,hiyo thá</i> <i>T,hiyan thá</i>
1st Imperfect.	S. 1. m. <i>Hos</i> fem. <i>Huís</i> 2. <i>Ho,en</i> <i>Hoen</i> 3. <i>Ho</i> <i>Hui</i> P. 1. <i>Hua sun</i> <i>Huyun sun</i> 2. <i>Hua</i> <i>Huyun</i> 3. <i>Hua</i> <i>Huyun</i>		m. <i>T,he thiyos</i> f. <i>T,he t,his</i> <i>T,he t,hiyen</i> <i>T,he t,hien</i> <i>T,he t,hiyo</i> <i>T,het,hí-i</i> <i>T,het,híya sun</i> <i>T,he thiyasun</i> <i>T,he t,hiya</i> <i>T,he thiya</i> <i>T,he t,hiya</i> <i>T,he thiyun</i>
2nd Imperfect.	1. <i>Hundo-hos, &c.</i> <i>Hundí huís</i> (m. Plural <i>Hundá</i>)		<i>T,hindo hos, &c.</i> <i>T,hindí husi</i> (masc. plur. <i>Thindá</i>)
Perfect.	Caret.		S. 1. <i>Thiyos</i> <i>Thús</i> 2. <i>Thiyen</i> <i>Thien</i> 3. <i>Thiyo</i> <i>Thíi</i> P. 1. <i>Thiya sun</i> <i>Thíi sun</i> 2. <i>Thiya</i> <i>Thiya</i> 3. <i>Thiya</i> <i>Thiyun</i>
Preterperfect.	Caret.		S. 1. <i>Thíyo áhiyán</i> <i>Thíi, &c.</i> 2. ——— <i>áhen</i> 3. ——— <i>áhe</i> P. 1. <i>Thíyá áhiyun</i> 2. ——— <i>áhuyo</i> 3. ——— <i>áhín</i>
Pluperfect.	Caret.		S. 1. <i>T,hiyo hos</i> <i>Thí huís</i> 2. ——— <i>hoen</i> ——— <i>huen</i> 3. ——— <i>ho</i> ——— <i>huí</i> P. 1. <i>Thíyá hasun</i> <i>Thíyun hasun</i> 2. ——— <i>huá</i> <i>Thíyá huá</i> 3. ——— <i>huá</i> <i>Thíyun huyun</i>
Future.	S. 1. <i>Hundos</i> 2. <i>Hunden</i> 3. <i>Hundo</i> P. 1. <i>Hundá sun</i> 2, 3. <i>Hundá</i>		<i>T,hindos</i> <i>Thindis</i> <i>T,hinden</i> <i>Thinden</i> <i>T,hindo</i> <i>Thindí</i> <i>T,hinda sun</i> <i>Thindí sun</i> <i>T,hinda</i> <i>Thindiyun</i>
Subjunctive.	3. <i>Hundá</i>		<i>T'hinda</i>
Present.	S. 1. <i>Huán</i> 2. <i>Hoen</i> 3. <i>Hoe</i> P. 1. <i>Ho,un</i> 2. <i>Ho,o</i> 3. <i>Hon</i>	I may be.	m. <i>Thindo hundos</i> ——— <i>den</i> ——— <i>do</i> <i>Thinda hunda sun</i> ——— <i>hundá</i> ——— <i>hundá</i>
Perfect.	by adding <i>je, if,</i> to the indicative.		S. 1. <i>Thíyo hundos</i> 2. ——— <i>den &c.</i>
Future.	I may, or will be.		S. 1. <i>Thíyan</i> P. 1. <i>Thíyun</i> 2. <i>Thíyen</i> 2. <i>Thíyo</i> 3. <i>Thíye</i> 3. <i>Thíyan</i>
Imperative.	S. 2. <i>Ho-tun</i> P. 2. <i>Howo-ain</i>		S. 2. <i>Thi-tun</i> P. 2. <i>Thíyo-ain</i>
Participle present.	<i>Hundar,</i>	being.	<i>T,hindar</i>
past.			<i>Thíyal</i>
perfect.		having been.	<i>Thí, Thái, Thí kare</i> <i>Thái kare</i>

In a similar manner is conjugated *Wanjan* (H. *jáná*) to go, used as the auxiliary of the passive of other verbs: *wendo*, going—*wayo* (H. *gayá*) gone: *wanj-tun*, go thou.

The personal pronouns *awan*, *tún*, and their plurals *asin*, *tawin*, approach nearly to the Sanskrit *aham*, *twam*; *asmán*, *yusmán* (obj.): but for the third personal pronouns, as in *Hindí*, the demonstratives *he* and *hu* (H. *yih* and *wuh*) are employed, in lieu of the Sanskrit *seh*, *sá*, *tat*; in *bháká*, sing. *सो, ता*; plur. *ते, तिन*. In the declensions of nouns we miss the *ka-ke-kí* to which *Tímur*'s soldiery professed such an abhorrence, but it is merely softened into *jo-jé-jí-já*. Of these, however, we find traces in the *Hindí* pronominal inflexions *mujhé*, *tujhé*, which seem to be identical with *mun-jo* and *to-jo* of the *Sindhi*. This affix may be the adjectival or possessive *य ya* of the Sanskrit: and analogies of both might be pointed out in Greek, as in the nearly synonymous *βασιλε-ια* and *βασιλι-κα*. One example of declension will suffice:—

	Singular.	Plural.
Nom. Acc. Voc.	Múrs, a man, oh man.	Múrs, men, oh men.
Gen.	Múrsa-jo-jí-jé-jí.	Múrsana-jo, &c.
Dat.	Múrsa-khe.	Múrsana-khe.
Abl.	Múrsa-khon.	Múrsana-khon.

When the nominative ends in the vowel *o* the plural is in *á*; the feminine takes *un* in the plural, as *zál* a woman, *zálun*.

We do not quarrel with the author for *romanizing* his grammar, as it is principally intended for European students; but we are inclined to cavil at the employment of the Persian alphabet in conjunction with the Roman rather than the *Nágarí*, which would certainly conform with more facility to the palatials, dentals, and aspirates of the Indian family: *बूकरी बिल्ली खाँ* expresses more elegantly as well as more precisely, *Buchhrí billí khon* (from a bad cat) than *بچھری بلی کھون*.

It is a curious circumstance that most of the masculine substantives and adjectives terminate in *ô*; a peculiarity also remarked in the *Zend* language, and strikingly exemplified on all the legends of our *Bactrian* and *Indo-Scythic* coins, whether in the Greek or in the *Pehleví* character. The extensive vocabulary attached to the grammar may therefore perhaps prove of use in decyphering these ancient relics; though more might be expected from a scrutiny of the language of the soi-disant descendants of the *Kaiánian* in the *Kohistán*. We recommend *M. Masson* to collect vocabularies from these people and from the *Siáhposhes*.

One of the most singular anomalies of the *Sindhi* language, is the arrangement of its alphabet, which differs totally from the perfect classification followed throughout the peninsula. The author makes

no remarks on the subject further than that “with one or two exceptions the letters are merely represented by ciphers, combinations of numbers, and fractional parts: for example ||| ($\frac{3}{4}$ ths) for *n*; 8 (4) for *ch*; &c. &c.!”

Having on a former occasion noticed the singular application of the Arabic numerals to the alphabet of the *Maldivé* islands, we were struck with the apparent similarity of the process here pointed out at the opposite extremity of India; but a closer examination removed most of the analogy by shewing that the *Sindhi* and *Múltáni* letters, although strikingly similar in form to the common numerals, were all deducible from the elements of the ordinary Deva-Nágarí symbols, and that they are, in fact, but one step removed from the *Márwári* and *Mehajani* of our mercantile class. This we have endeavoured to shew in the accompanying lithographic table (XXII.) (being always happy to add to our catalogue of Indian alphabets!). The *Márwári* (which does not differ essentially from the *Benárasí*) we have added on the authority of gomáshtas residing in *Calcutta*; but it must be remembered that these written characters are peculiar to the mercantile class, and that the learned of *Márwár* and *Sindh*, as of other places, use the Deva-Nágarí forms. As to the *arrangement* of their alphabet given by our author on the authority of merchants, it seems to be nothing more nor less than a couple of *memoria-technica* lines contrived to comprehend the whole of the letters combined with their most usual vowel sounds; so that in ordinary writing the merchants may dispense with the application of the *mátras* or vowel-marks. The inconvenience of this omission is not much felt in the limited scope of mercantile correspondence, and in the drafting of hoondees, where the same sentences are constantly repeated. Indeed the first memorial line of the *Sindhi* and *Múltáni* alphabets,

प ज स ल म त ह व ष ण भ इ ट क च द.

pronounced, *Puja salámatí howen ghani Bhai Tek Chand*, (with vowels) generally forms the opening (mutato nomine) of every mehajan's epistle, as may be seen in the example given by our author*. It may be translated “Prayer (or I pray) that health may be abundant to brother Téek Chand.” The continuation is as follows:

इ ब र न थ ड अ ढ ग य ङ ख व फ घ उ द.

pronounced, *chha ba ra náth ráe r̥h gajan khatri pha dhaú†*.

* The meaning of the specimen of hoondée endorsement lithographed at the foot of the plate is “one half (being) rupees twenty-five, double fifty, to be paid in full.”

† We have ventured to alter one or two of the letters conjecturally, which in the lithographed plate copied from the grammar, are repeated, while those we have substi-

Mārwārī Alphabet, with and without mātras

सि द नी ध न कि सु नी व नी न म र षा रु ध र
 सि द नी ध न कि सु नी व नी न म र षा रु ध र
 श्री पु ठि जा ङा ङा य उ ची र छे धा णि रु रू
 श्री पु ठि जा ङा ङा य उ ची र छे धा णि रु रू
 a i b th j d dh y u ch r chh th n jh ph

Sri datā dhan ko subhawe bāla mahi khago ghatāṅg
Ai puṭhaj dadhyu uchare chhuthān jhapang

Sindhī or Khudawadi Alphabet.

पु ज स ल म ति हो वें ख णि भा रू रे क चं द
 पु ज स ल म ति हो वें ख णि भा रू रे क चं द
 छ ब र ना थ र ओ ङ ग जू म ख त्रि फ डा उ
 chh b r n th r e dh g j n kh tr ph d u

Multānī or Sarāi Alphabet.

पु ज स ल म ति हो वें ख णि भा रू रे क चं द
 पु ज स ल म ति हो वें ख णि भा रू रे क चं द
 छ ब र ना थ र ओ ङ ग जू म ख त्रि फ डा उ
 chh b r n th r e dh g j n kh tr ph d u

Puja salāmatī horeñ ghani bhāi tēk chand
Chhābra nath rāedh gajānikhatripha dāu.

पु ज स ल म ति हो वें ख णि भा रू रे क चं द
 पु ज स ल म ति हो वें ख णि भा रू रे क चं द

Countersign of a Sindhī hūndī.

नि मे रु पि ये पांज्विह तेहिंजा बिना रुपिया पांजाह पूरा भारे देवना.
nime rupiye pañjwih tēhiñja bina rupiya pañjah pūrā bhare devnā.

This second line has probably a meaning also, but not a single word of it can be found in the vocabulary ; nor can the natives be persuaded to divulge it, whether from superstitious prejudice or from ignorance ; it may be merely a nonsense verse embodying the rest of the letters. CHABRANA'TH RAI sounds like a name or title.

The *Márwári* alphabet contains two poetical lines almost as unintelligible as those of *Sindh*. As written by our informant a gomáshta in one of the banking houses, and lithographed in Plate XXII. with the vowel marks, they abound in errors, nor could we obtain from him any inkling of their meaning. By dint of persevering inquiry, and aided by the Hindí and the Sanskrit dictionaries, we have restored what seems to be the right reading of the text as follows :

श्री दाता धनका सभाव बाल मोह खग घटं

आई पूठ जड दयो उचरो क्यण भफं

or in Roman characters, (differing from the version in the Plate,)

Srī dātá dhanko sabhāw, bāla moh khaga ghatang.

A'i pūtha, jar dhayo ; Uchari, chattan jhapang.

which, translated as literally as the idiom will allow, is

“Charity (1) of riches is the natural fruit ; to me boy, oh god, (2) may it be so.

Reading attained, ignorance is dispelled (3) ; by good enunciation (4), wisdom (5) instantly (6), (is attained).”

(1.) श्रीदाता masculine, a charitable man. धनको to wealth, सभाव is natural. (2.) खग, the sun, a deity, (WILSON'S Dict.) might lead to the supposition that the couplet was invented while the people were sun-worshippers ! घटं *ghatang*, may it happen. (3) दयो from ढाना to break down, destroy. (4) उचरो for उचार pronunciation, utterance. (5) क्यण a corruption from चेतन intelligence, wisdom. (6) भफं synonymous with भप *jhap*, instantaneously.

At the bottom of the same plate we have inserted the *Sindhi* alphabet as written by their gomáshtas in *Calcutta* ; because some of the letters vary from the *Bombay* form ; and both differ somewhat from a genuine *Sindhi* alphabet procured by Lieut. LERCH at *Mithyáni* on the *Indus*, which we did not receive in time to insert in the plate. The principal variations are in the aspirated letters *kh*, *gh*, *ph*, and *h* ; *j* and *y* are expressed by the same character, which is formed as number 2 of the *Máltáni* alphabet. The letter ढ is also expressed by ट which accounts for its absence in the memorial line.

Our author notices the curious custom of affixing certain numbers, ७४॥ or 74½ ; and १॥ or 1½ to the commencement of all hoondees and written documents, as not yet satisfactorily explained. Our readers

tuted are there omitted. We have been guided in doing so by the analogy of the forms of the letters to the *Négarí* elements.

will remember the rather whimsical definition of the first of the two symbols by Col. TOD, from a traditionary record of the $74\frac{1}{2}$ maunds of *zinárs* taken from the necks of the slaughtered Rájputs at AKBER's sack of *Chitor**. But, to say nothing of the far too modern date of introduction thus argued, and of its inapplicability to countries beyond the desert; a more general and simple origin may be traced for it in the mysterious invocation ॐ *Om*, prefixed by the orthodox to all documents. In the inscriptions published in Plates VII. and XVII. this word is written ॐ॥ which differs little from the ॐ॥ above. The triune symbol is often represented by ॐ alone, which with the prosodial mark ॥ would be read as "one and a half."

But we are devoting too much space to a subject of minor importance: nor is the alphabet new; for we find the type (at least of the *Múltáni* alphabet), have been long since cut and used at the *Serampore* press. We cannot conclude without making known a promise of a valuable addition to Mr. WATHEN's labours by Lieut. LEECH, in the shape of a *Balochy*, and *Baráhuí* vocabulary. We shall soon thus have at our command all the cognate dialects of India to place in the hands of some future giant philologist who may undertake to unravel the tangled skein, and shew which are the primitive tongues of the aborigines of our hills and plains, and whence and when came the infusions of foreign vocables which now predominate in Indian speech.

J. P.

IV.—On additional fossil species of the order QUADRUMANA from the *Sewálík Hills*. By H. FALCONER, Esq. M. D., and Captain P. T. CAUTLEY.

In the November number of the *Journal*, vol. 5, p. 739, Messrs. BAKER and DURAND have announced, in the discovery of a quadrumanous animal, one of the most interesting results that has followed on the researches into the fossil remains of the *Sewálík Hills*. The specimen which they have figured and described comprises the right half of the upper jaw, with the series of molars complete; and they infer that it belonged to a very large species. In the course of last rains we

* "Marked on the banker's letter in Rájasthan: it is the strongest of seals, for 'the sin of the slaughter of *Chitor*' is thereby invoked on all who violate a letter under the safeguard of this mysterious number."—*Tod's Rájasthan*, I. 329.

detected in our collection an *astragalus*, which we referred to a quadrumanous animal. The specimen is an entire bone, free from any matrix and in a fine state of preservation from having been partly mineralized with hydrate of iron. It corresponds exactly in size with the *astragalus* of the *Semnopithecus Entellus* or *Langoor*, and the details of form are so much alike in both, that measurement by the callipers was required to ascertain the points of difference. We have forwarded the specimen with a notice to the Geological Society of *London*, after keeping it some months in reserve, having been diffident about resting the first announcement of fossil *Quadrumana* on any thing less decisive than the cranium or teeth.

This *astragalus* in conjunction with Messrs. BAKER and DURAND's specimen, satisfied us of the existence of at least two distinct fossil *Quadrumana* in the *Sewálík Hills*. We have lately become possessed of several fragments, more or less perfect, belonging to the lower jaws of two species, both smaller than Messrs. BAKER and DURAND's fossil. These we shall now proceed to notice.

The principal specimen is represented in fig. 1. It consists of both sides of the lower jaw; a great portion of the right half is entire with the whole series of molars; the left half is broken off to the rear of the antepenultimate molar. The two middle incisors are present, and also the left canine broken across at its upper third. The right canine and the lateral incisors had dropt out leaving but the alveoli. The molars of the left side are destroyed down to the level of the jaw. The right ramus is wanting in more than half its width, together with the articulating and coronoid processes, and a portion of the margin at the angle of the jaw is gone. The specimen is a black fossil, and strongly ferruginous; the specific gravity about 2.70. It was encased in a matrix of hard sandstone, part of which is still left adhering to it.

The jaw had belonged to an extremely old animal. The last molar is worn down so as to have lost every trace of its points, and the three teeth in advance of it have been reduced to hollowed-out discs, encircled by the external plate of enamel. The muscular hollow on the ramus for the insertion of the temporal muscle is very marked, being .35 inches deep upon a width of .55.

The dimensions contrasted with those of the *Langoor* or *Semnopithecus Entellus* and the common Indian monkey or *Pithecus Rhesus*, are as follow:—

Dimensions of the lower Jaw.	Fossil Sewálík Monkey.	Semnopithecus Entellus.	Pethecus Rhesus.	Ratio of the Sewálík fossil to the Entellus.
	inches.	inches.	inches.	
1. Extreme length from the anterior margin of the ramus to the middle incisors,	3.6	2.85	2.5	4 3.2
2. Extreme length of jaw ; (calculated in the fossil,)	5.3	4.	3.6	4 3.02
3. Height of jaw, under the 2nd molar measured to the margin of the alveoli,	1.35	1.05	.85	4 3.1
4. Ditto at the rear molars,	1.2	1.1	.95	4 3.6
5. Depth of symphysis,	1.9	1.4	1.1	4 3.
6. Space occupied by the molars,	2.3	1.9	1.5	4 3.3
7. Interval between the 1st molars,	.9	.75	.65	4 3.2
8. Antero posterior diameter of the canine, ..	.5	.4	.3	4 3.2
9. Width of jaw behind the chin under the 2nd molar,	1.15	1.05	.95	4 3.7

As in all other tribes of animals in which the species are very numerous, and closely allied in organization, it is next to impossible to distinguish an individual species in the *Quadrumana* from a solitary bone. In the fossil, too, the effects of age have worn off those marks in the teeth, by which an approximation to the subgenus might be made. It very closely resembles the *Semnopithecus Entellus* in form, and comparative dimensions generally. The differences observable are slight. The symphysis is proportionally a little deeper than in *Entellus*, and the height of the body of the jaw somewhat greater. The chin, however, is considerably more compressed laterally under the second molar than in the *Entellus*, and the first molar more elongated and salient. So much of the canine as remains, has exactly the same form as in the *Entellus*, and its proportional size is fully as great. As shown by the dimensions, the jaw is much larger than in the full grown *Entellus*: in the former the length would have been about 5.3 inches, while in the latter it is exactly 4 inches. The fossil was a species of smaller size than the animal to which the specimen described by Messrs. BAKER and DURAND belonged, but less so than it exceeds the *Entellus*.

Our limited means for comparison, restricted to two living species, besides the imperfection of the fossil, and the few characters which it supplies, do not admit of affirming whether it belongs to an existing or extinct species; but the analogy of the ascertained number of extinct species among the *Sewálík* fossil mammalia, makes it more probable that this monkey is an extinct one than otherwise. There is no doubt

about its differing specifically from the two Indian species with which we have compared it.

The next specimen is shown in fig. 5. It is a fragment of the body of the right side of the lower jaw containing the four rear molars. The teeth are beautifully perfect. It had belonged to an adult although not an aged animal, the last molar having the points a little worn, while the anterior teeth are considerably so. The dimensions, taken along with age, at once prove that it belonged to a different and smaller species than the fossil first noticed.

The dimensions are as follow :—

Dimensions of the lower Jaw.		Smaller fossil Sewálík spe- cies.	Larger fossil Sewálík spe- cies.	<i>Sennopithecus</i> <i>Entellus</i> .	<i>Pithecus</i> <i>Rhesus</i> .
		inches.	inches.	inches.	
1. Length of space occupied by the four rear molars,.....		1.48	1.7	1.48	1.25
2. Height of jaw at the third molar,		.95		1.1	.9

The length of jaw, therefore, estimated from the space occupied by the teeth, would be 4 inches, while in the larger fossil it is 5.3 inches ; a difference much too great to be dependent merely on varieties of one species. Besides we have another fragment, also belonging to the right side of the lower jaw, and containing the last molar which agrees exactly in size with the corresponding tooth in the figured specimen. This goes to prove the size to have been constant. The fossil, although corresponding precisely in the space occupied by the four rear molars with the *Entellus*, has less height of jaw. There is further a difference in the teeth. In the *Entellus* the heel of the rear molar is a simple flattened oblique surfaced tubercle, rather sharp at the inside. In the fossil, the heel in both fragments is bifid at the inside. The same structure is observable in the heel of the rear molar of the common Indian monkey *P. rhesus*. It is therefore probable that the fossil was a *Pithecus* also. It was considerably larger, however, than the common monkey, and the jaw is more flattened, deeper, and its lower edge much sharper than in the latter. This difference in size and form indicates the species to have been different.

It would appear, therefore, that there are three known species of fossil *Quadrumana* from the *Sewálík* hills : the first a very large species discovered by Messrs. BAKER and DURAND ; the second a large species also, but smaller than the first, and considerably larger than

the *Entellus*; the third, of the size of the *Entellus*, and probably a *Pithecus*; and further that two of the three at least, and most probably the third also, belonged to the types of the existing monkeys of the old Continent, in having but five molars, and not to the *Sapajans* of America.

There are at present upwards of 150 described species of existing *Quadrumana*; and as the three fossil ones all belonged to the larger sized monkeys, it is probable that there are several more *Sewálík* species to be discovered. We have some specimens of detached teeth, of large size, which we conjecture to be quadrumanous; but their detached state make this conjecture extremely doubtful.

Besides the interest attaching to the first discovery in the fossil state of animals so nearly approaching man in their organization, as the *Quadrumana*, the fact is more especially interesting in the *Sewálík* species, from the fossils with which they are associated. The same beds or different beds of the same formation, from which the *Quadrumana* came, have yielded species of the camel and antelope, and the *Anoplotherium posterogenium*, (nob.): the first two belonging to genera which are now coexistent with man, and the last to a genus characteristic of the oldest tertiary beds in Europe. The facts yielded by the Reptilian orders are still more interesting. Two of the fossil crocodiles of the *Sewálíks* are identical, without even ranging into varieties, with the *Crocodylus biporcatus* and *Leptorynchus Gangeticus* which now inhabit in countless numbers, the rivers of India; while the *Testudinata* are represented by the *Megalochelys Sivalensis* (nob.), a tortoise of enormous dimensions which holds in its order the same rank that the *Iguanodon* and *Megalosaurus* do among the *Saurians*. This huge reptile (the *Megalochelys*)—certainly the most remarkable of all the animals which the *Sewálíks* have yielded—from its size carries the imagination back to the æra of gigantic Saurians. We have leg bones derived from it, with corresponding fragments of the shell, larger than the bones in the Indian unicorned Rhinoceros!

There is, therefore, in the *Sewálík* fossils, a mixture in the same formation of the types of all ages, from the existing up to that of the chalk; and all coexistent with *Quadrumana*.

P. S. Since the above remarks were put together, we have been led to analyse the character presented by a specimen in our collection which we had conjectured to be quadrumanous. The examination proves it to be so incontestibly. The specimen is represented in figs. A, B, and C. of Pl. XVIII. It is the extra-alveolar portion of the left canine of the upper jaw of a very large species. The identification rests upon two vertical facets of wear, one on the anterior surface, the other on the

inner and posterior side, and the proof is this. The anterior facet *b* has been caused by the habitual abrasion of the upper canine against the rear surface of the lower one, which overlaps it, when the jaws are closed or in action. This facet would prove nothing by itself, as it is common to all aged animals in the carnivora and other tribes in which the upper and lower canines have their surfaces in contact. The second facet *c* *must* have been caused by the wear of the inner and rear surface of the canine against the outer surface of the first molar of the lower jaw. But to admit of such contact, this molar must have been contiguous with the lower canine, without any blank space intervening; for if there was not this contiguity the upper canine could not touch the lower first molar, and consequently not wear against it. Now, this continuity of the series of molars and canines without a diasteme or blank interval, is only found, throughout the whole animal kingdom*, in man, the *Quadrumana*, and the *Anoplotherium*. The fossil canine must therefore have belonged to one of these. It were needless to point out its difference from the human canine, which does not rise above the level of the molars. In all the species of *Anoplotherium* described by CUVIER, the canines, while in a contiguous series with the molars, do not project higher than these, being rudimentary as in man. Of the *Sewdlík* species, *Anoplotherium posterogenium*, (nob.) we have not yet seen the canines; but it is very improbable, and perhaps impossible, that the fossil could belong to it. For if this species had a salient canine, it must have been separated from the molars by an interval as in the other *Paehydermata*; otherwise the jaws would get locked by the canines and molars, and the lateral motion required by the structure of the teeth, and its herbivorous habit, would be impracticable; and if there was this interval, the upper canine could not have the posterior facet of wear. The fossil canine must therefore have belonged to a quadrumanous animal. This inference is further borne out by the detrition of the fossil exactly corresponding with that of the canines of old monkeys.

The dimensions are:—

Length of the fragment of canine,	1.75 inches.
Antero-posterior diameter at the base,	.8
Transverse ditto,	.7
Width of the anterior facet of wear,	.6

The two diameters are greater than those of the canine of the *Sumatra* Orang-otang described by Dr. CLARKE ABEL† as having been $7\frac{1}{2}$

* Cuvier Ossements fossil, tome 3, p. 15.

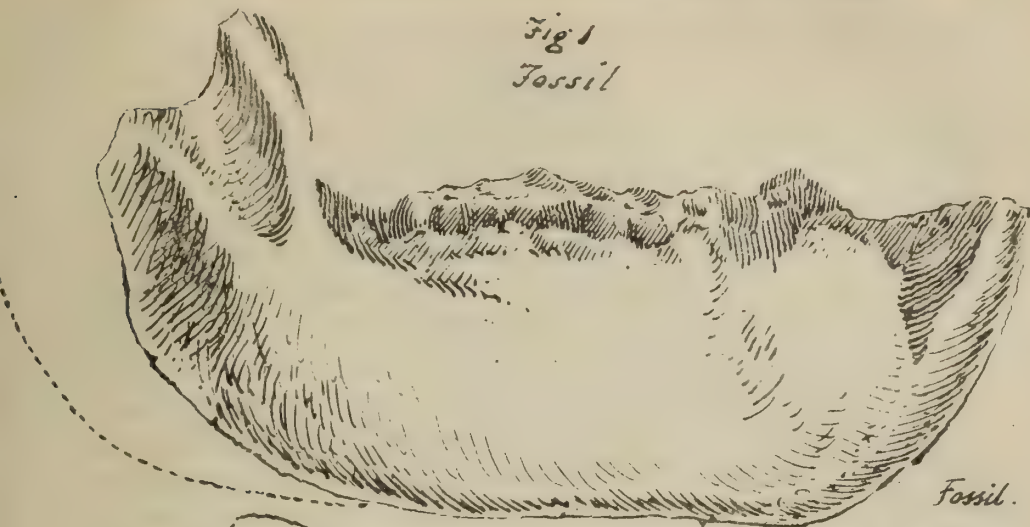
† Asiatic Researches, vol. 15, p. 498.

feet high. The *Cynocephali* have large and stout canines, more so comparatively than the other *Quadrumana*. But to what section of the tribe our fossil belonged, we have not a conjecture to offer. We may remark, however, that the tooth is not channelled on three sides at the base, as in the *Entellus*. Does the fossil belong to the same species, as the jaw discovered by Messrs. BAKER and DURAND, or to a larger one?

NOTE. We have sketched Dr. FALCONER's highly curious fossil tooth in position with the lower jaw of the Sumatran Orang-otang from the Society's Museum, in figure C of Pl. XVIII. There is a third facet of wear at the lower extremity *d* which, on reference, we find Dr. FALCONER attributes like *c* to attrition against the first molar, being observable, he says, in many aged animals. The worn surfaces *c* and *d* are uniformly polished, and have evidently originated from attrition against a tooth; but with regard to the principal facet *b*, we confess we have a degree of scepticism, which can only be removed by a certainty that the fossil had been seen extracted from the matrix. In the first place, the great extent of the worn surface and its perfect flatness could hardly be caused by attrition against the lower canine which should produce a curvature measured by the length of the jaw as radius. In the next place, the enamel of the tooth is less worn than the interior and softer part of the fossil: and thirdly, on examination with a magnifier, numerous scratches are visible in divers directions: all these indicating that the facet may have been produced *on the fossil*, by grinding it on a file, or some hard flat surface. On shewing the fossil to MADHUSUDANA, the medical pandit of the Hindu College, he at once pronounced that the tooth had been ground down to be used in medicine, being a sovereign specific in the native pharmacopeia. This circumstance need not necessarily affect the question, for it is probable that the native druggist would commence his rubbing on the natural plane, if any presented itself to his choice: but Dr. FALCONER and Capt. CAUTLEY, to whom we have returned the fossil with a communication of our doubts, assure us in reply that the fossil tooth was brought in along with a large collection, so that there is every improbability of its having been in possession of a native druggist. At any rate it is not on the front wear that they so much rest their argument of its origin, as on the posterior abrasion which could only happen in the jaw of a quadrumanous animal. In fact they have recent quadrumana shewing precisely similar wear on a small scale, and no other head will do so. We find only one exception in the Society's museum, viz. the tapir, whose right upper incisor (or non-salient canine) falling between the two lower ones is worn nearly in the fashion of the fossil: but it is less elongated.—ED.

FOSSIL
QUADRU MANA SEWALIK HILLS

Fig. 1
Fossil



Fossil. Fig. 4

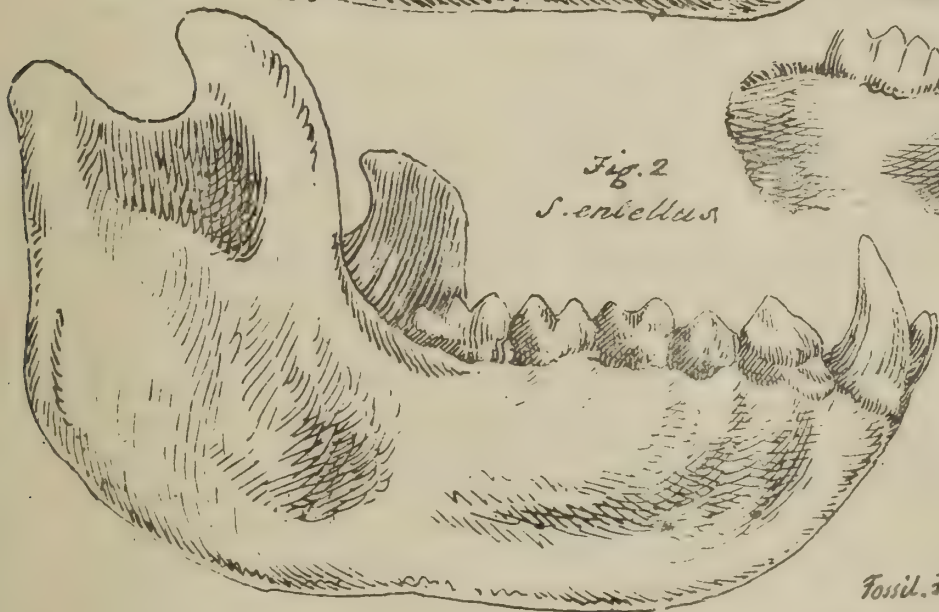
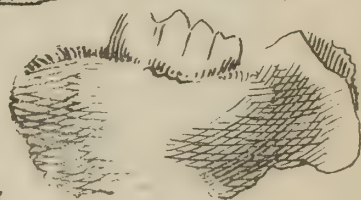


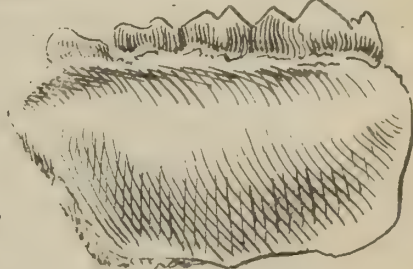
Fig. 2
S. entellus



Fossil. Fig. 5



Fig. 3
M. rhesus



V.—On some new Genera of *Raptores*, with remarks on the old genera.

By B. H. HODGSON, Esq.

I have the honor to submit, herewith, some original and amended generic characters of new forms of *Raptores* which have been described particularly in various numbers of your Journal. Those who are best acquainted with the present state of classification in regard to the *Falconidæ* and *Strigidæ* will, I apprehend, be most ready to make allowance for any possible imperfections cleaving to these characters.

Family FALCONIDÆ. Sub-family AQUILINÆ. Genus *Nisaëtus*, nob.

Bill short*, at base as high as broad, distinguished by compression without feebleness, strongly festooned. Nares large, vertical, elliptic, angulated, and wholly lateral in exposure. Wings short, firm; 5th quill longest. Tail long, firm, and square. Tarsi elevate, but not feeble, wholly feathered.

Digits elongated, nervous; the inner fore and the hind highly developed.

Acropodia reticulate with three or four scales next each talon. Talons immense, very unequal, strong and acute. Head usually crested.

Types, *N. Pulcher*, No. 680; *N. Nipalensis*, No. 9; *N. Pallidus* No. 8; *N. Grandis*, No. 7, nobis.

Habits. Preys on jungle fowl, partridges, hares: watches from a lofty perch, usually pouncing on its game when near it; sometimes pursues with energy on the wing; flight direct; does not seize on the wing. *Habitat*, saul forest, Taraï, and lesser hills. Not migratory; size rather large. Connects the most typical hawks with the most typical eagles. Digits and talons pre-eminently raptorial.

FALCONINÆ. Genus *Baza*, nob.

Bill as in *Ierax*, but somewhat longer and more compressed before the cere. Upper mandible with two long sharp teeth on either side, close to each other and to the hook, and directed forwards. Lower mandible with three or four smaller teeth correspondent to the above. Orbits and lores thickly and softly plumed. Nares transverse, rimiform, with the cere behind them membranous and free. Legs and feet short and thick. Tarsi half plumed, coarsely reticulate, longer than any digit. Toes cleft and depressed: the laterals subequal; the inner longer than the outer; the hind large. Acropodia wholly

* Short with reference to the *sub-family*: and so of all the generic terms subsequently employed; for instance, ears small and simple, in reference to scops, as a genus of the *sub-typical group* of *Strigidæ*.

scaled. Talons sub-equal, acute, wings long, broad-webbed, sub-equal to the tail; 3rd quill longest; notch of the inner web remoter than in *Falco* or in *Ierax*. Head crested.

Type, *Baza Syama**, nob. No. 657. *Habitat*, lower region of hills: size small; make robust: habits insectivorous.

Affinities various with *Cyminais*, *Harpagus*, *Ierax* and *Pernis*†. Not known to Indian falconers. Station in VIGOR's arrangement, at the head of the *Falconinæ*, between *Harpagus* and *Ierax*.

STRIGIDÆ, Aberrant group. Sw.

Disc and conch evanescent: ears simple. Sub-family of the eagle owls, or *Aëtoglaucinae*, nob.

Egrets conspicuous: great size and strength. Sub-diurnal questing. A very strong elongated bill. Eminently raptorial feet, and ample gradated wings, equal or nearly so to the medial square tail.

Genus *Huhúa*, nob.

Bill equal to the head, basally straightened beyond the cere, suddenly hooked, very strong, festooned, with trenchant scarpt tomia.

Nares ovoid, transverse, partially exposed. Wings sub-equal to the tail: 4th and 5th quills sub-equal and longest. Tarsi short, immensely stout, thickly plumed. Toes very strong, hirsutely plumose, partially denuded and scaled; the exterior antagonising but *not* versatile. Talons immense, acute, very unequal; the inner fore conspicuously largest; and hind equal to the outer fore.

Type, *Huhúa Nipalensis*, nob. No. 54‡. *Habitat*, all three regions of the hills. Habits subdiurnal and mammalivorous.

Genus *Cultrunguis*, nob.

Bill equal to head, straightened as far as the cere, gradually curved beyond it, moderately compressed, strong. Nares elliptic, partially exposed. Wings unpectenated, equal to the tail; 4th quill longest. Tarsi sub-elevate, strong, compressed, partially or wholly nude, reticulate. Toes long, nervous, compressed, reticulate, with three or four scales next each talon; the anterior digits sub-equal; the hind large. Soles of the feet aculeated. Talons sub-equal, compressed, strong, cultrated below§.

* *Syama*, in Sanskrit, means black-blue.

† I should rather say, affinities with *Harpagus* and *Ierax*. Analogies with *Cymindis* and *Pernis*. Our bird is, unquestionably, a Falconine type—which *Cymindis* and *Pernis* are *not*.

‡ N. B. The numbers refer to the series of specimens and drawings in London.

§ Unde nomen genericum: the strong and nearly equal talons are sloped from a round back or culmen to an inferior edge, which is as sharp as a knife, and

Types, *C. Flavipes* et *C. Nigripes*, nob. Nos. 55 and 56. *Habitat*, the lower region of the hills. Habits diurnal and piscivorous. Size large.

Remarks. In my judgment, *Huhúa* is the equivalent of *Aquila*, and *Cultrunguis* of *Pandion*, among the diurnal *Raptores*, which are, no doubt, represented by the nocturnal *Raptores* in nature, though not yet in our systems. Those systems wholly want a Strigine sub-family answering to the *Aquilinæ*.

The section, therefore, standing at the head of my two genera must be understood as resting on no better authority than my own. It is probable that the evanescent character of the disc and conch with the absence of the operculum, belong to the hawk and falcon owls as well as to eagle owls; and that the contradistinctive marks of the latter must be sought, in their great size, their prolonged but strong bill, their formidable legs, feet and talons, their ample gradated wings, and their medial and even tails. All these marks, not less than the former ones, characterise our *Huhúa* and *Cultrunguis*: whereas our *Ninox*, which is small, and has its bill, wings and tail formed on the Falconine model, is yet equally distinguished with *Huhúa* and *Cultrunguis*, by evanescent disc and conch, and perfectly simple small ears. Hence my impression of the very great prevalence of the latter characters, which seem to extend over *all* the aberrant sub-families of the *Strigidæ*, accompanied by egrets in the eagle owls, but *not* so in the hawk and falcon owls—witness *Noctua* and *Ninox*. The presence or absence of egrets cannot be taken as a *primary* mark of the aberrant group; for to it *Huhúa* and *Cultrunguis* unquestionably belong, and both these types are egretted. Whether the egrets even constitute a *secondary* or sub-family mark of this group, may be doubted: but, at present, this would seem to be the case, and in conformity with this notion I have inserted egrets as one of the sub-family marks. There is no uniting accuracy with precision in generic characters, so long as we want family and sub-family characters. How then to characterise our *Ninox*?—a falconine type in its own circle of the *Strigidæ*, and as expressly equivalent to the lesser insectivorous falcons, as *Cultrunguis* is to *Pandion*. When recently defining *Ninox* I begun with, ‘bill, disc, conch and feet, as in *Noctua*,’ considering that genus—which is so remarkable in the family for its firm plumage and short wings as well as for the absence of those pre-eminently Strigine is eminently calculated, with the aid of the spinous sole of the foot, to clutch the bodies of fish. No analogy can be more beautiful than that of *Cultrunguis* to *Pandion*.

characters, the great disc and operculated ears—as a conspicuous type. Yet hardly three months elapsed when I received from England a systematic work from which *Noctua* is wholly expunged! *Noctua*, however, will, I think, retain its place, characterised in the aberrant group of the owls by short wings and firm plumage, and leading through *Surnia* to our *Ninox*, which I believe to be the least Strigine bird on record. Let us now attempt to define it, as a genus belonging to the aberrant group of the *Strigidae*, characterised as before.

Genus *Ninox*, nob.

Bill short, arched from the base. Nares round, antea, apert, tumid. General contour with the character of the plumage, extremely Falconine. Wings long, firm, unpectenated, sub-equal to the tail; 3rd quill longest; 1st and 2nd very moderately gradated. Tail long, firm, even. Tarsi plumose, rather short. Toes medial, depressed, bordered, rigidly hirsute; laterals equal, hind compressed. Head smooth, small, and only Strigine in the size and position of the eye.

Type, *Ninox Nipalensis*, nob. No. 657

Habitat, central and lower hills. Habits, subdiurnal and insectivorous.

Mr. SWAINSON appears to have laid undue stress on the egrets of the owls, which seem to me but little more influential than the analogous crests of the *Falconidae*, and more especially of the *Aquilinae*. Disc and conch evanescent, and ears simple, are the marks of the aberrant group, taken as a whole. Egrets, added to great size, ample gradated wings, and a medial even tail, with powerful legs and feet and talons, seem to me the subordinate signs of the *Aëtoglaucinae* or aquiline sub-family of that group. Of the *Falcoglaucinae* or sub-family typifying the *Falconinae*, the first glimpse appears to be afforded by our *Ninox*, which has quite the proportions and aspect of many of the lesser insectivorous Falcons. Long and firm wings and tail—the latter even; and the former but slightly gradated; and both, in a word, adapted for strong flight—would seem to be necessary characters of this sub-family, and they are, at all events, characters eminently conspicuous in our *Ninox*. Between the wings of *Ninox* and those of *Strix* or *Otus* there is just the same sort of difference as exists between the wings of *Falco* and those of *Buteo*, or of *Milvus*—I mean as to suitability for vigorous flight, and expressly without special reference to the technical form of the wing.

The following comparative measurements of *Baza*, a small insectivorous Falcon, and of *Ninox*, a small insectivorous Falconine owl, can scarcely fail to excite interest. The measures are given in English feet and inches.

						<i>Baza.</i>	<i>Ninox.</i>
Total length,	...	...	...	...	...	1 0 $\frac{1}{2}$	1 0 $\frac{1}{4}$
Length of bill, straight, to gape,				...	...	0 0 $\frac{7}{8}$	0 0 $\frac{7}{8}$
Basal height of bill, extreme,	...	...	...	...	...	0 0 $\frac{3}{4}$	0 0 $\frac{7}{8}$
Basal width of bill, extreme,	...	...	...	...	...	0 0 $\frac{1}{2}$ $\frac{3}{8}$	0 0 $\frac{7}{8}$
Head straight, from gape to occiput,				...	...	0 1 $\frac{1}{4}$	0 1 $\frac{1}{4}$
Length of tail,	...	...	...	...	...	0 6	0 6
Tarsus, from inner salient angle above, to the sole,						0 1 $\frac{1}{4}$	0 1 $\frac{1}{4}$
Length of central digit, from extreme base to superior insertion of the talon,	...	...	...	...	...	0 1 $\frac{1}{8}$	0 1 $\frac{3}{8}$
Length of exterior digit,	...	...	...	...	...	0 0 $\frac{13}{16}$	0 0 $\frac{1}{2}$ $\frac{5}{8}$
Length of interior digit,	...	...	...	...	...	less 1 $\frac{1}{16}$	0 0 $\frac{1}{2}$ $\frac{5}{8}$
Length of hind digit,	...	...	...	...	...	0 0 $\frac{9}{16}$	0 0 $\frac{1}{2}$
Straight length of central talon,	...	...	...	...	...	0 0 $\frac{8}{16}$	0 0 $\frac{1}{2}$ $\frac{9}{16}$
Ditto ditto exterior ditto,	...	...	...	...	...	0 0 $\frac{6}{16}$	0 0 $\frac{8}{16}$
Ditto ditto interior ditto,	...	...	...	...	...	0 0 $\frac{8}{16}$	0 0 $\frac{1}{2}$ $\frac{9}{16}$
Ditto ditto hind ditto,	...	...	...	...	...	0 0 $\frac{9}{16}$	0 0 $\frac{7}{16}$
Expanse of wings,	...	...	...	...	...	2 5 $\frac{1}{2}$	2 4 $\frac{1}{2}$
Length of a closed wing,	...	...	...	...	...	0 9 $\frac{1}{2}$	0 9 $\frac{1}{8}$
Longer diameter of opening of ear,	...	...	...	...	...	0 0 $\frac{3}{16}$	0 0 $\frac{2}{16}$
Diameter of the eye,	...	...	...	...	...	0 0 $\frac{6}{16}$	0 0 $\frac{2}{16}$
Weight of the birds,	...	...	...	...	...	7 $\frac{1}{2}$ oz.	7 $\frac{1}{2}$ oz.

To render this singular parallelism complete, I may add, that both birds are mature males of their respective species; that the females are scarcely larger and not at all different in aspect; that both are eminently conspicuous for the *insessorial* character of their feet, the digits of which are cleft to their origins, the soles quite flat and somewhat bordered; the anterior laterals of equal *strength* and *size*, and the central of the same thickness, and of very moderate excess of length. Wings and tail could not, in a Strigine bird, be more Falconine than those of *Ninox*; and hence these organs are almost precisely similar, both in form and proportion, to the same organs in *Baza*, which, though a Falconine bird, deviates widely from the restricted or *generic* type*. Upon the whole, the only material differences of these birds are the inferior strength of the thumb with its talon, and the superior size of the eye, in *Ninox*—both differences eminently interesting, in as much as none are more universally and distinctly referable to the respective habits and exigencies of the two families of the nocturnal and diurnal *Raptores*.

* *Peregrinus*, *Icelandicus*, &c. I exclude *Tinnunculus*, &c., under the separate sub-generic title of *Falcula*.

Mr. SWAINSON, in treating of the *Falconidæ* and *Strigidæ*, has seen perpetual reason to deplore the errors of systematic works.

In truth, it is hardly too much to say that the majority of recorded species are no species at all; and the majority of recorded genera insufficient or inaccurate.

The old species, described by color only, and when classification was in its infancy, cannot now be really appreciated except by personal examination. Nor can any words of condemnation be too strong for the modern practice of inserting these species, without such examination, under the strict subdivisions elaborated by recent science.

Such insertion must be made haphazard, and nothing is more common than to find one species registered in half a dozen genera, none of which suit it, or, if so, only by accident! For systematic writers now to rely on dried skins, is sufficiently objectionable: but their reliance on the old book descriptions is perfectly monstrous.

Mr. SWAINSON—*clarum et venerabile nomen*—has acknowledged with unusual explicitness that the examination of *fresh* subjects is, very generally, an indispensable condition of accuracy, and that, for all the higher purposes of science, an acquaintance with *habits*, as well as with structure, is required. Will it, then, be credited that, with almost all our recorded species calling for revision, and with our classification labouring, in vain, to advance per rudem indigestamque molem specierum, there is no sense on the part of Zoological associations at home of the necessity of any thing more than the collection of dried skins?

Such, however, is the fact; upon which I forbear, at present, from any comments, returning gladly to Mr. SWAINSON—whom any one would be proud to assist, if able; and, as I have some little practical experience of raptorial birds, and of the value of the generic characters assigned to them in books, I shall indicate what I conceive to be the diagnostics of some received genera.

AQUILINÆ. Genus *Pandion*.

Bill and head compressed. Gape narrow. Bill moderate, extremely rounded on the ridge, highly festooned; tomixæ scarpt and very trenchant. Brow not salient. Lores and cere almost nude. Nares rimiform, subtransverse, with the cere behind them membranous and free. Legs and feet spiculated, strong, compressed, nude, and reticulate. Toes nervous, cleft; the outer versatile with oblique grasp; the hind, very mobile. Talons highly falcated, nearly equal, compressed, rounded below. Wings exceedingly long, surpassing the tail; 3rd quill longest. Instances, *P. Vulgaris*, *P. Indicus*, nob. No. 715.

HALIAETUS. Sub-genus of *Pandion*?

Contradistinguished by a long bill, much more compressed on the ridge; by shorter, rounder wings, never surpassing and seldom equaling the tail, and which have the 4th and 5th quills sub-equal and longest; by wide, transverse nares of irregular form; by scaled tarsi and toes, in which moreover the spinous aculcation of *Pandion* is less developed, and the exterior and hind toes are less mobile; and, lastly, by talons less compressed and less rounded below—sometimes squared.

Types. *Haliaetus Ichthyætus Horsfieldii*, *Plumbeus et Albipes*, nob. Nos. 10 and 3.

The bill of *Haliaetus* is always longer and sharper on the culmen than in *Pandion*; but in some species, its cutting edge is as highly festooned as in *Pandion*; in others, it is as level as in *Aquila*: in some again the wings are considerably shorter than the tail; in others, equal to it.

Instances of the former peculiarities, *Ichthyætus et Plumbeus*; of the latter, *Albipes*. *Haliaetus* is further distinguished from *Pandion* by a nude salient brow: but both genera are alike remarkable for the compression of the bill and head, as compared with *Aquila*, and also for the smallness of the gape.

The very long unfestooned bill of *Albipes* is accompanied by a wider gape, by wings equal to the tail, by great size, and by talons perfectly squared below.

If *Ichthyætus*, then, be the type of *Haliaetus*—and no doubt it is—then *Albipes* is a separate type bearing the same relation to *Aquila*, as *Ichthyætus* to *Pandion*, and connecting *Aquila*, through *Haliaetus*, with *Pandion*. This type I have provisionally named *Cuncuma*, from its native name. It is a fisher, but not exclusively so; and is remarkable, like the bird of *Washington*, for its theftuous propensities*.

Pandion is the king of fishers, and a more beautiful instance of the adaptation of structure to habits than this genus exhibits, is not to be found in the whole circle of ornithology. The rimiform nares may be

* I make no allusion to birds which I am not personally familiar with; but I suspect that the American bird adverted to has a very strict resemblance to our *Albipes*, a resemblance including habits, size, and structure. If this be the case, it may be ranged by the side of *Albipes* under the sub-genus *Cuncuma*, of which the following are the characters. Bill long and void of festoon. Wings equal to the tail. Talons squared below. Size very great. There is a beautiful gradation of characters in these sub-genera, and a correspondent modification of manners, by means of which the type of the fishing eagles is linked with the type of the mammalivorous eagles.

closed by the lax membrane behind them so as to exclude the water : the compressed, spiculated, free toes, of which the outer fore may be turned quite back, and the hind almost forward, aided by the compressed cylindric and highly curved talons, are the very weapons to take fish with ; whilst the immense wings enable the bird to quit his own element with impunity, and to bear off, from the bosom of the waters, fish of far greater weight than himself. Falcons trained to duck-hunting dare not suffer the water to touch their plumage, always quitting their grasp if the quarry can near it in the struggle. But *Pandion* will plunge dauntlessly into the deep, and will strike fish so large that they sometimes carry him under and destroy him, though he has nothing to forbear from a fish twice his own weight. In India the birds of this genus are not migratory : they breed in lofty trees overhanging large lakes, laying their eggs in April, May ; and rearing two young, which usually quit the nest in June, July. The white-footed *Cuncum* (*Haliæetus Albipes*) (which is a vastly larger bird) frequently robs the Indian *Pandion* of his spoil, just as the white-headed species of the West does the *Pandion* of that region. Those who have classed the *Brahmaní Cheel* of India (*Haliæetus Pandicerianus*) with the fishing eagles, may be safely said to know as little of the structure, as of the habits of that pakry Milvine bird ; or else of the group with which they have associated it. True, *Pandicerianus* has a festooned bill* : but its feet are those of *Buteo* or of *Milvus*, without a trace of the peculiar structure of those organs in the piscatory eagles. Its chief food is insects, and its manner of questing similar to that of *Circus*. It feeds freely on dead fish and on other carrion in winter.

STRIGIDÆ.

Typical group. Disc and conch immense. Ears large and operculated.

Sub-genus *Strix*.

Bill longer than the head, straightened, shallow, feeble, with the

* The armed bill, however, insisted on as a pre-eminent mark of the *Raptores*, has as much reference to *insectivorous* habits as to more noble ones. And whenever the tooth or festoon of the bill is, however highly developed, rather sharp than strong, insectivorous habits may be safely inferred. These *sharp* processes of the bill remind one of the peculiar character of the teeth in the lesser insectivorous carnivora, such as *Herpestes*. Here also there is high development *without* concomitant strength : and if we look through the typical sub-family of the diurnal *Raptores*, we shall find the dentation of the bill most developed, in *one* sense, among the lesser insectivorous genera, such as our *Baza Elanas*, as well as the *Brahmaní Cheel*, may be cited to prove that a *festooned* bill does not, per se, imply noble habits.

maxilla cut out by large nasal fossæ. Nares longitudinal and lunated. Valve of the ear definite, tetragonal. Wings long, feeble, exceeding the short and feeble tail: 2nd quill longest. Tarsi long, slender, partially implumose. External toe basally connected as in *Falco*. Central talon pectinated.

Type, *S. Flammea*.

OTUS.

Head more or less egretted. Bill short, wholly arched on the culmen, high and deep at the base. Valve of the ear indefinite, confluent with the immense valvular disc, the opposite sides of which are connected over the ear passage by a membranous ligament. Wings long, feeble, scarcely or not at all exceeding the tail; 2nd quill longest; 1st strongly notched near the tip. Tarsi and toes short and plumose.

Types, *Otus Vulgaris* et *Brachyotus*.

Sub-typical group.

Disc and conch medial, perfect. Ears smaller, operculated.

Genus SCOPS.

Bill short, arched from the base, nostrils round, tumid. Head egretted. Ears simple, small*. Wings medial, sub-equal to the tail: 3rd and 4th quills sub-equal and longest. Toes feeble, nude, sub-depressed. Plumage soft and vermiculated. Size small. Habits insectivorous and nocturnal.

Instances. *Scops Sunia*, *Scops Lettia*†, *Scops Pennata*, nob. Nos. 64, 66, 721, respectively.

Aberrant group.

Disc and conch evanescent. Ears small and simple.

NOCTUA.

Bill short, arched from the base. Nostrils round, very tumid, sometimes tubular. Head smooth. Toes hairy, feeble, and sub-depressed. Wings short, scarcely exceeding the base of the tail; 4th quill longest. Tail slightly elongated, rounded. Plumage firm and lineated. Size small. Insectivorous and nocturnal.

Instances. *N. Cuculoides*, GOULD; *N. Auribarbis*; *N. Tarayensis*; *N. Perlineata*; *N. Tubiger*, nob. Nos. 67, 63. 707, 486, respectively.

* Small and simple with reference to the group. The ears are, in fact, nearly twice as large as in the proximate genus *Noctua*, which I have ranged in the aberrant group.

† *Scops Lettia* is possibly the *Asio auctorum*: but there is no safe quoting of species from books. *Asio* has been made a *Scops*, an *Otus*, or any thing else, at the discretion of the discreet!

Scops seems to me to stand on the confines of the sub-typical group, leading to *Noctua* as among the first of the aberrant group. One is egretted, the other not; one has the plumage characteristically soft and lax, the other has the plumage, including the alar and caudal feathers, a good deal firmer. The wings of one scarcely surpass the base of the tail, those of the other reach nearly to its tip.

The disc of the one is nearly perfect, and the ears comparatively large, though simple. The disc of the other is very imperfect, and the ears much smaller. So also the eye and head*. The one has nude toes, and the other hirsute one. Lastly, a very maculate vest seems as common with *Scops*, as a lineated garb with *Noctua*. The size of both is small; both have an Otine bill with feeble feet; and both are nocturnal and insectivorous.

The above characters of known genera are, of course, mere suggestions, as emanating from one who has neither museum nor library at command. But, if practical experience be of any worth, they are suggestions which the skilful may take much advantage of, I suspect that plumage *very* soft, *moderately* soft, and more or less *hardened* or *firm*, might be ascribed, respectively, to the typical, sub-typical, and aberrant groups of the *Strigidæ* with safety and advantage.

I have great doubts as to the position of our *Urrua* and *Bulaca*. By the elongation and strength of the bill they are affined to the eagle owls; but the high development of the disc and conch, though far short of *Otus*, yet seems to indicate the position of these birds to be the sub-typical group. Though very similar in structure and size, one has the egrets, as well as subdiurnal habits and pale iris of *Otus*; but in this (*Urrua*) the valve of the ear is evanescent: whilst the other (*Bulaca*) with the smooth head and valved ear, has also the nocturnal habits and dark iris of *Strix*. The size of both is greater than that of either of these genera. In *Scops* the size and character of the disc and conch are very similar to those of *Urrua*: but the former is a small nocturnal and insectivorous bird; the latter, a large, semi-diurnal and mammalivorous one. *Bulaca* again, with something of the aspect, and with entirely the manners, of *Strix*, is sundered from *Strix*, toto cœlo, by the strength of its bill, the high gradation of its wings,

* The relative volume of the head amongst Strigine birds is more apparent than real. It is caused by the immense quantity of plumes protecting the conch when the ear has much of the peculiar family structure; and consequently this feature is quite as noticeable in *Otus* as in *Strix*; because in the former genus the ear is even *more signally* Strigine than in the latter.

and the superior length and firmness of its tail, as well as by its short and strong legs. In the last respect there is a close resemblance on the part of *Bulaca* to *Otus*; but the conch and disc are not half the size that they are in *Otus*; the conch is oval, and the definite form of the ear-valve is quite opposed to the character of this organ in *Otus*, agreeing more closely with *Strix*. The long and feeble wings and short and feeble tails of *Strix* and of *Otus*, are characters peculiarly their own: and they are united with, in the former, a bill so long and feeble, and, in the other, a bill so short and arched, that there is no mistaking the combination of these attributes in either genus. I know no Strigine type at all agreeing with *Strix* in the character of the bill, taking its feebleness and length together. But, it is a grievous mistake to suppose, with CUVIER, that *Strix* alone exhibits either elongation or straightness in this member: for, not only our *Huhúa* and *Cultrunguis* have a long and straightened bill; but these characters are distinctly, though less, developed in *Urrua* and in *Bulaca*.

The otine form of the rostrum (short, thick, and wholly curved) no doubt is very prevalent among the *Strigidæ*; since it is possessed in common by *Otus*, *Bubo*, *Scops*, *Noctua*, and *Ninox*. But the tumidity of the nares in the three last is not found in the first: and *Ninox* (not to mention its smooth head, divested of all Strigine characteristics save the size of the eye) is sundered wholly from *Otus* by its firm plumage, and by the length and strength of both wings and tail. In *Otus* the tail, though longer, is as feeble as in *Strix*; and in both these genera the wings, though long, have all the flimsiness proper to the family.

Noctua, by its firm plumage (including wings and tail) as well as by its depressed perching hairy feet, its evanescent disc, simple small ears, smooth head, and short arched bill with tumid round nares, makes the nearest approach to our *Ninox*. But shortness in the wing is the pre-eminent attribute of *Noctua*, whilst the very opposite is that of *Ninox*. In *Surnia* the wings appear to be rather short, and the tail, though long, is extremely wedged. In *Ninox* alone have we wings and tail formed upon the Falconine model. And these peculiarities, taken in connexion with feet in which the insectorial character prevails almost over the Raptorial—just as it does in many of the little insectivorous Falcons—constitute our *Ninox* a signal type. Our *Cultrunguis* is equally conspicuous by its Pandionic feet and habits; and our *Huhúa* by its combination of aquiline attributes—the chief of which are pre-eminent size and strength, and a bill uniting length and straightness with enormous power. I am quite certain that both these birds

represent the sub-family of the eagles, in the aberrant group of the *Strigidae*; and not merely so, but precisely, *Aquila* and *Pandion*. But as to the situation of *Urrua* and *Bulaca*, or as to their analogies, I am quite at a loss. Taking, however, as my guide the *medial size of the disc and conch*, I shall class them, for the present, in the sub-typical group, characterised as before; and the following generic characters may, I hope, serve to make them understood, in themselves and in their relations.

STRIGIDÆ.

Sub-typical group.

Genus URRUA, nob.

Bill sub-equal to the head, somewhat elongated, scarcely arched from the base, compressed, strong. Nares ovoid, transverse. Wings and tail somewhat elongated: wings moderately gradated, 3rd and 4th quills sub-equal and longest. Tail not bowed, even. Tarsi and toes plumose. Tarsi elevate, not feeble. Head egretted. Ears scarcely valved, oval, traversed by a membranous thong. Size considerable. Habits sub-diurnal. Dwells frequently in holes on steep bank-sides.

Type, *Urrua Cavearea*, nob. No. 57.

Genus BULACA, nob.

Bill sub-equal to the head, somewhat elongated, scarcely arched from the base, compressed, strong. Nares elliptic, transverse, tumid. Wings conspicuously gradated; considerably shorter than the tail; 5th and 6th quills longest and sub-equal. Tail sufficiently elongated, bowed. Conch ovoid. Legs and feet, short, strong, plumose. Head smooth. Habits nocturnal. Size considerable.

Type, *Bulaca Newarensis*, nob. No. 59.

It is quite out of the question to range *Urrua* with *Otus*, because of the greatly inferior size of the disc and conch; or with *Bubo*, because of the length of the legs; or with either, because the bill is decidedly, though not conspicuously, elongated and straightened. Equally impossible is it to range *Bulaca* with *Strix* or with *Otus*; because its disc, though perfect, is not larger than in *Urrua*; because its bill is (like that of *Urrua*) stronger and shorter than that of *Strix*, longer and less arched than that of *Otus*; and because its wings have characters quite opposite to those of either genus.

Urrua has the sub-diurnal habits, the pale iris and the egrets of *Otus*; *Bulaca*, the nocturnal habits, the dark iris, and the smooth head of *Strix*. In both the orifice of the ear is oval, but large ($1\frac{2}{8}$ inch long). In *Bulaca* it has a large distinct valve: in *Urrua*, scarcely any. In neither is there any appearance of the long circular denuded line

defining the course of the disc in *Strix* and *Otus*, and seeming, as it were, to lay bare the whole head.

This organ, both in size and character, is *essentially* mediate in these birds, between the typical structure as seen in *Strix* and *Otus*; and the aberrant structure, as exhibited in *Noctua*, *Ninox*, *Huhúa*, and *Cultrunguis*.

The following comparative measurements, in English inches, may help the curious to appreciate the value of those perplexing but necessary terms, *long* and *short*, as applied to bills, tails, and legs.

	Length of the bird.	of the tail.	of the tarsus.	of the bill.
<i>Strix</i> ,	$14\frac{1}{2}$	$5\frac{1}{4}$	$3\frac{1}{4}$	$1\frac{3}{4}$
<i>Otus</i> ,	$14\frac{1}{2}$	6	2	$1\frac{1}{4}$
<i>Urrua</i> ,	22	$9\frac{3}{4}$	$3\frac{1}{2}$	$1\frac{7}{8}$
<i>Bulaca</i> ,	22	$9\frac{3}{4}$	$2\frac{3}{4}$	$1\frac{7}{8}$
<i>Scops</i> ,	$9\frac{1}{2}$	$3\frac{3}{4}$	$1\frac{1}{4}$	$\frac{7}{8}$
<i>Noctua</i> ,	$9\frac{1}{2}$	4	$1\frac{1}{4}$	$\frac{7}{8}$
<i>Ninox</i> ,	12	6	$1\frac{3}{8}$	$\frac{7}{8}$
<i>Huhúa</i> ,	30	12	$3\frac{1}{8}$	$2\frac{3}{8}$
<i>Cultrunguis</i> ,	24	$9\frac{3}{4}$	$3\frac{7}{8}$	$2\frac{1}{8}$

P. S. Since the above paper was composed, I have received, from the lower hills, a fine specimen of the *Strix Coromandra* of LATHAM. With the size it has all the characters too, of our *Urrua*, except in the legs, the tarsi being lower, and the toes scopine but stronger. The opening of the ear is about one inch, long, ovoid, and not valvular, though the membranous edge be more or less free all round it. I know nothing yet of the *habits* of this bird. If they agree with those of *Urrua*, it may form a species of this genus or sub-genus; and its toes are not absolutely nude, though nearly so. But it seems to be an osculant species leading to *Scops*. The wings and tail are both somewhat elongated, and sufficiently firm, though the general plumage be remarkably soft. The wings are not much short of the tail, and they have the 3rd quill longest, the 4th nearly as long; the first and second, moderately gradated. The toes, which are longish and not feeble, are remarkable for a softly papillose and flattish sole. To the external one there is a vague basal membrane; and the hind is stronger than usual. The talons are sufficiently elongated and acute; the inner and central, the outer and hind, being respectively equal.

The nostrils are nearly round and somewhat tumid: the bill, like that of *Urrua* and *Bulaca*, combines strength with a tendency to elongation and straightness, not noticeable in *Otus*. My bird is a mature female, 21 inches long, of which the bill is $1\frac{3}{4}$, and the tail $9\frac{1}{8}$, the tarsus is $2\frac{3}{4}$, and the central toe $1\frac{7}{8}$.

VI.—*Observations of the Magnetic Dip and Intensity at Madras. By*
T. G. TAYLOR, Esq. H. C. Astronomer.

Notwithstanding the value which has of late years been attached to observations of the Magnetic Dip and Intensity, I may, I believe, safely state, that the whole of British India has failed to put on record a single good set of experiments to this end. With a view to supply this deficiency for *Madras*, I have availed myself of the loan of a very excellent dipping needle, the property of Captain DRINKWATER, of His Majesty's ship *Conway*; and of two magnetic intensity needles which were brought out by the same officer, and are the property of Captain JAMES CLARKE ROSS, R. N. The dipping needle, which was constructed on purpose for the *Conway*, differs, I believe, in no respect from the ordinary construction, save that it is one of the best instruments I have met with, and, as far as I can see, absolutely faultless. The observations for Dip are as follows.

Observations for Dip made at the Madras Observatory, situated in Long. 5h. 21m. 7s. 8 East of Greenwich, and Lat. 13° 4' 8". 8 N. on the 26th April, 1837.

With Needle marked No. 1.

Face of Instrument E 2st.					
No.	A.	B.	No.	A.	B.
1	7° 26'	7° 28'	2	6° 16'	6° 14'
3	7 6	7 4	4	6 12	6 8
5 Inverted the axis,	7 24	7 17	6	6 4	6 8
7	7 30	7 24	8	6 16	6 22
Reversed the Poles.					
9	7 28	7 22	10	6 34	6 38
11	7 12	7 7	12	6 16	6 21
13	7 16	7 24	14	6 24	6 28
15	7 26	7 23	91	6 27	6 33
Mean,	7° 21' 0"	7° 18' 37"		6° 18' 37"	6° 21' 30"

Needle marked No. 2.

1	7 31	7 20	2	7 2	6 38
3	7 31	7 42	4	7 8	6 58
5 Inverted the axis,	7 42	7 25	6	6 55	6 14
7	7 50	7 30	8	6 45	6 55
Reversed the Poles.					
9	7 24	7 6	2	6 0	6 21
11	7 26	7 4	4	6 10	6 28
13	6 34	6 44	6	6 15	6 0
15	6 34	6 43	8	6 23	6 4
Mean,	7 19 0	7 11 45		6 34 45	6 34 45

And taking the general mean, we get the true Dip

with Needle No. 1 6 49 56 No.
 ditto ditto „ 2 6 55 4

Mean, 6 52 30

N. B. The numbers 1, 2, 3, &c. exhibit the order in which the observations were made. During the present century, I cannot find that any observations for Dip have been made at *Madras*, but there is one result on record dated 1775, when ABERCROMBIE found it to be $5^{\circ} 15' N.$; if this result can be trusted, it would appear that the Dip is on the increase at the rate of $1' 34''$ in a year.

With regard to the needles employed for the magnetic intensity, it may be necessary to state, that they are constructed after the model of that of Professor HANSTEEN. The needles are cylinders, $2\frac{1}{2}$ inches long and .3 inch in diameter, save that the ends are abruptly sharpened to a point; these needles are freely suspended on their centres by a few filaments of unspun silk, which are hooked on to a brass stirrup, moveable upon the needle; by which means a perfect adjustment to horizontality can be effected; the needle thus suspended is enclosed in a rectangular glass box immediately over a divided circle, from which the arc of vibration can be read off and the number of oscillations counted. The zero of measure here employed, is the time of performing 100 vibrations at a temperature of 60° , commencing with an arc of 20° and ending at from 2° to 4° .—If these measures could be observed to ultimate accuracy, it would be worth while to reduce the times of vibration under these circumstances to the times of describing an infinitely small arc, as has been done by HANSTEEN, and on account of buoyancy, to a vacuum; but since such is not the case, the result will be obtained to all useful accuracy by supposing the correction common to each set of observations, by which the reductions, which are rather operose, are avoided: the reduction to a temperature of 60° is effected by applying the correction, $0,00017 t$. (where t represents the time of performing 100 vibrations);—a formula which is derived from experiment. The two needles used in the following observations are distinguished from one another by a sign $\times$ on one of them. This needle in *London* at a temperature of 60° performed 100 vibrations in 442,76 seconds of mean time, whereas the other needle performed 100 vibrations under the same circumstances in 461,96 seconds; the former needle is further distinguished from the latter from its having been long in use in England, and as having exhibited a remarkable degree of steadiness in its magnetism during the late magnetical experiments instituted in Ireland under the auspices of the British Association; added to which, these needles are calculated to excite a more than ordinary degree of interest from the circumstance of their having been employed by Sir JOHN ROSS in the perilous North Polar Expedition, from which he has lately so fortunately returned. The observations at *Madras* are as follows.

			No. 3, Private mark X.					
1837.	Arc.	Ther.	Vib.	Mean Time.			Interv.	Mean Int.
				<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>
April 30th.	20° 0	88.0	1	0	43	49.4	302.2	} cor. for temp. 1.43
	12 45	—	101		48	51.3		
	8 15	—	201		53	53.1	301.5	
	4 0	—	301		58	54.1	301.0	
								301.57
								300.14
Another set.	20 0	88.0	1	1	1	49.0	302.2	} cor. for temp. 1.43
	12 45	—	101		6	51.2		
	8 15	—	201		11	52.6	301.4	
	4 15	87.8	301		16	53.8	301.2	
								301.60
								300.17
May 3rd.	20 0	87.0	1	0	45	37.7	302.5	} cor. for temp. 1.38
	12 45	—	101		50	40.2		
	8 30	—	201		55	42.1	301.9	
	5 0	—	301	1	0	43.6	301.5	
								301.97
								300.59

			No. 3, not marked.				Mean Int. s.
			Vib.	<i>h.</i>	<i>m.</i>	<i>s.</i>	
April 26th.	20° 0'	85.2	1	3	43	6.1	} cor. for temp. 1.31
	12 30	—	101		48	17.1	
	9 0	—	201		53	27.5	
							310.70
							309.39
April 30th.	20 0	87.8	1	1	25	17.3	} cor. for temp. 1.40
	11 45	—	101		30	29.4	
	7 30	—	201		35	40.7	
	4 0	87.3	301		40	51.8	
							311.50
							310.10

or we have for the time of performing 100 vibrations at the temperature of 60° Fahrenheit at *Madras*.

Needle 3, X	Needle 3.
<i>s.</i>	<i>s.</i>
300.14	309.39
.17	310.10
.59	
Mean, 300.30	Mean, 309.74

If h and h' represent the magnetic intensities at any two places, and T and T' the times of performing 100 vibrations at those places, then we have

$$\frac{h}{h'} = \left(\frac{T'}{T} \right)^2$$

applying this, the horizontal magnetic intensity for *Madras* (that at *London* being assumed = 1.) becomes

By Needle No. 3, X	<i>s.</i> 2,1738
Ditto ditto No. 3,	2,2245

With a view to compare theory with practice, we might now compute the number of oscillations which No. 3 $\times$ ought to make at *Madras* from the observed number in *London*; thus, assuming the Dip for *London* to be $69^{\circ} 10'$ N. the formula becomes

$$\left\{ 3 + \sec.^2 (69^{\circ} 10') \right\}^{\frac{1}{2}} : \left\{ 3 + \sec.^2 (6^{\circ} 52' 30'') \right\}^{\frac{1}{2}} :: \overline{462,76}^2 : T^2$$

performing the computation $T = 344,87$ differing to the amount of 44,57 seconds from the observations. This difference between theory and observation, is but one of many instances which have from time to time occurred in the infant state of a science. Observation has led us to a theory, and then again has shewn the incompleteness of such theory. In the case of Magnetism, we have long since been prepared to expect that local causes might considerably interfere with its established laws; since one station (the island of *Teneriffe*) has already exhibited some singular anomalies, both in respect to the Dip and Intensity. Under these circumstances it is much to be wished that observations could be multiplied in various parts of India, whereby the law of variation from theory may be detected;—and how is this to be accomplished? My answer is ready:—Let any gentleman who is disposed to undertake a set of magnetic intensity experiments signify his intentions; and I shall have great pleasure in forwarding to him, free of expense, a magnetised and compared needle, provided that I am favored with a copy of the results. In anticipation that there will be several gentlemen disposed to forward this inquiry, I am now preparing several needles for use. All that is necessary is, that the person applying for a needle should be in possession of a good clock or chronometer, and has the means of ascertaining its daily rate.

Madras Observatory, 9th May, 1837.

Note.—We shall be most happy to promote the author's views by making a series of experiments with his needles in Calcutta, and then distributing them to friends in the interior. Of the dip we have a few records, (see *Proc. As. Soc.* for May.) Major B. BLAKE also brought from England an adjusted intensity needle, but we have not yet been favored with his observations.—ED.

VI.—*The Legends of the Saurashtra group of Coins deciphered.* By JAMES PRINSEP, *Sec. As. Soc.*

Those who would deprecate the study of old coins as a useless and uninteresting waste of time and ingenuity,—and there are such we fear even among the readers of this journal,—frequently mistake the means

for the end, and suppose us to be enamoured of the very defects of the barbarous specimens of ancient art we seek out with such ardour, rather than give us credit for being impelled by the desire of looking through them at the history of the times they faintly but certainly pourtray. Twice has our small band of collectors been enabled to oppose a triumphant reply to such sceptics even with the unpromising materials of purely Indian relics, without counting the splendid but more natural harvest in ancient *Bactria*. The dynasty of the Guptas in central and eastern India, and that of the Buddhist rájas of *Ceylon*, form two unequivocal lines of history developed, or confirmed, by the unlying evidence of coins. I am now happy in being able to produce a third series for the west of India, equally well filled as to names, and of greater interest than either of the previous discoveries, on several accounts, as will presently be manifest.

I have given the name of *Saurashtra* series to the coins depicted in Plate XLIX. of Vol. IV. because they have principally been found at *Mandivee*, *Puragarh*, *Bhoj*, and other ancient towns in *Cutch*, *Cattywar*, and *Guzerat*, the *Surastrene* of the Greeks, which comprehended from the *Sindh* or *Indus* to *Barugáza* (*Baroach*) on the confines of *Ariake*, or India Proper, and which cannot but be identical with the *Saurashtra*, of Sanskrit authorities*. The specimens before me when engraving the plate alluded to, were not very distinct, and I could not then make out more than a few of the letters, which were seen at once to belong to a peculiar form of ancient Nágari.

Success in other quarters brought me back to the promising field of *Saurashtra*, made more promising by the accession of some fresh coins from Mr. WATHEN of *Bombay*, and Captain BURNES, whereon the legends were more complete.

While thus engaged, I received from Captain HARKNESS, Sec. Roy. As. Soc. along with a copy of the Society's Journal, No. VI. (which also contains a notice by Professor WILSON of one coin of this group, but without decipherment†) a couple of beautifully executed plates of a fine collection of these same coins in the possession of Mr. STEUART, who made a tour through India a few years since. The plates appear to have been executed in *Italy*; and as no explanation occurs, I

* See preceding note on the birth place of IXWAKU, page 349.

† Professor WILSON has inadvertently assumed in his note, on my authority, that these coins are known by the name of *Gadhia paisa*, or ass-money. It was not to this description, but to a very degenerate descendant of the Indo-Parthian coinage, generally of copper, that Captain BURNES stated the name to be applied.—(See my former paper, Jour. Vol. III. p. 687.)

presume they have been circulated to the various Oriental Societies in hopes of getting the legends deciphered. Encouraged and aided by this accession of materials, I proceeded, according to the plan that succeeded so well with the Bactro-Pehlevi inscriptions, to separate and analyse the conformable portion or the titles common to all the coins, and afterwards to classify the unconformable portion, which of course would include the proper names.

In this manner I was soon fortunate enough to discover a key to the whole in the value of one or two anomalous looking letters which had hitherto deceived me by their resemblance to members of other ancient Sanskrit alphabets. I must acknowledge some assistance from Mr. WATHEN'S Sindhí grammar, where having found the absence of vowel marks in the modern alphabet of the country, I was not unprepared to find the same omission in the more ancient one. Another preparatory step was derived from the TREGGAR legends of last month's plate, ending in *Mitasa*, which I ventured to construe as the corrupted or *Pálí* mode of expressing the Sanskrit possessive case *Mitrasya*. A similar ऋ was perceived following पुत्र or *putra*, which left little doubt that the word was पुत्रस, for पुत्रस्य "of the son," which, by the idiom of the language, would be the final word of the sentence, and would require all the preceding members of it to be in the genitive case.

The letter ञ (or *j*) occurred in the body of one or two of the legends in its simple state, whereas in the initial word, which could not but be *rāja*, it was prolonged below, shewing that another letter was subjoined, while sometimes the visarga followed it.—This could be nowise explained but by supposing it the possessive case of राजा, or राज्ञः *rājneh*, the double letter being not at that early date replaced by a compound symbol.

The same observation will apply to all the other double letters, *mn*, *tr*, *dr*, *sv*, *shv*, which are in this alphabet made by the subjunction of the second letter without diminution. Hence the peculiar elongation of many of the letters, which was at first thought characteristic of the whole alphabet, but it turns out to belong only to the letter *r*, which is thus distinguished from the *n*, *i*, and *h*.

The second word of the title I read कृत्रिमस, for कृत्रिमस्य *Kṛtrimasya*, genitive of *Kṛtrima*; which is translated in WILSON'S dictionary "made, factitious, an adopted son (for *Kṛtrima putra*)."—The latter sense was inadmissible, because it so happened that the name of the actual father was in every case inserted, and the same title was also applied to him. The only manner, therefore, in which the term could be rendered was by "elected"—"adopted"—by the people, or by the

feudal chiefs of the country; a designation entirely new in Indian numismatics, and leading to a highly interesting train of reflection, to which I must presently recur. Sometimes the epithet *Mahá* is affixed—not to *rāja*, but to *Kṛtrima*, as *Rāja mahá Kṛtrima*, the ‘great or special elected king’—as if in these cases he had been the unanimous choice of his people, while in the others he was installed merely by the stronger party in the state.

In every instance *but one*, the *rāja* is stated to be the son of a *rāja*; and it is quite natural to expect that a prince, unless he were very unpopular, would have influence to secure the succession in his own family. In the case forming the exception to this rule, the *rāja* is the son of a *Swámin* or *Swámi*, a general term for bráhman or religious person. I have therefore placed him at the head of the line, although it does not follow that in an elective government the regular succession may not have been set aside in favor of an influential commoner.

Among all the coins hitherto examined nine varieties only have been discovered. Of these several can be traced from father to son in regular succession.—Others again spring from the same father, as if brothers had succeeded, in default of heirs direct, or from voluntary supercession; but we know that in Indian families the same names frequently recur in the same order of filiation; so that unless accompanied by a date it is quite impossible to decide whether the individuals are the same in every case of similar names.

The features on the obverse might serve as a guide in many cases, for they (as I have before remarked) are executed with a skill and delicacy quite Grecian; but it will be seen below that I doubt their representing the individual named on the reverse.

I have lithographed in Plate XXIV. the several varieties of legend, as corrected and classified, after careful examination of Mr. STEUART’S plates, with all the coins in our respective cabinets, as well as the sketches I have been favored with of others by Mr. WATHEN. I have not time to engrave the coins themselves, of which indeed the former plate will give a clear idea, for they are all the same in size and appearance, varying a little in the countenance of the prince. Their average weight is about thirty grains, agreeing in this respect with the *korees* mentioned by HAMILTON as struck in *Cutch*, four to a rupee, by the Raos and Jams of *Noanagar*, with Hinduí characters*.

Legend, No. 1. Of this there are four examples in Mr. STEUART’S plate. I had one from Mr. WATHEN†, which passed into Captain CUNNINGHAM’S possession by exchange.—Adding the *mátras* or vowels,

* HAMILTON’S *Hindostan*, I. 654. † Found by Captain PRESCOTT in Guzerat.

and correcting the possessive termination, the legend will be in modern character,

राज्ञ कृत्रिमस्य रुद्रसाहस्य स्वामि जनदमपुत्रस्य

Rajna kritrimasya Rudra Sahasya, Swámi Janadama-putrasya.

in English, ' (coin) of the elected king RUDRA SÁH, son of SWÁMI JANADAMA.' The letter beginning the word *Swámi* in the majority of Mr. STEUART's figures, is an ञ, in lieu of a स. In one of his, and in mine (or rather Captain PRESCOTT's coin), the orthography is correct. There may be a little doubt about the *n* in *Janadama*, which is rather indistinct, but I think the dot at the foot of the line decisive.

Legend, No. 2. Of this there are likewise four coins engraved. We have none in *Calcutta*. The words run :

राज्ञ कृत्रिमस्य आगदमन् राज्ञ कृत्रिमस्य रुद्रसाह पुत्रस्य

Rajna kritrimasya Agadamna, rajna kritrimasya Rudra Sáh putrasya.

'Of the elected king AGADAMA, son of the elected king RUDRA SÁH.'

The simple title, *rāja*, of the father makes it probable that he is the preceding prince, whose son therefore succeeded him under the same system of election.

Legend, No. 3. Two coins in the STEUART collection :

राज्ञः कृत्रिमस्य वीरदमन् राज्ञमहा कृत्रिमस्य दमसाहस्य पुत्रस्य

Rajneh kritrimasya Vīra damneh, rajna mahá kritrimasya Dama Sáhasya putrasya.

'Of the elected king VÍRADAMA, son of the great elected king DAMA SA'H.'

In these examples we have the correct orthography of the genitives with one superfluous स्य attached to the penultimate *Sáha*,—which being connected with the word *putrasya* did not grammatically require the affix. DAMA SA'H, the father, is most probably a different person from the AGADAMA of the last coin. His title is more important, though that of his son again falls to the former level. We have as yet no coins of DAMA SA'H himself, though by this happy insertion of the 'fathers' we obtain two names with each specimen.

Legend, No. 4. Four coins in STEUART's plates—none in *Calcutta* :

राज्ञ महाकृत्रिमस्य रुद्रसाहस्य राज्ञः कृत्रिमस्य वीरदम पुत्रस्य

'Of the great elected king RUDRA SA'H, son of the elected king VÍRADAMA.'

Nothing invites remark in the orthography of this legend but the insertion of the visarga in one place and its omission in another. RUDRA SÁH is a direct descendant of the last *rāja*.

Legend, No. 5. Two coins in the STEUART list—two in my cabinet, one in Captain CUNNINGHAM's :

राज्ञः कृत्रिमस्य विश्वासाहस्य राज्ञ महाकृत्रिमस्य रुद्रसाह पुत्रस्य

‘Of the elected king VISWA SÁH, son of the great elected king RUDRA SÁH.’

Another regular succession. It is curious that the visarga is not inserted at random, but, where it has been once given, the engraver seems to have considered it necessary to repeat it—as he does also to conform to the modification of the letter *j* in *rāja*.

Legend, No. 6. Three STEUART coins, one PRINSEP (from BURNES’ collection), and one in Dr. SWINEY’S cabinet :

राज्ञ महाकृत्रिमस्य अत्रिदम राज्ञ महाकृत्रिमस्य रुद्रसाह पुत्रस्य

‘Of the great elected king ATRIDAMA, son of the great elected king RUDRA SÁH.’

Here we have, in all probability, a second son of RUDRA SÁH, through failure of heirs male to VISWA SÁH. I write ATRI for euphony as the most likely disposition of the vowels, none being expressed but the initial *a*, which, as in the modern Sindhí, serves for all vowels equally well.

Legend, No. 7. Including Nos. 9 to 12 of the STEUART plate; two in my cabinet, one in Captain CUNNINGHAM’S, and one in Dr. SWINEY’S :

राज्ञ कृत्रिमस्य विश्वासाहस्य राज्ञ महाकृत्रिमस्य अत्रिदम पुत्रस्य

‘Of the elected king VISWA SÁH, son of the great elected king ATRIDAMA.’

This second VISWA is shorn of his father’s distinction, *Mahá*. He does not appear to have left a son to take his place, being in the same predicament (as far as our information goes) as his namesake the son of RUDRA.

Legend, No. 8. Three coins, 25, 26 and 27 of STEUART, and two in my series—one lately received from Mr. WATHEN, and perfect in its circle of letters :

राज्ञ महा कृत्रिमस्य विजय साहस्य राज्ञ महाकृत्रिमस्य दमसाह पुत्रस्य

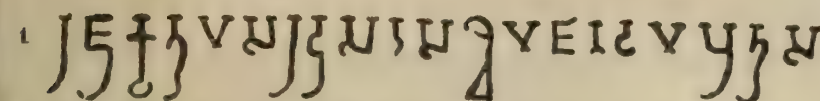
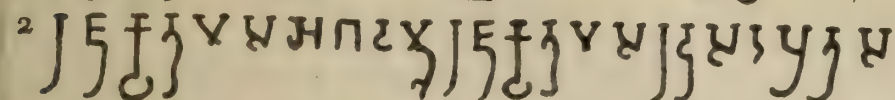
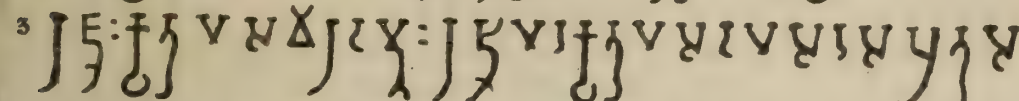
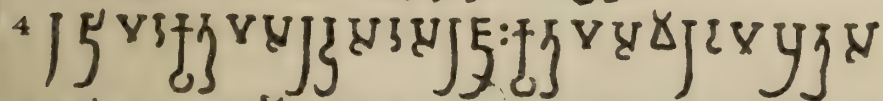
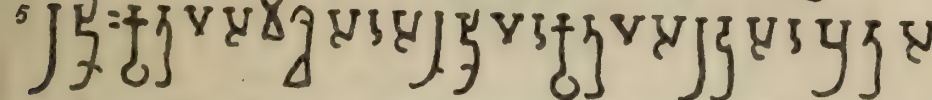
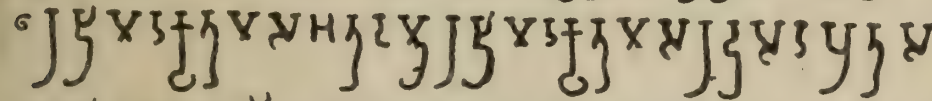
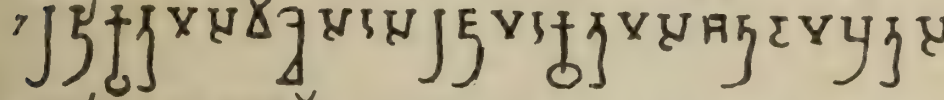
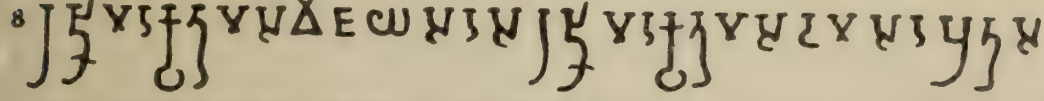
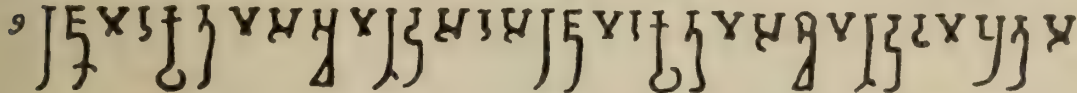
‘Of the great elected king VIJAYA SÁH, son of the great elected king DAMA SÁH.’

This *rāja* is evidently out of place; being a son of DAMA SÁH, he should have come before VI’RADAMA, who had a son. I did not perceive the mistake until after the plate was lithographed.

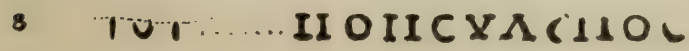
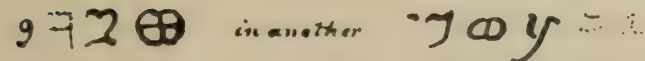
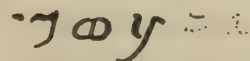
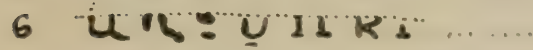
Legend No. 9. Of this there is only one specimen in the STEUART collection, to which I am able to add two. Col. TOD’S plate in the Roy. As. Soc. Trans. contains one. The inscription exceeds all the rest in length :

राज्ञ महकृत्रिमस्य खमिरुद्रसाहस्य राज्ञ महाकृत्रिमस्य खामिरुद्रदम पुत्रस्य

Legends on the Cutch coins with the symbol.

- 1 
- 2 
- 3 
- 4 
- 5 
- 6 
- 7 
- 8 
- 9 

Legends on the obverse.

- 5 
- 8 
- 9  in another 
- 3 
- 6 
- 7 

Central symbol of the Reverse.



Similarity between the Greek and Sanscrit Alphabets	Greek	Sanscrit
	Α Α	ह ह a
	Β Β	ब or द vu
	Γ Γ	ग ग
	Δ Δ	द dh
	Ε Ε	?gend ε
	Ζ Ζ	न ? s n
	Η Η	? η i
	Θ Θ	θ θ
	Ι Ι	ι i
	Κ Κ	κ κ
	Λ Λ	ल ल
	Μ Μ	म म
	Ν Ν	न n
	Ο Ο	o ω
	Π Π	प प
	Ρ Ρ	र र
	Σ Σ	स s
	Τ Τ	त t
	Υ Υ	य y
	Χ Χ	च ch

‘Of the great elected king SWÁMI RUDRA SÁH, son of the great elected king SWÁMI RUDRA DAMA.’

These two names stand insulated from all the rest, and the only test by which we can attempt to supply them with a fit position in the list, is the form of the letter ऋ which is decidedly of the earlier model. These two kings may therefore come conveniently into the break after AGADAMA, the second on our list.

We may now proceed to sum them up in the order thus conjecturally determined.

Elected Sovereigns of Cutch, (Saurashtra?)

1. RUDRA SÁH, son of a private individual, SWÁMI JANADAMA.
2. AGADAMA, his son.
(Here the connection is broken.)
3. SWÁMI RUDRA DAMA.
4. SWÁMI RUDRA SÁH, his son.
(Here the connection is again broken.)
5. DAMA SÁH, of whom no coins are extant.
6. VIJAYA SÁH, his son.
7. VI'RA DAMA, another son of DAMA SÁH.
8. RUDRA SÁH, son of VI'RA.
9. VISWA SÁH, son of RUDRA.
10. ATRIDAMA, also son of RUDRA.
11. VISWA SÁH, son of ATRIDAMA.

Thus we have eleven kings, with only two breaks in the succession, developed by this very interesting series of minute silver coins. Eleven kings, at the usual average of eighteen years per reign, will run through a space of just two centuries. Yet where need we seek for a single trace of such a dynasty in any of the works of the Hindus, when of the Guptas reigning in the central provinces the memory is but faintly shadowed in some of the spurious Puráṇas? It would be more unnatural to hope for any allusion to a remote kingdom of the west like *Cutch*, in the books of the bráhmans; and unless we can find something to the purpose in the numerous inscriptions from *Girnar* and *Junagarh*, we may, as far as the Hindus are concerned, but have added a barren list of names to the numerous pedigrees already collected by Tod and others, with the advantage however, always considerable, of their being entitled to perfect confidence.

From the Persian historians here and there may be picked up an incidental notice, of great value, regarding the internal affairs of India, but the names are so changed and confounded with titles that it is sometimes hard to recognize them. One of these notices quoted

by Colonel POTTINGER in his history of *Sinde** seems to throw an important light upon the point before us. After noticing the utter absence of any information on the dark age between the Macedonian expedition and the incursions of the Musulmans, this author says—"The native princes are not mentioned by name in all the manuscripts I have perused, until the time of the celebrated KHOOSROO (NOURSHERWAN) king of Persia†, who sent a large army and ravaged the western frontier of SASEE RÁJA's dominions; which are described, *including* his tributaries, to have extended on the north to the present provinces of *Kashmeer* and *Kabool*; southward to *Surat* and the island now called *Diu*; westward along the sea coast to *Mukran*, and eastward to the provinces of *Márwár*, *Bikaneer*, &c."

Colonel POTTINGER states that the rájas name was SUBEER SINGH; but this may be the learned mode of expanding the original *Sa-See* into a genuine Sanskrit name. He was killed and his country plundered, but after the enemy had retired with their spoil, two princes of the same dynasty succeeded and reigned with great vigour and equity, repairing the forts of *Sehwan*, *Moo*, *Oocha*, *Narain koth*, &c., which had fallen to decay under their peaceful progenitors. The second prince, resigning himself to sensual pleasures, left the conduct of affairs to his minister, during whose illness a young bráhman of his office, named CHUCH, having occasion to visit the king in the seraglio, was seen and loved by the queen, and on the death of the king they married and brought about a revolution which placed him on the throne. "Such," says the historian, "was the close of the race of RÁJA SASEE, which had governed the kingdoms of *Sinde* for upwards of two thousand years; whose princes at one period received tribute from eleven dependent kingdoms, and who had set the threats of the greatest monarchs of the world at defiance."

Now the word *Sasee*, the general name of the royal line, has a much greater affinity with *Sáha* (genitive, *Sáhasa*) than with SUBEER SINGH—and this name we find borne by seven out of the eleven princes whose names have been thus fortunately preserved. Many other considerations might be adduced in favor of their identity. A commercial maritime kingdom seated in *Saurashtra* and at the mouth of the *Indus*, would naturally extend its sway up the valley of that river and its branches. From its wealth and liberal form of government, it would be stable and powerful, especially under a tributary treaty (in general

* POTTINGER's *Travels in Beloochistan*, p. 386.

† NOURSHERWAN flourished about the middle of the sixth century. He was contemporary with the Roman Emperors JUSTINIAN and JUSTIN.

punctually performed) with the great monarch of *Persia*, the chief enemy capable of doing it injury. The antiquity assigned to this Sindian, or early Indian kingdom, further agrees with the tradition of *IKSWAKU*'s residence, and the migration of his sons eastward, and with all we have remarked (in a previous paper) regarding the origin of the commercial classes throughout modern India.

But, if the dynasty of the *Sáha* or *Sasee* rajas, of which we may now fix the termination towards the close of the sixth century, extended backwards for two thousand years or even a quarter of that period, we should find some mention of it by *ALEXANDER*'s historian, or by his namesake the commercial *ARRIAN*, who visited this very kingdom in the second century of our era. The elder *ARRIAN* affords but little to aid us. In the descent of the *Indus*, some petty chiefs, as *MUSICANUS*, *OXYKANUS* and *SAMBUS* are encountered and overthrown; but we hear of no paramount sovereign in *Patalene*. Indeed from the pains taken in rendering *Pattala* more habitable by digging wells, and inviting back the fleeing population, it might be argued that it could not have been a place of much importance prior to *ALEXANDER*'s visit.

The capital of the province had changed in the second *ARRIAN*'s time, to *Minágara*, "the residence of a sovereign, whose power extended as far as *Barugúza* in *Guzerat*. The government was in the hands of a tribe of Parthians divided into two parties; each party as it prevailed chose a king out of its own body, and drove out the king of the opposite faction: συνεχῶς ἀλλήλους ἐκδικόντων*."

Dr. VINCENT, the learned commentator on the *Periplus*, seems to hesitate in believing this assertion of *ARRIAN* that the government of the *Sindh*, *Cutch* and *Guzerat* province, was in the hands of a tribe of the Parthians, "Βασιλεύεται δὲ ὑπὸ Παρθων—" "If," says this author, "the governing power were Parthians, the distance is very great for them to arrive at the *Indus*; may we not, by the assistance of imagination, suppose them to have been Affghans, whose inroads into India have been frequent in all ages. That the government was not Hindu is manifest, and any tribe from the west might be confounded with Parthians. If we suppose them to be Affghans, this is a primary conquest of that nation, extending from the *Indus* to *Guzerat*, very similar to the invasions of *MAHMÚD* the Ghaznavide†."—"If" (we may here continue) for Affghans in this passage, we substitute the Mithraic races of *Seistán* and *Ghazni*, by whatever name they were known at the time, we find confirmation of such a line of invasion both in *Mr. MASSON*'s remarks—in our Indo-Sassanian coins, and in *ARRIAN*; for the fire worship would

* *VINCENT*, *P eriplus* of the Erythrean sea, II. 385. † *Periplus*, II. 585.

be quite ground enough for his classing the ruling race under the general term of Parthian*.

At any rate, as our author says, the ruling power was not then Hindu; and therefore the dynasty of the *Sáhas*, in which we find the genuine Hindu names of *Rudra*, *Viswa*, *Vira* and *Vijaya* could not yet have sprung up. Thus we have a limit on either side, between the third and the seventh century to assign to them, and we have names enough to occupy one half of that space. The family name of *SÁH*, or *SÁHU*, is not Sanskrit†, but it is very extensively used in the vernacular dialects. Half of the mahájans of *Benares* are named *Sah*‡, and the epithet evidently implies ‘merchants,’ for we find the same root in the *sahukár* (soucar) agent; *souda*, *soudágar*, trade, trader; and perhaps in the Persian word *sood*, interest. One branch of this western tribe *Sáhś* has been elevated to royalty in the present occupants of the throne of *Nipal*: the *Garkháls*, who overturned the *Malla* line in 1768, having confessedly migrated from *Udayapúr* close upon the borders of our supposed Sindian kingdom, and settled in the hilly district of *Kemaon* about two centuries anterior to their conquest of *Nèpal Proper*.

The learned memoir of Professor LASSEN on the Pentapotamia furnishes us with a proof that the *Sáhs* of *Sinde* and *Guzerat* were well known at the time the seventh chapter of the *Mahábhárata* was written for, when describing with all the acrimony of those who had suffered from their aggressions, the origin and habits of the *Bahlics* or *Bactrians* of the *Panjáb* or *Panchanada*, in the 44th verse we find the following words put into the mouth of *CARNA*:

* By *Parthians*, according to *MOSES* of *Chorene*, should be understood the *Palhavís*, or *Balhavís*, or people of *Pahla*, *Balha* or *Balcha*, the *Balika* or *Bahika* of the Sanskrit, and the *Bactria* of the Greeks: whence were derived the *Pehleví* dynasty and *Pehleví* writing of Persia; and the *Palhawans* of their more ancient poetry. An explanation so comprehensive and simple, that it seems curious it should ever have been disputed by the learned. Is it not also highly probable that the *Balabhí* kings, and their capital the *Balabhí-pura* of *Gujerat*, should originally have referred to a *Pahlavi* dynasty holding or re-establishing their sway in this province? The Sanskrit name of the town according to *TOD* is *Balika-pura*, and of the kings, *Balika-rai*. We must find their coins and decipher their inscriptions ere we shall be competent to enter more fully on the subject.

† *सह* or *सहदेव* *Saha deva* is however the name of the youngest of the five *Pándava* princes, and might be accepted by some etymologists as the original of a patronymic, *Sáhu*. *सह* also signifies “increase, addition;” but *साधु* is generally looked upon as the root of *Sáhu* the mercantile name.

‡ *GOPAL DAS SAH*, *GOAL DAS SAH*, &c. &c.

§ I perceive also in a manuscript just received from Captain *SLEEMAN*, that the *Sáhs* frequently reigned at *Garha Mandela*.

प्रस्थला मद्रगाभारा चारडा नाम तस्कराः ।

वशाति सिन्धुसौवीरा इति प्राये विकृत्यिताः॥

which M. LASSEN translates :

Prasthali, Madri, Gándhári, Aratti profecto latrones ;

Necnon Basates et SAUVIRI SINDHUIDÆ : ita in universum vituperantur.

And in a note he alludes to a variation in the manuscript whence Dr. WILSON thus translated the same passage : ‘ The Prasthalas (perhaps borderers) Madras, Gandháras, Arattas, Khosas, Básas, Atisindhus (or those beyond the Sindhus), Sauviras, are all equally infamous.’—
“ Legit igitur नामतःवशा ; Sed præstantiorem præbet lectionem Codex Parisiens ; et Chasi huc non pertinent ; a Pentapotamia enim sunt alieni. Básum et Atisindhuidarum nomina ignota mihi sunt et in errorem h. l. induci sese passus est doctissimus Anglus. Compositum non ex tribus, sed ex duobus tantum nominibus constat, Basâti et Sindhusaúvira. Posteriores laudantur Râm. I, XII, 25. ed. Schl. et alio nomine appellati sunt Cumâlaca (Hem. ch. IV. 26.) Prius nomen sæpius in Bháratea reperi, ex. c. in hoc versu, ex libro sexto descripto :

गाभाराः शङ्खलि प्रच्य पार्वतीया वशातयः ।

Gandhári, Saddhales, orientales, montium incolæ atque Basâtes.”

The Professor’s reading so entirely accords with the conditions of our *Sáh* or *Sau* fraternity that no doubt can be entertained of its being correct ; and we gain a very important step by learning the Sanskrit mode of spelling the term सै, since we may thence hazard a new interpretation of the word *Saurashtra*, as *Sau-rashtra* ‘ the country of the *Sau* tribe,’ a more close and plausible one than that hitherto accepted of *Saurya-rashtra* the country of the sun-worshippers.

The 72nd couplet confirms such an interpretation by ascribing precisely the same iniquities (theft, or perhaps commercial usury) to the *Saurashtrians*, the vowel being only shortened for the sake of the verse.

प्राच्या दासा दृषन्ता दक्षिणत्याःक्षेत्रे बाहीकास्तस्कराःसुराष्ट्राः

Orientales servi sunt, meridionales turpes, Bâhici latrones, Surashtri prædatores.

Commentators have uniformly supposed *Surashtra* to denote the modern *Surat*, but this is an error : the name applies only to the *Surastrène* of PTOLEMY, and *Surat*, as I am assured by Mr. BORRODAILE of the Bombay Civil Service, is comparatively a modern town ; and its name, now persianized into *سورت* *Súrat*, was originally *Suryapur*, the town of the Sun.

I waive all discussion here on the important bearing the above theory has on the age of the Mahábhárat and of the Ramáyana ; either the

Sáhs of *Sinde* must be very old, or the passages of abuse and praise in these poems must yield their claim to high antiquity. At any rate a departure from strict orthodoxy is established against the tribe.

There are some other points in the reverse legend of the coins before us that call for further explanation—first, of the word *Kritrima*. The expression quoted above from ARRIAN indicates something of an elective government even while the Parthians ruled at *Minagara*; each party as it acquired the ascendancy in the politics of the state ‘*choosing a king out of its own body.*’

Dr. VINCENT supposes that the contending parties (the whigs and tories of their day) were not both Parthians, but more probably Parthian and Indian. This view is not a little supported by the coin evidence, and it is only necessary to imagine that the native influence of a rich mercantile aristocracy at length prevailed and excluded the Parthians altogether. Of these *Parthians* we see the remnant in the Parsees so numerous located in *Guzerat* and *Surat*, and can easily imagine, from their numbers and commercial enterprize, that they must have been formidable rivals to the indigenous merchant-kings.

Something of this feudal system of government is visible to this day in the fraternity of the *járajahs* or chiefs of *Cattywar* and *Cutch*. The name *jarájah* might, without any unwarrantable license, be deduced from *sah-rája*, persianized to *ja-rája* or local chieftain. In 1809 there were twenty or more of these chiefs in *Cutch* alone able to furnish a contingent of from two hundred to one thousand men*. In the *Guzerat* peninsula the number must be much greater, since in 1807 there were estimated to be five thousand two hundred families in which the inhuman custom of female infanticide was regarded as a dignified distinction of their caste!

In the names of these modern chieftains we can trace a few of our list *atra*, *visa*, and *vira*: and a town called *Damanagar*, may have owed its foundation to our prince of that name. The *Jah-rájahs* and *Catties* call themselves Hindus, but are very superficially acquainted with the doctrines of their faith—the real objects of their worship are the Sun and the *Matha Assapurí*† the goddess of nature,—doubtless the *Nanaia* of more classical *Bactria*. They are said to impress the Solar image on every written document. We are accordingly prepared to find it on their ancient coinage, where it is seen on the right hand side, the moon (*matha* for *más* or *máh*) being always in company on the left.

* HAMILTON'S Hindostan, I. 587.

† Ditto, I. 637.

The central symbol I have had to explain so often and with so many modifications, that I really feel it becomes more of an enigma the more is said of it! It occurs on the Pantaleon Greek coins—on the Indo-Scythic group—on the Behat Buddhist group—on similar coins dug up in *Ceylon*—and here at the opposite extremity of India. It is the Buddhist *Chaitya*, the Mithraic flame,—mount Meru, mount Aboo!—in fact, it is as yet unintelligible and the less said of it, the sooner unsaid when the enigma shall be happily solved!

Legend of the obverse.

Having satisfactorily made out the contents of the inscription on the reverse of the *Saurashtra* coins, I might have hoped to be equally successful with the obverse; but here I must confess myself quite foiled. From the obverse die being somewhat larger than the other, it seldom happens that a perfect legend can be met with; and by placing together all the scraps from different samples, enough only can be restored to shew: 1st, its general character; 2nd, to prove that *it is not Sanskrit*; and 3rd, that it contains two distinct styles of letter on the opposite sides of the head; that on the right having a strong resemblance to Greek, the other a fainter to Pehlevi; but both written by an ignorant hand. The three or four Pehlevi letters are variable and quite illegible; but the others, by combining the two first examples in the plate, (No. 5, from my coin; 8, from Mr. STEUART,) might be read *vonones vasileus*, allowing sufficient latitude for the corruption of a century or two. Should my conjecture be admitted even to the extent that the letters are Greek, we may safely attribute their presence to the supremacy of the Arsacidan king of Persia, or, looking farther back, to the offsets of the Bactrian kingdom in the valley of the *Indus*, where the Greek characters were still retained, as proved by the coins of KODES and NONES, (or *Vonones*) AZES, &c.; and we may conclude that his portrait, and not that of the tributary *rāja*, was allowed to grace the coinage of *Saurashtra*.

The sway of DEMETRIUS we know from STRABO to have extended over the delta of the *Indus*, and the retrenchment of a single particle from his text would make it include *Saurashtra* also. Speaking of MENANDER'S Indian possessions he says:

Ἦγε καὶ τὸν Ὑπανιν (Ὑπασιν) διέβη πρὸς ἑὼ καὶ μέχρι τοῦ Ἰσαμου (Ἰωμάνου) προήλθε. ταυὲν γὰρ αὐτὸς, ταδε Δημήτριος Ἐυθυδήμου υἱὸς τοῦ Βακτρίων βασιλέως οὐ μόνον δε Πατταληνὴν κατεσχον, ἀλλὰ καὶ τῆς ἄλλης παραλίας τήντε Τεσσαριόστου καλουμένην καὶ τὴν Σιγέρτιδος βασιλείαν.

On this important passage many have been the opinions expressed by the learned. BAYER refers the third name (the first two being fixed

as the *Hyphasis* and *Jumna*) to the mouths of the Ganges : “quam Strabo, alteram oram maritimam nomine Τεσσαριοστου dicit ? nempe nullam potuit, nisi quæ ad Gangis fluminis ostia ubi et Σιγέρτιδος regnum.” M. LASSEN, from whose *Pentapotamia* I have cited the above extract, thinks that the word merely alludes to the coasts in the neighbourhood of *Pattalene*, and he identifies *Sigertis* with the Sanskrit *Trigertá* त्रिगर्त in the province of *Lahore*. MANNERS places the former in *Guzerat* : “ad oram maritimam, quæ hodie *Guzerat*, olim nomine Sanskrit गुर्जार (*Gurjára*) appellata est, τεσσαριοστου regionem refert Mannertus, quod at veritatem haud dubie proxime accedit, sed nil certius de hoc nomine invenio*.”

Now by abstracting, as I said before, the twice repeated particle, τε, or by changing τε, to the article του or της, the whole obscurity of the text disappears, and the βασιλεια της Σαριοστου καλουμένη stands forth as the maritime kingdom of *Saurashtra*. This interpretation is surely more natural than the extension of MENANDER’S rule to the extreme east of India, merely to find another maritime delta and port for the græco-latinized corruption of a name quasi *Tessariostia* !

But we dare not venture on any speculations in regard to Greek names or affairs, lest we undergo castigation from the *Hellénic* critics of Paris, who are surprised at our ignorance of authors, ancient and modern, Greek and German, whose works we regret to say have never yet visited the banks of the Ganges ! We ‘Indianistes’ must then leave this investigation to M. RAOUL DE ROCHETTE as being altogether, to use his own words, “hors du departement de nos etudes !”

There are still two series of *Saurashtra* coins to be examined, but I have not yet wholly succeeded in deciphering them, and my readers will doubtless rejoice at such an excuse for postponing their discussion : I cannot, however, let pass the present opportunity of mentioning, as a highly curious circumstance, the very great similarity between the old Sanskrit and the Greek character. Their striking uniformity becomes more palpable the farther we retire into antiquity, the older the monuments we have to decipher ; so that even now, while we are quite green in the study, we might almost dare to advance (with the fear of M. RAOUL DE ROCHETTE before us), that the oldest Greek (that written like the Phœnician from right to left) was nothing more than Sanskrit turned topsy turvy ! A startling proposition this for those who have so long implicitly believed in *Cadmus*, and the introduction from *Egypt* of what, perchance, never existed there. Yet there is nothing very new nor very unnatural in the

* De Pentapotamia Indica Commentatio, C. LASSENII, 51.

hypothesis ; since the connection of the Greek with the Phœnician and Samaritan alphabets, has been admitted as a strong evidence that “ the use of letters travelled progressively from *Chaldea* to *Phœnicia* and thence along the coasts of the *Mediterranean** : ” and the Greek language is now so indisputably proved to be but a branch of the Sanskrit stem, that it is not likely it should have separated from its parent without carrying away some germs of the art of writing, already perhaps brought to perfection by the followers of BRAHMA. But my arguments are not those of books, or learning, or even tradition, but solely of graphic similitude, and ocular evidence.

The Greek letters are dressed by a line at the foot, in most cases, as Α, Δ, Λ, Μ, Ν, Υ, &c. ;—the Devanāgrī are made even along the upper surface of the letters, and in later ages a straight line has been introduced at the top, from which the grammatic elements are suspended. The Greek alphabet is devoid of all system and has had additions made to it at various times. Some of these, as Φ, Χ, Ψ, Ω, are precisely those which present the least resemblance to the Sanskrit forms.

I have placed my evidence at the bottom of plate XXIV. taking my Greek type from the well-formed letters on coins, and from the boustrophedon tablet of Sigeum.

Of the vowels, Α, Ι, Ο, and Υ, present a striking conformity with the vowels अ, इ, and the semivowels व and य of the oldest Sanskrit alphabets inverted. The vowel Ε is unconformable, and resembles more the short ε of the Zend. The long Η is a later introduction and appears to be merely the iteration of the short vowel Ι, as ω is of ΟΟ.

In the consonants, we find Β, Γ, Δ, Ζ, Θ, Κ, Λ, Μ, Ν, Π, Ρ, Σ, Τ, in fact every one of the letters, excepting those of after invention, are represented with considerable exactness by the ब (or double ब्ब), ग, घ, ङ, थ, क, ख, ग, न, प, र, ज, त of the oldest Sanskrit alphabet, although there is hardly a shadow of resemblance between any pair in their modern forms. The same precision cannot be expected in every case ; the Β, Δ, Θ, Λ, Μ, Ν, Π, Ρ, Τ, require, like the vowels, to be viewed in an inverted position : the Γ, and Σ, remain unturned : the Ζ, and Κ require to be partially turned.—The Λ and the Ν may be deemed a little far-fetched ; the Β taken from the double v, and the Δ from the aspirated थ may also be objected to ; but taking a comprehensive view of the whole, it seems to me impossible that so constant and so close a conformity of the alphabetical symbols of two distant nations should exist without affording demonstration of a common origin. Whether the priority is to be conceded to the Greeks,

* Pantographia, page 107.

the Pelasgians, or the Hindus, is a question requiring great research, and not less impartiality, to determine. The palæography of India is now becoming daily a more interesting and important study, and it cannot fail to elicit disclosures hitherto unexpected on the connection between the European and Asiatic alphabets.

VIII.—*On the Properties ascribed in Native medical works to the Acacia Arabica.* By LEWIS DA COSTA, Esq.

At a time when the intended formation of a Pharmacopeia for India has been publicly announced by the new Medical College, it is a desideratum to know how the natives have treated the subject of medicaments,—what of good their books contain,—what of error. Our medical practice pays perhaps too little attention to vegetable remedies, of which the Orientals possess an infinite variety, many inert, but many active, and many also quite unknown to Europeans. I had some intention of publishing a translation of the *Mukhzun ool udweeyuh* by MOOHUMMUD KHOSRU KHÁN, but there is no encouragement for such an undertaking in India. I therefore think it the wiser course in the first instance to publish a specimen by which the pharmacopeist will be able to judge of the aid he might derive were the whole work (collated with others) placed before him in an English translation. I use the *Gilchrist* orthography.

آم عنيدان OOMMEGHEELAN, ACACIA ARABICA, commonly called *Tuleh* شوكه مصر The people of the desert name it *Shuokeh-i-Misr* طامح (Egyptian thorn), and *Shuokeh-i-Arabia* شوكه اعرابيه (Arabian thorn). In Persian it is called *Moogheelan* مغيلان; and in Hindee, *Keekur* کیکر and *Bubool* ببول.

A thorny plant, generally growing in forests and at the foot of mountains. It is of two kinds, large and small, both resembling each other in appearance and foliage. The *first* kind is smaller than an apple tree, and the branches covered with thorns; the trunk is hard and at first green tending to white, but as it advances in age it assumes a blackish hue resembling the ebony آبنوس but tinged with red. The fruit, which is like a bean or bean pod, resembles *Baqia* باقلا and *Khurnoob* خرنوب (*Phaseolus vulgaris* and *Carobs*), and is flat, and knotty; the knots vary from five to nine in each bean, and within each knot resides a seed in appearance like *Turmis* ترمنس (Egyptian Lupin), but flatter and of a red color. The bean is variously called *Quruz* قرظ, *Sunt* صنط, *Ghurub* غرب and *Usnat* عصنادة. The pressed juice is called *Uqagia* اقايا (Acacia). The gum of a red and yellow semi-transparent color is called *Sumugh-*

i-Urbee صمغ عربي (Gum Arabic). It is said that between the bark and the body a resinous substance is found resembling the gum, but which is not gum; when this substance is freed of a red fluid that resides in it and washed, it becomes very white, and when chewed like the *Ilk* علك (gum resembling mastich), it discharges an odoriferous liquid and leaves an agreeable smell in the mouth.

The second kind, called *Sulum* سلم by the Arabs, is less thorny, and sometimes has no thorn at all, and the branches are very profuse; the trunk is blacker than the first kind. The fruit, which is like a bean and called *Quruz* قورظ is not knotty; it contains from 9 to 31 flat seeds according to size, and is of a deep violet color. Between each seed and around it a white coating is seen and between this coating and the shell is lodged a mucilagenous and gummy fluid of a deep yellow color. The blossoms of both the kinds are of a yellow color and globular form, emitting an odoriferous scent. The leaves of both the kinds are, in size and profusion, alike, and grow from a thin fibre by pairs in an oblique direction, and are astringent to the taste. There grows in some places a third kind of this plant, the branches of which are full of knots.

Character of all the parts. Cold and dry in the 2nd degree.

Medical Properties. Binding (restraining the discharge of redundant matter) and repellant. A drink prepared of the juice of its blossoms is good for the cure of palpitation from heat, and the horror, and for strengthening internal organs, either taken by itself or with other proper medicine. The leaves are deobstruent (opener of obstructions) and good for the stoppage of diarrhœa. If fused by way of embrocation it strengthens lax members. The tender green leaves if steeped over night in water and exposed to the influence of the moon, and the clear water taken off and drank in the morning, will cure excoriation of the urinary duct and allay the smarting of urine (ardor urinæ). A powder prepared of equal parts of the bark, the leaves, the blossoms and the gum, and from $\frac{1}{2}$ a drachm to 1 drachm taken regularly every morning, will thicken and retard the semen, prevent involuntary discharge, &c. The young leaves with a little white cummin seed, and one or two buds of pomegranate bruised and steeped in water, and strained and heated, and a few (6 or 7) pebbles or shards well heated and cooled in it (4 or 5 times), will prepare a liquid to prevent looseness in children in the last stage of teething, which is a very trying and weakening season with them; this might also be given to adults with good effect—the quantity to be regulated according to strength and age.—A plaster prepared of green leaves is good to fill up wounds and subside inflammation. A decoction made of the leaves is given for the protusion of the anus and for drying the humidity of the womb. Pressed juice of the leaves and fruit stops the flowing and spitting of blood. The fruit boiled in water, and a piece of cloth soaked in it several times will make a good Pessary. Of the beans a cerement is thus made—split the beans and take the seeds out; rub briskly the inner part of the bean upon a piece of new cloth, until the pulp and all the humidity is thoroughly absorbed in the cloth, which when dried will become like cerement; of this cerement stays are made and worn by women for several days on their bosom to brace up and tighten fallen and slackened breasts. Bark of the trunk and of

the branches is used for the stoppage of blood from fresh wounds. This forms the principal ingredient of the oil of *Shekh Sunnan*. The bark of the tree bruised and steeped in ten times the quantity of water and kept for two days, and then boiled and the liquid reduced to one half the quantity, and then strained off after rubbing the bark well in it, and kept in a china or a glass vessel, will make an excellent wash for women to use during menstruation after urine—it serves to contract the vagina considerably. The fruit, leaves and bark are good for tanning leather in lieu of *Mazoo* مزازو (gall-apple). The bark and blossoms are principal ingredients in making molasses, and spirituous liquor of the same.

The root and the bark are detergent. They make a good dentifrice for strengthening the gums لثة. A brush made of the thin sprigs is used for strengthening the teeth. The wood is used, in consequence of its extreme hardness and solidity, in making wheels for carriages, and instruments for tillage and tent pins. There is another kind of *Oommigheelan*, of which the leaves, fruit, color and bark resemble the 2nd kind, but it has a very bad odour, and has great abundance of blossoms. This kind, which generally grows in Bengal, is brought to no kind of medical use whatever: the filament of its root, however, if taken to a snake, will cause it to drop its head and make it languid.

Remarks. By the European physicians the gum is only used. They say “that gum exerts no action on the living system; but is a simple demulcent, serving to lubricate abraded surfaces, and involve acrid matters in the primæ viæ. In the solid form it is scarcely ever given unless to sheathe the fauces, and allay the trickling irritation which occasions the cough in catarrh and phthisis pulmonalis; in which case a piece of it is allowed to dissolve slowly in the mouth. It is chiefly used in the state of mucilage.—*London Dispensatory.*

اقاقيا AQAQIA. A name given to the pressed juice of *Quruz* قرظ and *Quruz* is the fruit of the *Tuleh* تلم, from which the Gum Arabic is obtained. This plant in Hindí is called *Keekur* كيكور, and the pressed juice of the fruit *Keekur ka rus* كيكوركارس. By the Franks or Europeans it is called *Acacia*.

Quality. That obtained from unripe fruit previous to its drying, is of a red ruby color; and when dried, it assumes a greenish hue mixed with red and black. That obtained from fruit after it is ripe, is of a black color. The former kind is always chosen for medicinal purposes; it has an agreeable smell, of a mixture of green and black color, and is weighty and hard.

Character. When unwashed cold in 1st, and dry in the 1st and 3rd degrees. When washed cold and dry in the 2nd degree.

Medical properties. Drying, repelling, and binding رادع قابض مجفف. It stops flow of blood from any part of the body نرف الدم; also from the mouth, نفث الدم. It strengthens the stomach معدة and the liver كبد, and prevents the flow of humours (by the nose) arising from heat نزلات حارة and the dysentery اسهال. It is good, both internally and externally, in cases of

languor of the anus and of the womb *استرخاء معدة ورحم*. As ointment it allays inflammation of the ophthalmia, strengthens the sight *بصر*, attenuates the humours, and removes redness. It is introduced in medicines for the cataract *ظفرة*. If applied as ointment to inflammations arising from heat *اورام هارا*, it attenuates and prevents the determination of the humours in that direction. It is good for the whitlow *داخس*, for the cracking of the skin from cold, for the relaxation or weakness of the joints, and for the protrusion *فروج* of the navel of children and the anus : and if applied to the hair, it gives a fine black color ; if used with myrtle leaves *برگ مورد* and red rose *گل سرخ*, it prevents flow of perspiration *ادرار عرق*, and removes its bad odour : applied to the body and the face (as a cosmetic), it improves the color of the skin ; with albumen ovi (white of egg), it is good for burns by fire, and prevents blistering ; with *Momeroghun* *موم روغن* (an ointment of thick consistence made of different ingredients and bee's wax), called in Arabic *قيروطي*, it is also good for burns by fire and for the whitlow. If used as powder, it is efficacious in preventing flow of blood from any part of the body : if boiled in water, and the liquid used as an embrocation on wearied or languid parts, it will strengthen and prevent the determination of the humours that way. Used as a clyster, it alleviates the excoriation of the intestines *سحج*, and prevents flux with occasional issue of blood *اختلاف الدم*, and strengthens the intestines *امعا*. If used as an injection *اختعان* to the womb, it absorbs *نشف* morbid secretions *رطوبات* : applied as pessary and suppository, it prevents the flowing of blood, the protrusion of the anus and the womb, *رحم* its languor and humidity (flowing of watery humour). As plaster *غماد* it is good for the protrusion of the pupil of the eye *برآمدگی حدقه*, for inflammations arising from heat and erysipelas *سرخ باد* or *باد سرخ* (ignis sacer or St. Anthony's fire) ; also inflammation of the anus and the womb, and it strengthens weakness of the liver : a solution of it in water preserves the hair and blackens it. Used with the Gumherb laden *لادن* and oil of roses *روغن گل*, it is efficacious in stopping looseness in children. It creates obstructions *سد*. Its *corrector* is almond oil *روغن بادام* Dose up to 1 *dirhem*. *Succedanea* are lintel *عندس* and sandal-wood *صندل* same quantity as the *Aqagia*. Some say the best is the juice of the box-thorn *حفض*, in Hindî called *رسوت*.

Aqagia is thus obtained :—Take the fruit of the tree when ripe, bruise, clean, (percolate ?) and boil it on an easy fire until it obtains a thick consistence, approaching to congelation, when pour it into moulds, and when settled it is fit for use. Some introduce into it the juice of the leaves likewise. Some say that

of the congelation is effected under the sun it is the best. The best method of washing it is thus: Rub it well in water, and take that which gathers on the surface and make lozenges of it.

It is worthy of knowing that *Aqaia* is a compound of two essences, *Luteef* لطيف and *Kuseef* كشيف the finer and the grosser particles; the former is burning, sharp, acrid, and penetrating حارحاداذع غايص, and the latter earthy, costive, and obstructive ارضي قابض مسدد. When *Aqaia* is washed, the finer particles evaporate, and the grosser or earthy particles remain; consequently on some occasions, such as inflammations, the unwashed is used, and on other occasions, such as the diseases of the eye, the washed is used.

Remarks. Egyptian thorn, *Acacia*, *Mimosa Nilotica*, exudes white Gum Arabic. Juice of its pods is made into *Acacia vera*.

Acacia. The juice expressed from the pods of *Mimosa Nilotica*, inspissated to dryness.—*Gray's Supplement to the Pharmacopeia*.

SUMUGH or SUMGH, Arabic; *Fooqeemunoon*, Greek; *Qamooz*, Syriac; *Deenoon*, Roomee; *Ard*, Persian; *Uzdo*, Sheerazee; *Gond*, Hindi; *Gum*, English.

A fluid matter which exudes from the body of certain trees, and concretes and dries up. The gum of each plant is described under that plant. By the word صمغ Gum without any epithet is meant Gum Arabic, which is obtained from the *Oommegheelan* (*Moogheelan*) plant. The best is of a light yellow color, clear, transparent and bright صاف شفاف براق; and when put in water and allowed to rest in it for some time, it will not swell but completely dissolve, leaving no residuum whatever; a piece held in the mouth produces the same effect as the above.

Character. Hot in a temperate degree, and dry in the 2nd degree. *Jaleenoo* (*Galen*) says, hot in the 2nd degree.

Medical properties. It is viscous and demulcent ملايين i. e. soothing the chest, and is binding قابض. It (gives tone) strengthens the stomach and the intestines and preserves the bones; prevents defluxion on the chest, cough, صرفه and excoriation of the lungs, or peripneumony قرح ریه and harshness or soreness of the throat خشونت حلق and the windpipe قصبة ریه وسینه, it clears the voice, and prevents the determination of morbid humours to the chest انصباب مواد نزلي برسینه. If a piece of it be held in the mouth and suffered to dissolve gradually, or if it be taken in pills, or some proper medicines it assists expectoration نغث. From 2 to 3 *misqals*, it is efficacious in diarrhoea and abrasion of the intestines. Fried in oil of roses, it is good for sanguinary discharges from all parts of the body, excepting from the womb, and in piles بواسير. It stops diarrhoea. If 1 *misqal* of the gum, well ground and mixed in 1 *ougeah* of fresh cow's butter, be taken daily for three or seven days it will effectually stop flow of blood from the mouth, the chest, the lungs, الاله, and from all other

internal organs *اعضاء اخاي* excepting from the womb, and in piles. If taken with fresh goat's milk, it will have the same effect. With white of eggs (*albumen ovi*), it is good for burns by fire : a solution of it with rose-water dropped *قطر* into the eyes affected with the ophthalmia, *Sulaq* *سلاق* cutaneous eruptions in the eye-lids, and *Jurb* *جرب* itching, is highly beneficial in removing those complaints. It is injurious to excrementary discharges. Its corrector *مصلح* is *Kuseera* *كثيرا* gum tragacanth, and (it is said) rose-water and sandal-wood. Its succedaneum *بدل* is almond gum *صمغ بادام* and myrtle seed *حب الاس*.
 —*Mukhzun-ool Udweeyuh, by Moohummud Khasroo Khán.*

IX.—Proceedings of the Asiatic Society.

Wednesday Evening, the 7th June, 1837.

The Hon'ble Sir EDWARD RYAN, President, in the chair.

Dr. J. SWINEY, Lieut. M. KITTOE, Professor O'SHAUGHNESSY, G. W. BACON, and FRANCIS ROBINSON, Esqs. were elected Members of the Society. Mr. MUIR was proposed by Dr. FALCONER, seconded by the Secretary.

M. F. EYDOUX, Chev. Leg. Hon., Naturalist of the *Bonite* Corvette, solicited through Professor GOODEVE, the honor of being chosen a corresponding Member. Referred to the Committee of Papers.

The following reply from Government was received to the reference regarding the MACKENZIE MSS.

TO JAMES PRINSEP, Esq.

Secretary to the Asiatic Society.

SIR,

With reference to your letter, dated 10th September, 1836, I am directed to transmit to you the accompanying copy of a communication from the Government of Fort St. George, and to state for the information of the Asiatic Society, that the Right Honorable the Governor General of India in Council, has authorized the Government of Fort St. George to expend a sum not exceeding 7,000 rupees, in order to obtain from the Rev. Mr. TAYLOR an examination and collation of the manuscript works in the vernacular languages of India, collected by the late Colonel MACKENZIE, and the restoration of any that may be found to deserve it.

I am, Sir,

Your obedient servant,

H. T. PRINSEP,

Secy. to Govt.

*Council Chamber, }
 10th May, 1837. }*

Mr. TAYLOR estimates, that the preliminary collation and examination of the manuscripts, including the restoration and copying of those injured, decayed, or becoming illegible, as may appear desirable on investigation, may occupy about a year; and half a year more is allotted for those at *Calcutta**. Of the whole he is to give an analysis, whence it will be determined what shall be translated or published in original. He ventures to anticipate "some results from the enlightened recommendation of the Asiatic Society, that will justify their decision to the literary world, and furnish an important addition to our knowledge of history, mythology, philosophy, ethics, and local customs, modes of thinking and other habits of the people of South India."

A letter from the Secretary of the Asiatic Society of Paris, M. E. BURNOUF, communicating officially the grant of 1,500 francs per annum, for the

* We have none of the Tamul or Telinga MSS. in our library.

purchase of Sanskrit MSS. on account of the French Government, and requesting the Calcutta Society to undertake the commission.

The following letter from Capt. HARKNESS, Sec. Roy. As. Soc. of London was read.

*Royal Asiatic Society's House, 14, Grafton Street, Bond Street,
London, 24th January, 1837.*

SIR,

I have the pleasure to acknowledge the receipt of your letter of the 6th of June last, enclosing a bill on Messrs. MORRIS and Co. for £31 10s. the amount of your Society's subscription to the Oriental Translation Fund up to the year 1835, inclusive.

With reference to the last paragraph of your letter, I am requested to say that, as a body, the Oriental Translation Committee is precluded from taking any portion of the Oriental works (texts) you are now publishing; as it could not, consistently, with the objects of its institution, present them to its subscribers. Several of the Members, however, have expressed their intention of becoming, individually, subscribers to each edition, as completed; and I hope, also, to obtain a few subscribers from among the Members of the Royal Asiatic Society. In the meanwhile I trust that the powerful advocacy which the cause received in this country has been, long ere this, productive of much benefit. It was supported by the united influence and exertions of the Royal Asiatic Society, and the Oriental Translation Committee; and the result was confidently understood to be, that the Bengal Government was to be instructed, at least, to defray all the expense attending the publishing of the works which it had commenced to print, but which it had transferred to your Society to complete.

I have the honor to be, Sir,

Your most obedient humble servant,

Oriental Translation Committee.

H. HARKNESS, *Secretary.*

The Secretary observed, that

Captain HARKNESS' letter was the first official notice the Society had received from London of the fate of their memorial, regarding Oriental publications, sent home through the Government here, and in duplicate through the Royal Asiatic Society, in 1835. It appeared that, from motives of delicacy, the Council of the Royal Asiatic Society thought it right not to publish what had been done in the Annual Review of its proceedings, while the subject was still under consideration; but that the favorable result of the application to the Court of Directors being now generally known, they ventured to announce the success of their intercession. He thought, therefore, that it behoved the Society to notice the information they had long since possessed through the private correspondence of their English agent.

The deputation appointed by the Royal Asiatic Society to wait upon the Chairman, and Deputy Chairman, and upon the President of the Board of Control, consisted of the Right Honorable C. W. W. WYNN, President, Sir GORE OUSELEY, Sir A. JOHNSTON, Sir G. STAUNTON, Vice-Presidents, and Professor WILSON. Mr. WYNN opened the interview in both instances, and stated the case very clearly and sensibly, going into the general question—the impolicy of setting aside the native literature and institutions, and dwelling particularly on the assistance sought for the abandoned Oriental publications. Professor WILSON also delivered a long address (the substance of which was published in the form of two essays in the London Asiatic Journal). Sir GORE OUSELEY, and Sir A. JOHNSTON, followed; and the high authorities replied in set speeches, expressing a disposition to favor the application without any pledge to the line that the Court or the Board would pursue. The Court's reply was understood to be delayed through the lamented death of Mr. MILL, the historian of British India who had been empowered to draw it up.

This then was the moment for the Society, to shew its gratitude to the distinguished individuals whose influence and talents had been so warmly exerted in supporting their memorial. Professor WILSON and Sir GORE OUSELEY, were already on the list of their Members; to them nothing more than their warmest

thanks could be proffered : but to the Right Honorable President of the Royal Asiatic Society, to Sir ALEXANDER JOHNSTON, and to Sir G. STAUNTON, were due the highest compliment the Society was capable of paying.

He begged therefore to propose, that these gentlemen be elected honorary Members, without the usual form of reference to the Committee of Papers, and that letters of thanks be addressed to each for the cordial support they had given to the cause of Oriental literature.

After a few objections on the score of departure from established form, and want of full official information, the proposition was put from the chair and carried *Nem. Con.*

A letter from Professor RAFF, Secretary of the Royal Society of Northern Antiquaries at *Copenhagen*, acknowledged receipt of Asiatic Researches, xiii.—xviii., and forwarded the Society's Reports for 1836. One addressed to the English Members, contains an account of Iceland from the oldest Icelandic records.

Professor O. FRANK of *Munich* acknowledged receipt of the *Muhabbd-rat*, vol. ii.

The Secretary of the Antiquarian Society, ditto of the xxth vol. *As. Res.*

The following Report of the Committee of Papers on the subject of the Museum, was read :—

TO JAMES PRINSEP, Esq.

Secretary to the Asiatic Society of Bengal.

Report of the Committee of Papers on the Museum Question.

The Committee having perused Dr. PEARSON'S Report on the operations of the Museum for the second experimental year, and having examined the state of the objects of Natural History, acquired, set up, and arranged under his superintendence, is of opinion that the Society is much indebted to his zeal and exertions, and that the sum voted for the support of the Museum in May, 1835, and renewed in May, 1836, has been well bestowed and profitably expended.

2. That nothing less than the actual demand for the Society's income on other objects imperatively necessary, such as the publication of its Researches, and the repair of its premises, would warrant the withdrawal of support from a department every day becoming of greater magnitude and importance; but that the following estimate of the receipts and payments of the Society for the ensuing twelve months, renders this continuance of the Museum establishment on the Society's present means, inexpedient.

Estimated Receipts, for 1837-8.

Cash balance in the Bank of Bengal,	652	14	1
Interest on the Papers deposited with the Government Agent,	835	0	0
Quarterly contributions,	6,500	0	0
Allowance from Government for Oriental library,	936	0	0
	8,923	14	1

Estimated Charges.

Arrears of Establishment for March and April, 1837, ..	563	11	0
The Museum allowance for April,	213	5	4
Subscription to Journ. As. Soc., for 1836, not yet paid, ..	1,293	0	0
Establishment and charges for 12 months,	3,200	0	0
Subscription to the Journal Asiatic Society, for 1837, ..	1,500	0	0
Ditto to the Oriental Translation Fund in England, 10			
guineas per annum,	200	0	0
To printing 2nd part of the 19th vol. <i>As. Researches</i> , 2,500	0	0	0
Cleaning and painting the house exclusive of any alte-			
ration and repairs,	900	0	0
	10,370	0	4

Deficiency, Co.'s Rs... 1,446 2 3

without estimating even a reduced allowance for the maintenance of the Museum.

3. That, viewing the maintenance of the Museum as a national object, and calculated to be of immense importance to science if placed upon a footing of efficiency, with a professional Naturalist at the head, directing researches and

systematizing information obtained from various sources, both public and private, in all the branches of physical science, but more particularly in regard to the Natural History of British India and Asia at large; it is incumbent on the Society to make a full and urgent representation to Government on the subject, and to solicit such support as is accorded in most other countries to similar institutions of national and scientific utility.

That historical, antiquarian, and statistical researches, although they may not demand so large an outlay as the prosecution of physical inquiries, merit equally the Society's attention, and the encouragement of Government, and should be included in the proposed representation, and that therefore a yearly grant of 10,000 rupees should be solicited in aid generally of the objects of the institution.

4. That pending the application to Government for pecuniary assistance, it is desirable to maintain the Museum on its present footing, and to retain the services of Dr. PEARSON as Curator, from month to month, until the question be decided.

EDWARD RYAN,

For the Committee of Papers.

Proposed by Mr. W. CRACROFT, seconded by Mr. E. STIRLING, and carried unanimously, that the Report be adopted by the Society.

The Secretary then read draft of the proposed application to Government, which was ordered to be circulated in the Committee of Papers and forwarded without delay.

Library.

The following Books were presented.

Straker's Catalogue of a collection of Oriental MSS. for sale in London.

Commentaire sur le Yaçna l'un des Livres Religieux des Parses, par. M. Eugene Burnouf, Membre de l'Institut, Professor de Sanscrit au College de France, tome 1. Part II.—*by the author.*

Memoirs sur Deux Inscriptions Cuneiformes trouvées pres d'Hamadân et qui font maintenant partie des papiers du Dt. Schulz, by ditto—ditto.

Memoire sur le Guacharo (*Steatornis Caripensis*) (Humboldt) par M. L'Herminier. D. M. P.—*by M. Fortuné Eydoux through Professor Goodeve.*

Ditto sur L'Dodo, autrement Dronte (*Didus ineptus*), par H. D. De Blainville—ditto ditto.

Gita Govinda Jayadevae Poetae Indici Drama Lyricum, by Christianus Lassen—*presented by the author.*

Journal of the Royal Asiatic Society, No. VI.—*by the Roy. As. Soc.*

Census of the Armenian population of the city of Calcutta, by Johannes Avdall, Esq.—*by the author.*

The following books were received from the Oriental Translation Fund.

Harivansa, or Histoire de la Famille de Hari, par M. A. Langlois, tome 2.

Laili and Majnun, a Poem, from the original Persian, by James Atkinson, Esq.

The History of the Temple of Jerusalem, translated from the Arabic, with Notes and Dissertations, by the Rev. James Reynolds, B. A.

Kan-ing p'ien, Le Livre des recompenses et des Peines en Chinois et en Francais, par Stanislas Julien.

Chronique D'Abou-Djafar Mohammed Tabar, fils de Djarir fils d'Yezid, par Louis Dubeux, tome 1.

The following books were received from the Booksellers.

Lardner's Cabinet Cyclopaedia—*Russia*, Vol. II.

—————*Reformation*, Vol. II.

—————*Swainson's Birds*, Vol. I.

Wellesley's Dispatches, Vols. II. and III.

Correspondence of Clarendon and Rochester, and two vols. of Lardner's Encyclopaedia received from home at the charge of J. S. STOPFORD, Esq. to replace those lost by the wreck of a pinnace last year.

Baboo RAM COMUL SEN presented a copy of the catalogue of the Sanskrit works in the College of Benares, for publication with the catalogue of the Society's books now in the press.

The Government of Bombay presented 5 copies of Lieutenant T. S. CARLESS' Survey Report of the Indus navigation below *Hyderabad*.

The Right Honorable the Governor General forwarded a copy of Professor WHEWELL'S Researches on the Tides, 6th series: with a request that the Society would undertake to promote inquiries on the Indian coasts to complete the theory of cotidal lines for the Bay of Bengal, towards which the Government would be happy to contribute its aid.

This sixth series of Professor WHEWELL'S researches gives the results of an extensive system of combined observations in Europe and America in June 1835, which have produced a very material improvement in the map of the cotidal lines before published.

The most curious and important branch of the investigation is that for determination of the *diurnal inequality*, or difference between the day and night tide, which depends on the declination of the moon north or south of the equator. The existence of this inequality has long been known, but its laws have been misunderstood, and it has never been attended to in tide tables, though of material importance in the navigation of river mouths and shallow seas.

It was resolved that a circular should be addressed to members and correspondents of the Society residing on the coast stations, requesting their aid in procuring data for the tides of the Indian Ocean, and furnishing a copy of Professor WHEWELL'S instructions, printed in the Journal in 1833.

Mr. W. H. MACNAGHTEN presented two works in the Marhatta and Hindí languages: the *Siddhánta Siromani prakasa* by SUBHA'JÍ BA'PU, and the *Bhugola saro likhyate*, by SRI UNKARA BHAT JOSHI, written for the purpose of explaining the correct system of astronomy to their countrymen.

Mr. MACNAGHTEN also exhibited to the meeting two handsome silver emblematical inkstands, representing a jotishi pandit seated between two globes, expounding their use from the Siddhántas—and around the stand, richly embossed, the twelve signs of the zodiac—a Sanskrit couplet on each expressing that it was presented by the Governor General in Council in token of approbation of the astronomical learning and zealous endeavours of the pandits to enlighten their countrymen. The following extract of a letter from Mr. WILKINSON, Governor General's Agent at Bhilsa, describes what they had done to deserve so high a compliment.

"I had shortly before entertained in my private service a Siddhántí who possessed a higher degree of knowledge of his profession, and having had an opportunity of making myself whilst at *Kota* in some degree acquainted with the Hindu astronomical books, I had communicated a knowledge of them to my own Shástrí, by name SUBHA'JÍ BA'PU, a man of wonderful acuteness, and intelligence, and sound judgment, and to UNKARA BHAT, one of the principal Joshís of this part of *Malwa*. The arguments by which I had for the previous eight years of our connexion in vain endeavored to impress on SUBHA'JÍ BA'PU a conviction of the truth of the real size and shape of the earth and of other important physical facts, now carried to his mind the clearest conviction when shewn to be precisely the same as those of their own astronomical authors. His was the master mind; and it exercised its influence over the minds of all the other pandits. He was lost in admiration when he came fully to comprehend all the facts resulting from the spherical form of the earth, and when the retrogressions of the planets were shewn to be so naturally to be accounted for on the theory of the earth's annual motion, and when he reflected on the vastly superior simplicity and credibility of the supposition that the earth had a diurnal motion, than that the sun and all the stars daily revolve round the earth, he became a zealous defender of the system of Copernicus. He lamented that his life had been spent in maintaining foolish fancies, and spoke with a bitter indignation against all those of his predecessors who had contributed to the wilful concealment of the truths that once had been acknowledged in the land.

"SUBHA'JÍ BA'PU'S first care was how he was to enlighten the people of *Chanda* and *Nagpore*, the land of his birth. At *Bombay*, *Calcutta* and *Madras*, and at *Dehli* and *Agra*, and here also, the truth he said must spread, but how will the mid-land of *Nagpore*, visited by no travellers from foreign countries, accessi-

ble to no ships from other islands, and maintaining no schools,—how will the eye of its population be opened? I recommended his embodying all the facts he had learned in a treatise in Marhatha. He immediately undertook the work. I have got it printed, and I now have the honor of submitting two copies of the work, with a request that they may be presented to the Governor General of India.

“It is a work which will bear the test of even a severe criticism. It is full of philosophical reflections. From the different productions of different countries mutually necessary he argues the intention of providence to unite all mankind by commerce in the bonds of an interested affection. He hence infers the restrictions laid on Hindus against travelling to foreign countries to be violent and unnatural. He assails the folly of astrological predictions, and upholds the wisdom and mercies of Providence in veiling the future from our curiosity, and in keeping us all instant in our duties by an unfailing hope. He leaves none of the numerous vulgar errors held by all Hindus in connection with his subjects of geography and astronomy to pass without a complete and satisfactory refutation.

“UNKANA BHAT, who holds the next rank in talent and usefulness, has written a free Hindi version of SUBHA’JI’ BA’PU’S book on the Paurānic, Siddhāntic and Copernican systems.”

Read a letter from Lieutenant KITTOE, stating that he had dispatched a cart to *Tumlook* to take down the *Bhubaneswar* slabs, the restoration of which had given the greatest satisfaction to the priests and people.

Lieutenant KITTOE also forwarded copies of the principal inscription in the old *Lāt* character at *Aswastuma* near *Dhoulée* in *Orissa*, with a short account of the caves and temples discovered there by himself and a map of the place.

[This inscription will be seen to have arrived at a most fortunate moment.]

Captain SMITH, Engineers, forwarded accurate facsimiles of the inscriptions at the Buddhist monument of *Sanchi* near *Bhilsa*; with a paper describing their position; and

Captain W. MURRAY presented some beautiful drawings of this very curious mound, and of the highly ornamented stone sculpture of its gates and frieze.

The Secretary read a note on the inscriptions, which had proved of high interest from their enabling him to discover the long-sought alphabet of the ancient *Lāt* character (or No. 1 of *Allahabad*)—and to read therewith the inscriptions of *Delhi*, *Allahabad*, *Bettiah*, *Girnar* and *Cuttack*—all intimately connected, as it turns out, in their origin, and in their purport.

Lieutenant KITTOE also presented facsimiles of a copper grant in three plates dug up in the *Gumsur* country, of which the Secretary with the aid of KAMALA KANT Pandit supplied a translation.

It relates to a grant of land by the *Bhanja* rājas to a brāhman named *Bhand-reswara*.—A lithograph will be published shortly.

The Honorable G. TURNOUR transmitted a paper on an examination of the Pālī Buddhistical Annals, including a translation of the *Aṭṭha kathā* of BUDDHAGHOSO, and a table of the *Pitakattayan*.

This paper will appear, at as early a period as possible.

Major J. SLEEMAN, communicated the first part of his *History of the Gurha Mundela Rājas*.

We shall also hasten to lay this before our readers.

Lieutenant SIDDONS forwarded a translation of the commencement of the *Dadupauthi Grantha*, with a promise to continue the same should it prove acceptable.

Professor WILSON formerly intended to have done the same thing—the translation of DADU’S moral instructions is highly interesting.

A list of the native tribes in *Sinde* and specimen of their language was communicated by Captain ALEXANDER BURNES from *Bahāwalpur*.

Physical.

G. LOCH, Esq. C. S. forwarded for presentation to the museum a second collection of the butterflies and insects of *Silhet*.

Dr. T. CANTOR presented some fragments of bones *perfectly fossilized*, extracted from the superficial clay at *Rangafulla* below *Diamond Harbour*.

In these bones the animal matter is entirely replaced by iron and carbonate of lime, although they were imbedded in quite a modern alluvium. Their discovery throws a new light either on the period required for fossilization, or on the age of the alluvium.

Mr. W. T. LEWIS of *Malacca*, presented the model of a Chinese double bellows for the museum; also some tin and gold ore.

The Tapir sent up by Lieutenant MACKENZIE had, with the Committee of Papers' sanction been made over to the Secretary, it being out of the Society's views to keep living animals.

Mr. B. H. HODGSON forwarded some beautiful Zoological drawings for inspection on their way to *Europe*; also two bottles of the snakes peculiar to *Nipal*.

Lieutenant HUTTON presented a notice of the Indian Boa *Python Tigris*.

A letter from Professor S. VON DEM BUSCH, of *Bremen*, proposed exchanges of land and fresh-water shells and other objects. Referred to the Curator.

Dr. T. CANTOR presented drawings and a notice of one of the fossils in the Colvin collection which had been cleared from matrix for the purpose of examination.

It proves to be the skull of a gigantic fossil Batrachian, and by comparison of the relative measurements of the common frog, it must have belonged to an animal of 40 inches in length!—a proportion between fossil and recent species which has its parallel only in the neighbouring family of reptiles, the salamanders, of which the specimen from the Oeningen schist known by the name of *Homo diluvii testis*, measured three feet in length.

The following notice of a curious natural phenomenon observed in the Red Sea was communicated by Captain A. BURNES from *Bahawalpur*.

Extract of a letter from Lieutenant WELSTED of the Indian Navy, dated Mount Sinai, September 26th, 1836.

"You once expressed a wish to know something of the *Djibbel Narkono* or sounding mountain, concerning which there has been so much doubt and discussion in *Europe*. I visited it on my way here—it is situated on the sea shore about eight miles from *Tor*. A solid slope of the finest drift sand extends on the sea face from the base to the summit (about six hundred feet) at an angle of about 40° with the horizon. This is encircled or rather semicircled, if the term is allowable, by a ridge of sandstone rocks rising up in the pointed pinnacle, and presenting little surface adapted for forming an echo. It is remarkable that there are several other slopes similar to this, but the sounding or rumbling, as it has been called, is confined to this alone. We dismounted from our camels, and remained at the base while a Bedoin scrambled up. We did not hear the sound until he had attained a considerable height. The sound then began rolling down, and it commenced in a strain resembling the first faint notes of an Eolian harp, or the fingers wetted and drawn over glass—increasing in loudness as the sand reached the base, when it was almost equal to thunder. It caused the rock on which we were seated to vibrate and our frightened camels (animals you know not easily alarmed) to start off. I was perfectly astounded, as was Captain M—— and the rest of the party. I had visited it before in the winter month, but the sound was then so faint as to be barely evident, but now the scorching heat of the sun had dried the sand and permitted it to roll down in large quantities. I cannot now form the most remote conjecture as to the cause of it. We must not I find now refer it to the sand falling into a hollow, that might produce a sound but could never cause the prolonged vibrations, as it were of some huge harp string. I shall not venture on any speculation, but, having carefully noted the facts, I shall lay them, on my arrival in England, before some wiser head than my own, and see if he can make any thing out of them."

Meteorological Register, kept at the Assay Office, Calcutta, for the Month of May, 1837.

Day of the Month.	Observations at 10 A. M.						Calculated Humidity.				Observations at 4 P. M.						Calculated Humidity.		Register Thermometer extremes.		Wind.	Weather.				
	Old Stand. Barometer at 32°.	New Stand. Barometer reduced.	Thermome- ter in air.	Depression of wet-bulb.	Do. by Les. lie's Hygro.	Dew-point.	Hair Hy- grometer.	(centesimal tension of vapour by wet-bulb.	Do. by hair hygrom.	Ditto by dew-point.	Thermome- ter in air.	Depression of wet-bulb.	Do. by Les. lie's Hygro.	Dew-point.	Hair Hy- grometer.	Centesimal tension of vapour by wet-bulb.	Do. by hair hygrom.	Ditto by dew-point.	Cold on roof.	Heat in sun's rays on roof.		Rain.	10 A. M.	4 P. M.	Morning.	Evening.
1	29.762	29.721	85.0	9.1	8.7	74.7	87	65	72	60	60	60	60	72.1	80	33.3	12.7	59	52	79.8		1.20	se.	cumuli.	threatg.	
2	.820	.780	83.4	9.2	8.7	74.4	91	80	80	80	80	80	80	72.2	84	33.3	12.1	55	55	69.0		1.25	se.	overcast.	hazy.	
3	.832	.797	81.3	9.2	8.4	74.0	86	70	70	70	70	70	70	72.0	81	33.3	13.7	65	65	69.0			ne.	do	cumuli.	
4	.769	.735	85.3	9.0	9.0	73.9	88	62	74	70	69	69	69	71.7	89	33.3	13.9	69	76	67.9		0.05	ssw.	cir. cum.	cir. str.	
5	.838	.808	83.1	6.4	5.3	74.1	92	72	82	75	709	662	83.8	11.5	102.7	85	51	68	52	73.2			sw.	cir. str.	cumuli.	
6	.846	.810	85.6	7.3	6.4	74.0	91	70	80	70	708	661	82.9	15.5	168.9	78	45	56	47	78.8			sw.	cir. str.	fine.	
7	.828	.818	87.4	7.4	6.6	76.8	92	70	82	72	700	639	94.0	11.2	107.7	85	60	68	59	73.0			sw.	do	do	
8	.769	.797	88.0	7.2	6.0	77.8	91	71	80	73	622	573	86.4	14.4	176.3	80	51	51	48	73.0			sw.	do	do	
9	.853	.800	83.7	6.7	5.3	73.0	95	71	89	71	712	656	92.5	16.7	170.6	88	39	51	43	71.8		.50	N.W.	drizzle.	overcast.	
10	.831	.757	86.1	6.9	6.3	75.2	91	71	80	71	720	668	90.7	10.5	116.2	83	60	68	58	74.8			sw.	do	clear.	
11	.794	.755	88.1	14.3	13.0	67.8	78	45	56	53	656	606	96.2	20.0	19.4	71	34	45	46	76.7			sw.	do	hot wind.	
12	.756	.706	89.7	7.9	6.7	77.5	90	70	78	68	603	534	98.3	21.9	20.3	68	31	40	40	80.0			sw.	do	clear.	
13	.684	.636	90.7	12.0	11.3	74.3	82	55	63	61	522	471	100.4	27.7	98.6	66	19	31	35	78.0			ssw.	do	clear.	
14	.690	.647	90.1	10.1	10.1	75.2	87	62	72	62	547	499	98.6	13.4	139.0	71	37	49	43	80.0			sw.	do	do	
15	.689	.643	91.2	9.3	9.3	77.7	88	66	74	67	544	484	99.1	13.2	153.3	73	37	51	44	79.8			sw.	do	do	
16	.670	.633	91.3	9.0	9.4	77.3	88	66	74	65	565	505	96.5	11.5	120.7	80	60	68	57	82.3			sw.	do	clear.	
17	.713	.658	90.2	7.6	8.2	77.7	89	70	78	69	570	492	98.3	14.7	116.0	76	80	51	59	80.0			se.	do	fresh breeze.	
18	.709	.622	91.0	8.3	9.1	77.2	89	68	76	65	569	498	94.9	12.7	127.4	75	55	63	52	79.0			se.	do	cloudy.	
19	.647	.577	89.4	9.9	12.0	73.0	84	62	66	60	534	454	95.6	17.5	17.8	71	80	50	52	73.6			sw.	do	clear.	
20	.597	.538	90.1	9.5	9.6	75.0	89	64	76	64	512	434	94.6	14.8	14.5	73	60	50	48	75.0			sw.	do	fresh breeze.	
21	.624	.566	90.0	10.4	10.6	75.0	87	60	72	62	505	441	95.9	15.9	15.5	73	50	50	49	73.6			sw.	do	clear.	
22	.640	.589	90.0	10.6	10.6	74.4	85	60	68	59	553	467	96.3	13.9	14.4	73	80	50	49	78.5			sw.	do	hazy.	
23	.669	.609	92.3	11.7	11.7	76.0	85	57	68	60	576	499	95.3	13.9	14.2	74	82	52	53	85.0			sw.	do	fine.	
24	.692	.625	90.6	10.2	10.6	74.0	87	58	70	60	626	495	96.3	14.1	16.8	73	76	41	52	81.0			sw.	do	do	
25	.715	.655	91.3	11.3	11.3	75.2	86	58	72	60	626	544	95.8	14.6	14.6	72	81	50	61	48	79.6			sw.	do	do
26	.743	.689	91.3	10.7	11.5	75.0	87	60	72	60	604	588	95.6	14.4	14.6	73	81	51	61	51	78.5			sw.	do	do
27	.683	.631	91.4	10.1	10.4	75.7	88	62	74	61	604	542	94.5	15.2	15.6	71	79	47	57	48	83.0			sw.	do	fresh breeze.
28	.616	.575	90.4	9.3	1.0	75.0	89	60	76	61	515	460	94.1	11.7	12.0	76	87	58	72	85.0			sw.	do	do	
29	.553	.498	90.4	7.7	8.2			70	82	61	420	366	94.5	11.5	11.4	76	86	59	70	83.0			sw.	do	haze.	
30	.467	.416	92.2	7.5	8.2	76.5	92	72	82	61	360	293	97.1	12.4	12.6	76	84	57	66	83.0			sw.	do	cumuli.	
31	.494	.423	93.3	8.6	9.3	76.6	90	68	78	59	378	302	100.1	14.8	14.6	75	80	52	59	83.0			s.	do	very hot.	
Mean	29.709	.660	89.0	9.0	8.9	75.2	88	64	74	65	29.585	.523	94.8	14.9	14.7	73.2	79	49	59	77.8		3.05	South.	Very hot.		

Finding so great a discrepancy in the tension shewn by the hair hygrometer I have recomputed the hundredth degree or extreme moisture and find it to reach 102.5 which will necessitate a correction of the tensions to the amount of about 6 per cent. being a new hair, it had not become properly stretched when first set up.—J. P.

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JOURNAL

OF

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I.—*Some account of the Wars between Burmah and China, together with the journals and routes of three different Embassies sent to Peking by the King of Ava; taken from Burmese documents. By Lieutenant-Colonel H. BURNEY, Resident in Ava.*

[Continued from page 149.]

In the 30th No. of the *Gleanings of Science* I have given some account of the Chinese caravans, which come principally from *Theng-ye-shew* and *Táli-fú* in *Yunan*, not only to *Ava* but to all the Shan towns subject to *Ava*, *Maing:Leng-gyih*, *Kyaing:toñ*, *Theinní*, *Mó:né*, *Thibó*, &c., as well as to *Zenmay* and the Shan towns subject to *Siám*. A party of Chinese also annually proceed from *Santá-fú* to *Mō:gaung* and *Payen-dueng* for the purpose of procuring amber and the noble serpentine, or the stone so much prized by the Chinese and called by them *Yú*.

The emperor of *China* appears never to have surrendered the *Tsó:buás* of *Theinní*, *Bamó* and *Mō:gaung* agreeably to the terms of the treaty of *Bamó*; nor can I find a notice of any correspondence between the sovereigns of the two countries until the reign of the present king of *Ava's* grandfather, *MEN:DARÁ:GYIH*, Symes's *MINDERAGEE*. That monarch, shortly after he put his nephew to death and seized the throne in the year 1781, appears to have deputed a small party for the purpose of opening a communication with *China*, but the envoys were seized by the Chinese and sent up to the north of *Peking*, to the Tartar province of *Quantong*. In 1787, however, an embassy came to *Ava* from *China*, and I will now give a free translation of the journals and routes of three different embassies, which were sent to

Pekin by the late and present kings of *Ava*. But before giving these translations it may be proper to explain the system which I have adopted, for writing Burmese and Chinese names in the Roman character.

I have followed, as far as I was able, Sir WM. JONES's system, excepting that I have used the prosodial long and short signs, instead of the acute and grave accents, for denoting long and short vowels*; The Burmese have a very bad ear for discriminating new sounds, and, unfortunately, their written character will not admit of their writing or pronouncing many foreign words. They can write *ing* only as *ĩ*, *ín*, *en* or *eng*; *ang* as *en* or *eng*; *ong* as *oŭn*, and *f* as *pĥ*, or *bĥ*. *R*, they seldom sound but as *y*, and they use a soft *th* for *s*. A final *kg*, or *t*, is often scarcely sounded, if not entirely mute, and I denote this by underlining such letter. The Burmese also change the sound of the initial letter of the second or third syllables of compound and derivative words, sounding *b* as *p*; *k* and *k,ĥ* as *g*; *t* and *t,ĥ* as *d*; and *ts* and *tsh*, as *z*. But in copying Chinese names from the Burmese, I have always given the legitimate sound of all such letters in the Roman character. The Chinese, according to DU HALDE, have an *h*, so strong, that it is entirely guttural, and the Burmese envoys apparently attempt to express this Chinese sound of *h*, by the double consonant *sh* or *shy* of their own alphabet. The Burmese do not sound the two letters which they have derived from the Devanágari च, छ, as *cha* and *ch-ha*, which the Siamese and Shans do, but as a very hard *s*, and its aspirate, pronounced with the tip of the tongue turned up against the roof of the mouth, and best expressed, in my opinion, by *ts* and *tsh*. The Chinese appear to have the same sounds, expressed by DU HALDE by the same Roman letters *ts*, and *tsh*; the first of which, he observes, is pronounced as the Italians pronounce the word *gratia*. For the Burmese heavy accent, marked something like our colon (8), and used to close a syllable, when ending in a vowel or nasal consonant, with a very heavy aspirated sound, I have used two *points* in the middle of a word, and the letter *h*, usually, at the close. Our prosodial short mark will best express the Burmese accent marked as a point under a letter, and intended to give a syllable a very short sound. All the Burmese envoys write the names of the Chinese

* Those accentual marks being best adapted for describing the peculiar high and grave tones, in which the same letters are sounded in the Siamese and Shan languages. [We have, however, for want of type been obliged to adhere to the accented system—the absence of an accent denoting the short and its presence the long sound.—ED.]

cities of the first second and third class in Burmese, as *p, hu*, or *b, hu*, *t, sú*, or *tso*, and *shyen*; but I have set down these names as they usually appear in our maps of *China*, as *fū*, *chow* and *hien*.

The following table will show the power of the vowels as used by me.

a, as in America.

á, as in father.

e, as in men.

ê, broad as *ey* in they, or *ay* in mayor, or *a* in name.

i, as in pin.

í, as in police, or *ee* in feet, and *a*.

ì, the same with a grave sound like *e* in me.

o, as in toto.

ó, the same sound prolonged, or as in lone, sown.

ô, broad as in groat.

ô', the same sound prolonged.

u, as in Italian, or like *oo* in foot.

ú, the same sound prolonged, or *oo* in mood.

The Siamese and Shan letter, which is sounded something like the French letters eu, I mark, as the Catholic Missionaries in *Siam* have long marked it, thus, u' and u'.

ai,	} Each of these vowels is pronounced as when separate, excepting that the sound of the second is a little more prolonged than that of the first vowel. Kaing, Ka-ung, Ko-un, mē-in, yu-on.
au,	
ou,	
ei,	
uo,	

The letter *ng* is pronounced something like the same letters in the French word *magnanimité*, but as a final, it is usually sounded as a nasal *n*. When followed by the heavy accent I have usually expressed the *g*, in the Roman character.

The prosodial short sign is used to shorten the sound of some of the above vowels and diphthongs.

According to the above system I have nearly completed a comparative vocabulary of the Burmese, Siamese, Taung-thú and three Shan dialects.

Of the towns and places in *China* mentioned by the Burmese envoys in their journals and routes, I shall set down within brackets the proper names of such as I can trace in DU HALDE.

In the year 1787, intelligence was brought to *Ava*, that an embassy from the emperor of *China* had arrived at *Theinnú*, and as the ceremony of the public audience given to these ambassadors corresponds in

many points with that observed at the audience given by the present king of *Ava* to the British Resident, on his first arrival at *Ava* in 1830, I extract a description of it from the 33rd volume of the *Burmese Chronicles* :

“On Tuesday, the 3rd of April, 1787, the king of *Ava* (MEN:DARA:-GYI’H) received a report from the Tsô:buáh and officers of *Theinní*, that a Chinese embassy, consisting of upwards of 300 men with E-TSHÔ:YE’ as the chief envoy, had arrived at *Theinní*, with a letter on gold and costly presents from the emperor of *China*, for the purpose of establishing peace and friendship between the two great countries. His Majesty ordered the Chinese embassy to be conveyed to the capital (at that time *Amarapúra*) by the road leading from *Theinní* through *Thibô*, *Maing:toân*, *Maing:kaing*, *Yauk-zauk*, *Pwê-lha*, and *Yuá:ngân*, down by the *Nat-t,heit* pass and the road along the southern paddy lands (*Taung-bhetlay*).—The Chinese mission accordingly left *Theinní* on Sunday, the 6th of May, 1787, and on reaching *Nyaung-ní-beng* (red *pepul* tree), embarked in boats (on the *Myit-ngay*) and came to *Yan-aung ghât* at *Amarapúra*, where they landed and took possession of the buildings constructed for their accommodation. The emperor of *China’s* letter was duly translated on Tuesday, the 29th May ; and on Sunday, the 3rd of June, the embassy was received by the king in the following manner :—

“The streets and lanes of *Amarapúra* having been ornamented, the officers of the *Lhuot-tô* and *Yoŭn-dô**, dressed in their uniforms with ear-rings, having taken their proper places within those buildings ; the white elephant, and *Shue-wen*, the elephant rode by the king, and other elephants with all their trappings, on being drawn out, and the body guard and other troops formed in front of the *Lhuot-tô* and hall of audience, and within the court-yard of the palace, the Chinese ambassadors were brought from their house at the *Yan-aung ghât* in the following order :—First, two officers with long rods ; then musqueteers to the right and left ; then, seated upon an elephant, the king’s writer, *YANDA-MEIT-GYÔ-DEN*, dressed in full uniform, bearing an octagon betel cup containing the emperor of *China’s* letter ; next a sedan chair with the box containing the images of *Byamhá* ; then a sedan chair with a box of royal presents ; then another sedan chair with another box of presents ; then ten horses intended as presents ; and then followed the principal Chinese ambassador, E-TSHÔ:YE’, mounted on an elephant with housings of scarlet broad cloth edged with silk. After him came four of the junior envoys on horseback ; and after them, the officers appointed to escort the mission.

“The procession entered the *Tset-shyen* gateway on the western face of the city, and stopped on reaching the *Yoŭn-dô*. The box bearing the royal letter was deposited on a fine white mat with an ornamental border spread in the verandah of that building, where the ambassadors also were

* The house in which the ministers of state assemble and the Court of justice.

placed, the royal presents being arranged on each side. The princes of the blood and the other great officers of state then passed into the palace in state, surrounded by their respective suites and with all their insignia of rank. Last of all passed the heir-apparent, the glorious AIN-YE-MENG. When all was quiet the ambassadors, preceded by the royal letter and presents, were taken in, the ambassadors being made to stop and bow their heads repeatedly along the whole road in the usual way*. The king's writer bearing the box containing the royal letter, stopped not far from the eastern steps of the hall of audience, when a Thán-dô-zent† went down and took the letter up, and placed it on a white mat that was spread for the purpose. The ambassadors ascended by the northern steps, and took their seats at the appointed place; whilst all the presents were put down on the ground in front of the hall of audience. The whole being assembled, the lord of many white elephants, the lord of life, and great king of righteousness, wearing the *Mahá-muni* crown of inestimable value, and the principal queen, dressed in the *Gana-matta-pa-kua* jewel, surrounded by all the other queens and concubines, came forth, and on the *U-gen* folding doors being opened by the princesses, his majesty the king and the principal queen took their seats on the *Tháháthana yázá* throne. The state drum, beat when his majesty comes out, was then struck three times forcibly and three times gently, and the whole band played. When the music ceased, the eight consecrating Bráhmans performed the customary ceremony of consecration, and the flowers and water presented by the Bráhmans, were received by BAUNG-DÔ-PYEN and NANDA-THEN Khaya in a gold cup ornamented with the nine precious stones.

“The Ná:khân-dô‡, ZEYA NÔRAT,HA, then brought to the king's notice seven images of BUD'DH which his Majesty was to give in charity. His Majesty observed, ‘Let the royal gift be suitably escorted and delivered;’ which order was repeated by the Ná:khân to the Shue-tait-wún, who after ordering the royal drum to be beaten, conveyed the images out of the hall of audience.

“The Thán-dô-găn§, MENG-NGAY-THIRI, then came up the steps used by the king, and kneeling at the usual place, read out a list of the royal presents. The Ná:khân-dô, KYÔ-ZUA'NÔ-RAT,HA', next proceeded right in front of his Majesty, and kneeling, read out from an ornamented book, the following translation which had been made of the emperor of *China's* letter.

‘The elder brother, UDI' BUA'¶, (emperor of *China*,) who rules over the great kingdoms to the eastward and a multitude of umbrella-wearing chiefs, addresses affectionately his younger brother, the lord of the white, red and mottled elephants, who rules over the great kingdoms to the westward and a multitude of umbrella-wearing chiefs, lord of the amber

* The British resident refused to make these obeisances.

† Register of royal orders.

‡ Royal hearer or reporter. § Receiver of royal mandates.

¶ Udi, I am told, means east in the Páli language.

mines, the sun-descended king and master of the golden palace. The ancestors of the two brothers have inherited and ruled in succession in this *Zabādīpā* island, lying to the southward of *Myen:mō* mount, from the first creation of the world; and the two brothers are enjoying in the eastern and western great kingdoms, prosperity equal to that of the *Thagyá:-Nat**, with very great glory, power, and authority. From the time even of our ancestors there has been no enmity. The younger brother, the sun-descended king, is an independent sovereign, receiving the homage of great kingdoms, and of an hundred umbrella-wearing chiefs. The elder brother also is an independent sovereign, receiving the homage of great kingdoms, and of an hundred umbrella-wearing chiefs. If the two brothers enter into a permanent agreement and friendship, conformably to the union which has subsisted between them uninterruptedly in former states of existence, it will be like a nail driven in (as firm) to their posterity. The elder brother, who possesses the great kingdoms, and the golden umbrella and palace to the eastward, as well as his queen, sons, daughters, nobles, officers, and the inhabitants of his country, are in the enjoyment of health, peace, and happiness; and he desires to learn, that his younger brother, who possesses the great kingdoms and the golden umbrella and palace to the westward, the master of the golden palace, as well as his queen, eldest son, the heir-apparent, his other sons and daughters, nobles, officers, and all the inhabitants of his country, are also in the enjoyment of health, peace, and happiness.

‘For one reason, because friendship has existed from former states of being; and for another, because the elder loves the younger brother, he sends, with a royal letter on gold, a piece of gold, and desires that two pieces of gold may become like this one piece. It is now seventeen years since the gold and silver road, and gold and silver bridge have not been opened or traversed between the elder brother and younger brother, pursuant to the arrangement made in 1769, that ambassadors of rank should pass between the two great countries, in order that a sincere friendship and esteem might arise. When friendship has been established between the two great countries, each must receive favors from the other. The elder brother has in front of his palace and worships eight images of *BYAMHA’ṭ*, which it has been the custom to worship from the creation of the world; but loving the younger brother, and desiring that he should worship in the same manner, the elder brother presents these images to the younger. If the younger brother worships them, his glory and power will be as resplendent as the rising sun. The son of the lord of *Kaing:mah*, who wears

* This is the Chinese *Tien*, or *Shang Tien*, lord of heaven, and the same as the Hindu god *Indra*, one of whose names, *Sugra*, although written in Burmese *Thugrá*, is pronounced *Thagyá*.

† *Byamhá*, written *Bramhá*, is a being of the superior celestial regions of the Buddhists.

a red umbrella and is always near the person of the elder brother, is sent to the younger brother with a royal letter on gold, and with the following presents :—

Eight images of *Byamhā*, cast in gold.

Eight carpets.

Ten pieces of gold cloth.

Ten horses.

‘ Let the younger brother, master of the golden palace, delay not after the arrival of this ambassador in his presence, to appoint ambassadors on his part, and send them with a royal letter on gold. When the son of the lord of *Kaing-mah* returns to the elder brother, it will be the same as if the royal countenance of the younger brother, the master of the golden palace, has been seen.’

‘ After the Nā:khān-dô Kyô-zua’Nô-rat,ha’ had read out the above royal letter, his Majesty said, ‘ E-TSHÔ: YE’, how many days were you coming from the capital of *China* to *Amarapura* ?’ The Nā:khān, Pŕô-cyih-mhu’, repeated the question to the Chinese interpreter, who translated it to the ambassador. The ambassador replied : ‘ Your Majesty’s slaves, owing to your Majesty’s excellent virtues, were one hundred and sixty-four days coming from the capital of *China* to your Majesty’s feet.’ This answer was translated by the Chinese interpreter to the Nā:khān-dô, who submitted it to his Majesty. The king then said : ‘ E-TSHÔ: YE’, when you quitted the capital of *China*, were my royal kinsman, the emperor of *China*, and his queen and children, and relatives all in good health ?’ The question was communicated to the ambassador as before, and the ambassador replied : ‘ When your Majesty’s slaves quitted the capital of *China* for your Majesty’s feet, your Majesty’s royal kinsman, the emperor of *China*, and his queen, and children, and relatives were all in good health ;’ which answer was submitted to the king in the same manner as before. The king then said : ‘ E-TSHÔ: YE’, go back quickly ; the emperor of *China* will desire to receive intelligence of every thing in this country.’ This order was communicated as before to the ambassadors, who bowed down their heads. The king then presented the principal ambassador, E-TSHÔ: YE, with five hundred ticals, a silver cup weighing eleven ticals, a ruby ring weighing one tical, and of the value of one hundred and fifty ticals, a horse with saddle and bridle complete, ten cubits of scarlet broad cloth, five pieces of cotton cloth, five pieces of handkerchief, one piece of chintz, two large lacquered-ware boxes, and one small one. To each of the four junior ambassadors his Majesty presented at the same time three hundred ticals, one silver cup weighing eleven ticals, one ruby ring weighing half a tical, and of the value of one hundred ticals, five cubits of scarlet cloth, two pieces of handkerchief, two pieces of chintz, a horse with saddle and bridle complete, a carpet, one large lacquered-ware box, and two small ones.

‘ The silver gong was then struck five times, and the drum, which is used when his Majesty enters the palace, was beaten, and his Majesty retired.

The ambassadors were first conveyed from the hall of audience to the eastern *Youm*, where they were made to stand until the princes and all the nobles and officers passed to their respective houses* ; after which they were taken to the house allotted for them, by the same route as that by which they had been before brought.

“ On Sunday, the 10th June, 1787, his Majesty addressed the following letter and presents to the emperor of *China*, and appointed LET-YUE:GYI/H MHU':, NE-MYO':SHUE-DAUNG, THÍHAGYÔ-GAUNG, and WELUTHA'YA, ambassadors on his part, to proceed to *China* in company with the Chinese ambassadors.

‘ The protector of religion, the sun-descended king of righteousness, bearing the name and title of *Thīri pawara wizayā nanta yatha tiri bawānā ditiyā dipadi pandita mahā dhamma rājā-dīrāja†*, owner of the white, red, and mottled elephants, and proprietor of mines of gold, silver, rubies, and amber, who rules over the great kingdoms and all the umbrella-wearing chiefs of the westward, affectionately addresses the royal friend, the lord of the golden palace, who rules over the great kingdoms and all the umbrella-wearing chiefs to the eastward. No enmity having existed between the two great eastern and western kingdoms from the first creation of the world, and both being independent sovereigns who have possessed a golden umbrella and palace from generation to generation, and the homage of a multitude of umbrella-wearing chiefs, the royal friend deputed the son of the lord of *Kaíng:mah*, who arrived at the great and golden city of *Amarapúra* on the 26th May, 1787. The royal letter and the presents consisting of eight images of the *A'batthara‡* *Byamhā*, ten carpets, ten pieces of gold cloth and ten horses, having been arranged in front of the throne and hall of audience, his Majesty, attended by the heir-apparent, his royal brothers and sons, and all his officers, came forth and sat on the throne, and caused the royal letter to be read out. His Majesty was exceedingly pleased to hear, that if a friendship like the union which has always existed in former states of existence between the kings of the two countries, and an agreement as fixed and permanent as a nail driven in, be entered into, it would be to posterity from generation to generation like two pieces of gold converted into one (as inseparable); and also, that the royal friend, the lord of the golden palace himself and his queen, royal children, and relatives and all his officers are in the enjoyment of health. The royal friend, lord of the golden palace, who rules

* The British Resident returned at once to his own house from the hall of audience.

† The meaning of the *Páli* words of this long title is thus rendered by the Burmese :—“ The illustrious, excellent and greatest conqueror, whose glory is boundless and substantial, who will rule over the three orders of beings with surpassing power, the wise and great king of righteousness, the king of kings.”

‡ *Abatthara* is the sixth of the 20 stages or stories of the superior celestial regions.

over a hundred umbrella-wearing chiefs to the westward, is also in the enjoyment of health as well as his queen, heir-apparent, royal children, and relatives, and all his officers. Friendship which had always existed in former states of existence, is now become a royal friendship. When the two great countries have established friendship, each must receive favors from the other. The eight images of *A'batthara Byamhá* which were sent with a desire that they might be worshipped by the royal friend, have been placed in a proper and suitable manner in front of the palace, under pyramidical buildings covered with gold and silver. Desire is also felt that approbation be given to the merit of constantly upholding and protecting the religion of the deity (*GAUDAMA*), who is full of glory and power, who can give relief to the kings of men, *Nats*, and *Byamhá*s, who has no equal in the three worlds, and who has been worshipped from generation to generation by the sun-descended independent kings, that have ruled over the great kingdoms to the westward. *NE MYÓ-SHUEDAUNG*, a nobleman who is in the immediate service of the royal friend, and *THÍHA GYÔ-GAUNG* and *WELUTHA'RA* have been appointed ambassadors to accompany the son of the lord of *Kaing:mah*, and are deputed with a royal letter on gold and with royal presents, consisting of four elephants, one hundred *viss* weight of elephant's teeth, an ivory helmet surmounted by a ruby, and another encircled with rubies and surmounted by a sapphire, two ruby rings, one sapphire ring, one *viss* weight of Mobyé stone, one piece of yellow-broad cloth, one piece of green broad cloth, ten pieces of chintz, ten pieces of handkerchief, ten carpets, one hundred books of gold leaf, one hundred books of silver leaf, ten *viss* weight of white perfume, four large lacquered ware boxes, and fifty small lacquered-ware boxes. Let the ambassadors return quickly and without delay, and when they return, it will be as if the royal friend had been met, and *conversed with.*"

On the return of these Burmese ambassadors from *Pekin* in the beginning of the year 1789, they submitted a report of their proceedings, of which report the following is a free translation :—

"We left *Amarapura* on the 24th June, 1787, and in twelve days' journey, on 6th July, arrived at the city of *Theinni*, where we stopped nine days for the purpose of recruiting the elephants intended as presents for the emperor of *China*. On the 16th July, we left *Theinni**, and in fifteen days' journey reached *Kaing:mah*, where we stopped more than five months, and transmitted to the golden feet a report of certain discussions, which took place between us and some Chinese officers there. On receiving his Majesty's orders that we should proceed, we left *Kaing:mah* on the 12th January, 1788, amounting altogether to one hundred and twenty-five men; and on the 23rd arrived at the city of *Shuen-lz*, which the Shans call *Maing:Tsan†*. Here we met two officers, *Tsoün-shue* and *Titâyin*, whom the *Tsoüntü* or Governor General of *Yunan* had deputed to meet us; and a report of our discussions with whom we forwarded to the golden feet.

* Shan name *Múng Senrí*.

† *Múng Chán*.

We had to wait again for more than five months, whilst the Tsoüntū sent a report of our arrival to *Pekin*. On the 25th June, 1788, the governor of *Maing:Tsān* received a letter from the Tsoüntū, ordering him to let the Burmese ambassadors advance; and on the following day, attended by the governor K_{HUA}'-TA'-LÔ:YE' and interpreter WU'N-TSOU'N-YE' with one hundred men, we left *Maing:Tsān*, and on the 1st July reached the city of *Tāthī* (*Tali* ?), where the Tsoüntū came from *Maing:Tshì* (*Yunan*), on the 12th July, to meet the royal letter and presents. On the 21st July, orders from the emperor of *China* reached the Tsoüntū, who informed us, that he had received the imperial orders to allow the ambassadors to proceed, and that the emperor had also ordered, that the envoys who had come from the great western country, from the royal friend and lord of the golden palace, should be conveyed to *Pekin* in fifty-one days; and that the Tsoüntūs, governors, Tītūs and officers, along the whole route, should treat the ambassadors with every respect, and at the regular stages supply them with provisions, and entertain them with music, plays, &c. The Tsoüntū further said, that similar orders had been sent to all the other officers along the route, and that he would prepare some presents for his Majesty the king of *Ava*, which he desired we should forward by some proper persons with a report of our proceedings. We accordingly sent DANUTAZAUNG:YE' and TSET-YAN-NHAING to *Amarapūra* with the Tsoüntū's presents, and left *Tāthī* on the 23rd July with thirty-seven men, attended by TAUKTAIT HÔTA'-LÔ:YE', KHUA'-TA-LO:YE', and the interpreter WUN-TSOU'N-YE'. In seven days' journey we reached the city of *Maing:Tshì* (*Yunan*), where we stopped one day, and then continuing our route, reached the city of *Kāetsō* (*Kue-chow*) in nine days' journey, on the 8th August, 1788. On the 12th we came to the city of *Tsin-yuen-fū* dependent on *Kue-chow*, where, on the following day, we embarked in boats and dropped down the stream until the 20th, when we disembarked at the landing place at *Rīyen* or *Yī-yen*, and continued our route by land. On the 22nd August, we came to the city of *Tsheng-shyā-fū* in the district of *Hūnān*, and in eight days' journey more to the city of *Wū-tsheng-fū* in the district of *Hupé*. On the 12th September, in thirteen days' journey, we came to the city of *Tshī-chow*, beyond the district of *Hōnān* and in that of *Tsūlī* (*Peteheli*). In seven more days, on the 19th September, we reached *Pauk-tīn-fū*, the principal city of *Tsūlī*, and on the 23rd reached the city of *Lukō Khyauk-ken**, six miles distant from the capital, *Pekin*. The emperor not being there but at *Yé:hô†* in *Tartary*, seven days' journey to the north-east of *Pekin*, we left the city of *Luko Khyauk-ken* on the 14th, and in three days came to the boundary of *Tartary* to the *Hū-pé-khé* fort‡ line of wall. In two days more we came to the city of *Lānphyīn-hien*, where the chief of the chokey met us, and taking a

* *Ken* is a chokey in Burmese.

† DU HALDE's *Géhol*, and Sir G. STAUNTON's *Zhe-hol*.

‡ DU HALDE's *Coupe keon Fort* ?

list of the presents, proceeded to make his report to the emperor of *China*. The treasurer having come with the emperor's orders for us to advance, we entered *Zhe-ho!* on the 29th September, 1787, and were lodged on a high plain to the westward of the city.

"On the 30th September we proceeded by invitation to meet the *Wún-gyíh Hô-TSOU'N-TENG**, who wears two peacock's tail feathers with red on the top of his head-dress, (red button on his cap,) and *KOU'N-YE'-THU'* and *THÍ-TA'-YÍN* who wear two peacock's feathers with a ruby on the top of their head-dress. The *Wún-gyíh* told us:—'Our master, the emperor, is much pleased at the arrival of the ambassadors, and will receive the royal letter and presents so soon as to-morrow, when the ambassadors also will see him and be interrogated by himself. You must be in waiting at 6 o'clock to-morrow morning when the emperor comes out, and you must bring the band of music, which he has heard you have with you.' On the following morning we were in attendance in front of the palace before the emperor appeared. He came out about 7 o'clock, when the royal letter and presents were delivered by us, and the *Wún-gyíh Hô-TSOU'N-TENG* and *KOU'N-YE'-THU'* and *THÍ-TA'-YÍN* in the midst of all the officers of the Court. The emperor spoke as follows in the Tartar language to the *Wún-gyíh*, who repeated it in the Chinese language to the interpreter, and he communicated it to us:—'The two great countries were always friends in former times, and owing to a little difference which happened once, no letters or presents have passed. But now, a mutual intercourse and good understanding prevails, and friendship has been re-established. I am exceedingly glad to hear that my royal friend, the Lord of the golden palace, fulfils his religious duties and cherishes all the inhabitants of the country as if they were the children of his own bosom. Let the ambassadors submit all they have to say.'—We replied, 'Your majesty's slaves will submit to our royal master all your majesty's orders; and communicate to the *Wún-gyíh Hô-TSOU'N-TENG*, and to *KOUN'-YE'-THU'* all we have to represent.'

"The emperor then said, 'Let them convey to my royal friend, in order that he may worship as I do, this *Shikyá Muni* image, the representative of the Deity, which has always been worshipped in our palace,—this figure of the Deity, embroidered in silk, and this *Yu-yuí* jewel (sceptre?) which I always carry in my hand.' The *Wún-gyíh Hô-TSOU'N-TENG* and *KOU'N-YE'-THU'* brought and delivered the same to us. We then made our band of music play before the emperor, who approved of it and said it was very pleasant. After his majesty had conferred presents on different great and subordinate officers, we were placed in the same line with the 48 princes of *Tartary*, and allowed to see an entertainment, (Chinese play.)

* This is evidently the same person, who was the first minister of the empire during Lord MACARTNEY'S embassy, and who is styled by Sir G. STAUNTON, "Hoo-choong-taung Colao."

"On the 3rd October we went again, and were placed in the same line as before, and shown a complete entertainment. The emperor of *China* seated us at a table, at which we ate and drank in company with the 48 princes of *Tartary*. We conversed with the Wún-gyíh Hô-Tsou'N-TENG and Kou'N-YE' THU' and THÍ-TA'-YÍN, and observed:—'Friendship has now been established between our two royal masters. The great officers on each side, bearing in mind the favors they have received from, and the duty they owe to, their respective masters, have only to submit what they may be satisfied will conduce to the permanent advantage of their royal masters and their posterity. We, who have been deputed, will return as quickly as possible, and in conformity with the qualifications required from ambassadors*, will submit to our royal master every circumstance relating to the emperor of *China*. There are certain Shan Tsô:buahs and their followers, subjects of our master, and some men who were formerly deputed, still remaining in this country. And the road on the frontier of the two countries is much molested by bad men and criminals;—if means are adopted on both sides for putting an end to this evil, the two countries will become like one, and the gold and silver road will be opened.' The Chinese officers replied:—'The observations of the ambassadors are very correct. Our master, the emperor, is much pleased at having re-established friendship with the Lord of the golden palace, who rules over the western country. His majesty has given to the king of *Ava* an image of him, who is without an equal, and is superior to the three races of beings, (men, *Nats*, and *Byumhs*,) and who has been worshipped uninterruptedly by all the emperor's ancestors; and he has permitted the ambassadors to communicate, without reserve, all they may have to say. He has seated the ambassadors also on the same line with his own relations, the 48 princes of *Tartary*, and repeatedly questioned, and spoken to them. All the points you have represented will be properly settled. When we go back from *Zhehol* (to *Pekin*), we will exert ourselves to have the whole settled, and will submit that you may be speedily allowed to return.'

"On the following day we were invited to attend the emperor, who was going to visit a monastery. We went early, and were desired by the Wún-gyíh Hô-Tsou'N-TENG to wait on the road, and when we saw the emperor coming out on horseback, to remark what a strong hale man his majesty must be, to be able to ride at 80 years of age without being fatigued. We waited on the road accordingly, and on seeing the emperor, spoke as we had been instructed. Hô-Tsou'N-TENG asked what the ambassadors had said, and when the interpreter translated our remarks into Chinese, the Wún-gyíh repeated it to the emperor.

"The emperor, on going to the monastery, entered by the southern arched gateway, and came out by the western, and returned to the city by its southern gateway. LU-TA'-YÍN was appointed to attend us and shew us all the different images and temples. But all the different figures

* See a subsequent note for a list of these qualifications.

shewn to us were representations only of our deity, and observing that those varying in form were copied from various forms which GAUDAMA had assumed when in this world, we bowed down and worshipped them. There were seven monasteries. In that first shewn to us, there were 200 priests dressed in yellow, and in another to the westward about 500.

“On the 6th October we were invited to an entertainment given in some temporary buildings in a garden. We went before 6 o'clock, and the emperor came about half past 7 in an open sedan chair. He was dressed as follows:—On the top of his head-dress there was a pearl; on the four sides of his silk dress there was the figure of a dragon, and round his neck hung a string of pearls. He took his seat on a royal chair of the form of a dragon, and about a cubit high, and the officers of his court presented to him cups of spirits and cups of milk. The WÚN-gyíh HÔ-TSOU'N-TENG and KOU'N-YE'-THU' and THÍ-TA'-YÍN stood on the right and left of the emperor with swords in their hands. To the right and left were placed tables with all kinds of cakes, and we sat down on the right hand with the WÚN-gyíh HÔ-TSOU'N-TENG behind the chiefs of the 48 Tartar countries, and ate and drank. After the soft music and dancing, which were according to the Chinese, Tartar, and Kulá fashions, the emperor returned home. The silks and gold cloths, which had been arranged on the left hand, were distributed in presents to the princes of *Tartary*, and those on the right hand were distributed by the WÚN-gyíh KOU'N-YE'-THU'* to us according to our respective ranks, and to the officers appointed to take care of us. All kinds of curious cloths, &c. intended for presents to the king of *Ava*, were also shewn and delivered to us.

“A little after 3 o'clock, on the afternoon of the same day, the emperor of *China* again came out, and we saw an exhibition of tumblers on poles, and fireworks, and then returned home.

“The emperor having directed us on this last day to go to *Pekin*, we left *Zhehol* on the 7th of October, and arrived at *Pekin* on the 12th October, taking up our residence in some temporary buildings erected on a plain within the southern gateway of the city, where we were attended and supplied with provisions by the same men as before.

“On the 13th, the emperor having directed that the ambassadors should be lodged near him, and that their provisions should be supplied from within the palace, we moved, on the following day, and took up our residence on a royal plain†, near the road leading to the southward from the western gateway of the wall surrounding the palace. On the 15th the emperor came to *Pekin*, and we accompanied the Chinese officers to a temporary building in the lake, where there is a palace, in order to receive his majesty. On the morning of the 20th we attended the emperor, by invi-

* This officer was not a WÚN-gyíh or First Minister of State, as will be seen in the list of WÚN-gyíhs hereafter given, but the Burmese ambassadors repeatedly given him this title.

† Apparently a plain on which princes encamp or live when they visit *Pekin*.

tation, to the garden situated within the same lake, and his majesty ordered the Wún-gyih Kou'N-YE'-THU' to take us round and shew us all the monasteries, temples and gardens. We embarked in a boat with that officer and rowed about the lake, and saw the different monasteries, &c. In two monasteries situated on the top of a hill on the western side of the lake, there were several images of the unequalled and most excellent deity, surrounded by images of inspired disciples. We saw more than fifty priests here also dressed in yellow cloth. There were ten more monasteries on the top and sides of a hill running from the westward of the hill before mentioned to the north. They contained, besides many images of the deity, a figure of the *Mán-Nat* * with 1,000 arms, and figures of hermits and priests in stone, and various paintings. A small hill and the garden where a monastery is situated are joined by an arched brick bridge of 50 *tās*† or 350 cubits. At the end of the lake nearest the city, there is an octagon pyramidal building with three roofs covered with green tiles. On the western sides, on the slope of a hill, there are two Buddhist temples, and a monastery with three roofs; on the south-east a large building with four roofs dedicated to a *Nat*; and on the north-east on a level ground, stands the pyramidal building at which the emperor stops. The lake is upwards of 400 *tās* from north to south, and upwards of 300 *tās* from east to west, and in it there are five large vessels with several boats. The emperor ordered that we should also be taken round and shown all the monasteries within and without the city, and be allowed to compare the books and writings, and see if they were similar to ours.

“On examining the different monasteries, we saw some with images of the deity (GAUDAMA), and priests dressed in yellow in attendance; some with people dressed in dark-colored caps and trowsers, whom the Chinese call *Hó:Shyeng*‡; and some with the ship country Kulás in attendance on the image of *Devadāt*§, which they worship. The books, writings and language spoken in these monasteries were not like ours, and those who accompanied us took notes of all we said, and submitted the same to the emperor.

“On the 23rd October, when the emperor returned from the palace lake to the city, we received him in company with the Chinese officers outside of the western gateway of the palace enclosure. Every day after the emperor

* The Hindu god of love and desire, KA'MA, one of whose names, MA'RA, is written by the Burmese *Már*, and pronounced *Mán*.

† A *tá* is a measure of 7 cubits, and a royal cubit is equal to $19\frac{1}{16}$ English inches.

‡ DU HALDE says, the Bonzes, or priests of *Fo*, are called by the Chinese *Ho-shang*, but the people here described may be of the sect of “*Lookiun*,” mentioned by the same author as worshipping demons, and pretending to a knowledge of magic.

§ See in LA LOUBERE'S *Historical Relation of Siam* for some account of THEVETAT, whom some Buddhists pretend to consider as the same person as our Saviour.

returned to the city, some of the palace officers wearing red on the top of their head-dress and a peacock's feather, brought to us from his majesty's table different kinds of meat and sweetmeats. On the 28th we joined the Chinese officers in attendance on the emperor, and saw him offer his devotions at a monastery within the palace enclosure. On the 29th we attended the emperor, when he came out from the western gateway of the palace enclosure, and proceeded to the garden in the lake, and on his return, he stopped his sedan chair as he was coming out of the temporary building erected for his accommodation on the royal plain, and giving us presents, said: 'Let the ambassadors return on the 1st of November, in order that my royal friend may learn every thing.' On the same day the Chinese officers of rank summoned us to a spot on the royal plain to the eastward of the palace enclosure, and gave us an entertainment, and delivered to us the emperor of China's letter. On the 31st, the Wún-gyíh Hô-TSOU'N-TENG and KOU'N-YE'-THU', THÍ'TA'-YÍ'N, and LU-TA'-YÍ'N, gave us different presents; and on the same day we went into the palace where the Wún-gyíh Hô-TSOU'N-TENG was, and said to him, 'We were ordered to return on the 1st of November, and to-morrow we are to set out; but we desire to receive an answer to the representation which we made at *Zhehol*.' He replied, 'I have submitted to the emperor every word of your representations, and his orders are:—The men who came to our country are some of them afar off and some of them have disappeared or are dead, and much delay and a long time will elapse in making the necessary inquiries and examinations. When the snowy season arrives, the cold will be very great, and these ambassadors, who have been sent to us on business relating to the country, had better return with all expedition.' The Wún-gyíh also said, 'The six men with NGA TSI'T who were formerly deputed, were taken to the province of *Kuan-toún* in *Tartary*, but they were ordered to be brought back the moment you arrived here, and as soon as they come, they shall be sent down to *Yunan* and forwarded to you;—and with respect to the Tsô-buah of *Bamô*, inquiry shall be made, and he shall hereafter be surrendered. There is nothing difficult now that our two masters have become friends, and the Tsoüntü of *Yunan* has already received full instructions on every subject.'

"On the 1st November, 1788, after seeing the emperor receive the homage of all his officers, which he does once a year on the last day of a month seated on his throne, we took charge of the emperor's letter, the *Shikyá Muni* image, and various costly presents, and left *Pekin*. We came in a carriage with horses in 23 days' journey from *Pekin* to the city of *Shyeng-yeng:hien* in the district of *Hüpé*, beyond the districts of *Tsitli* and *Hô-năn*, when we embarked in boats, and came down the stream in 18 days, on the 12th December, to the city of *Tsheng-tait-fū* in the district of *Hünăn*. The route from thence by water being against the stream and very difficult, we proceeded by land in covered sedan chairs, and arrived at the city of *Kue-chow* on the 5th January, 1789. We left that city on

the 6th and arrived at *Yunan* in 16 days, on the 21st January. The *Tsöüntü* had marched with a force of 10,000 men to attack the city of *Akyô*, lying to the south-east of *Yunan*, where there was a war, and *THU-YI'N*, the governor of *Yunan*, who received us, informed us that in conformity with the application which we had submitted to the emperor, the six men, *NGA UH*, *NGA LHE-GÔ*, *NGA TSI'T-TÔ*, *NGA TSI'T-LI'*, *NGA PÔ-BU'*, and *NGA PÔ-YI'* subjects of the sun-descended king who were formerly detained and sent to *Tartary*, had been recalled and had arrived at *Pekin* on the 22nd December; that orders had been received to forward them, and that the moment they reached *Yunan*, they should be sent to the golden feet. He also said, 'Our two masters having become friends, the two countries must be like one, and constant intercourse maintained between them;'—and added:—'The new year being close at hand, some difficulty is felt in supplying you with the means of continuing your journey; wait here, therefore, for a short time.' We stopped at *Yunan*, accordingly for four days; and on the 26th of January left it, and in 21 days' journey, on the 15th of February, arrived at *Kaing:mah*. The *Tsô:buah* of *Kaing:mah* also said, that he had received letters from the *Tsöüntü* of *Yunan* informing him, that the six men who had been sent to *Tartary* were coming with all expedition for the purpose of being forwarded to the golden feet. He also told us, that he had sent letters to *Muing:Tein* and *Theinni* to have the temporary buildings and provisions prepared for us, and requested us to give them a few days to have all in readiness. We waited accordingly at *Kaing:mah* nine days, and on the 24th of February left it, and on the 4th March arrived at *Theinni*."

Memorandum giving an account of the emperor of China and his sons and officers, and a description of the appearance of his palace and of the city of Peking, (appended to the foregoing report of the Burmese envoys.)

"The age of the emperor is 78 years, of which he has reigned 53 years. The principal of his nine queens is dead. He has five sons and two daughters. The eldest son, *LU-YE'H*, is 45 years of age. He has six *Wün-gyils*, three *Tartars*, *Hô-TSOU'N-TENG*, *A-TSOU'N-DENG* and *THU'-TSOU'N-DENG*, and three Chinese, *WENG-TSOU'N-DENG*, *KYI'-TSOU'N-DENG*, *LHYÔ-TSOU'N-DENG*. There are six great officers, one superintendant of war, one treasurer, one superintendant of law and custom, one superintendant of criminal affairs, and one superintendant of learning. There is a general of the nine gates, named *KYÔ-MEI'N TI'TU'*. A governor of the city, named *SHUENG-DENG-THU'*, and another governor, who is also the chief revenue officer of the city, named *PH'NG-SHENG*.

"Thefts, murders or other public offences committed within the city are taken cognizance of by the governors of the city; but those committed in the suburbs and outside of the city, are taken cognizance of by the *Tsöüntü* of *Tsit-li* from the city of *Pauk-tin-chow*. The officers and soldiers do not hold districts and villages (in jaghîr), but are paid monthly salaries in money according to established rates, and agreeably to their several ranks.

"The emperor of *China* has always worshipped the image of the most excellent deity (*GAUDAMA*), whom the Chinese call *Shikya Muni*; and once a year he executes the sentences of criminals in the following manner. The emperor goes to a monastery at which there is an image of the *Tha-gyā Nat*, and the names and acts of the criminals are proclaimed, and written on slips of paper, which are burnt upon a horse and cow, and these animals are then executed. This custom is always followed from a belief, that these papers and the souls of these animals are sent up to the *Tha-gyā Nat*. Within the building covering the *Wumein* gateway of the wall surrounding the palace enclosure, the figures of those men who have gained victories in war, with the number of the victories, are written, and on the outside of that gate there is a monastery in which different emperors have had carved and placed, the figures of men who acquired, renown, and of officers who were faithful or good soldiers; and to this place the emperor goes once a year and does honor. On the northern bank of the lake, to the westward of the palace wall, the figures of the three men, *MI-KOU'N-YE'*, *KUA-TA-YI'N*, and *TSENG-TA-YIN*, who were killed in the victories obtained in the year 1029 (A. D. 1767), are placed, each under a separate pyramidal building. At the four angles of the palace enclosure wall there is a pyramidal building, in which the armour worn by soldiers, and swords, and spears are lodged. In the buildings at the gateways of the outer city, guns, muskets, shot, and powder are lodged, and constantly guarded by troops. *Pekin* is divided into two cities, the southern and northern* city. In the former there are seven gates, and in the latter nine. The walls are 13 cubits high and 14 cubits thick. At each of the gateways is a building on each side, and a double pair of folding doors. There is a pyramidal building also at each of the four angles of the wall. The ditch surrounding the wall is not lined at the sides, and is about 70 cubits broad, with water let into it. The northern city is about 3500 cubits square, and the southern city about 4200 cubits square. The line of walls inside of the northern city has no battlements, but is covered on the top with yellow-colored tiles†. It is 1750 cubits square, 10 cubits high, and has six gateways at six different points. Inside of this last-mentioned wall is the wall surrounding the palace enclosure; and this is upwards of 700 cubits on the eastern and western sides, and about 1050 cubits on the northern and southern sides. It is surrounded by a ditch filled with water, seventy cubits broad and ten cubits deep, the sides of which are faced with stone. This wall is fourteen cubits high and seven cubits thick; at the four angles there is a tower, and it has a gateway on each of the four sides, and a double-roofed shed supported on ten posts covers each gateway. There are three entrances at each gateway, and the folding gates are covered with plates of iron fastened with nails. The road within the walls of the palace enclosure is fourteen cubits broad and

* The Chinese and Tartar cities. † The external enclosure of the palace.

paved with stone. From a lake situated three *taings** to the north-west of the city of *Pekin*, water is brought into the ditch surrounding the walls of the palace enclosure by a canal, which also conducts it from the ditch into the palace, and thence to the east of the city; and there are stone bridges over this canal. The southern side is the front of the palace. The principal palace is surrounded by another wall, outside of which stands the palace with the throne (hall of audience), which has a square roof fourteen cubits high above the terrace, and the terrace stands six cubits above the ground, and is paved with stone. About one hundred and forty cubits distant from the hall of audience is another large building with a square roof, and on one side of it is the gold treasury, and on the other the silver treasury, with a line of other buildings. To the left of these buildings, and thirty-five cubits distant, are temporary buildings occupied by the officers of the court, and a line of three buildings occupied by scholars or students, literally '*people learning books.*'" (The description of the buildings within the palace enclosure continues for eight or ten lines farther, but in so confused and vague a manner as to render it impossible to be understood by any one but a person who has actually seen the place.)

"When the emperor of *China* takes his seat on the throne, flags, *chowries*, and satin umbrellas are arranged on his right and left hand, and the band of music plays in a large building to the southward. On his right are the military officers, and on his left the civil officers; and they all, at a signal given, bow their heads nine times. The emperor comes out of the palace in the following manner:—He is seated in a sedan chair covered with yellow satin, and preceded by upwards of fifty horsemen, twelve umbrellas of yellow satin, each with three rows of fringe, twelve *chowries* and twelve flags, upwards of twenty spears having the points sheathed, ten led horses with saddles and bridles complete, and upwards of twenty horses with the brothers and sons of the emperor dressed in yellow satin jackets, and armed with bows and swords. Immediately in front of the emperor is carried an umbrella of yellow satin with three rows of fringe, and having the figure of a dragon worked upon it in gold thread, and upwards of an hundred men in charge of the women (eunuchs) surround the emperor's chair. The band of music which plays when the emperor comes out or enters the palace, consists of a pipe with six stops, two trumpets, a fiddle, a lyre, and an alligator harp. The instruments used at Chinese historical plays consist of a small gong, a large gong, a pair of large cymbals, two trumpets, a drum, and a pipe.

"There are fifteen elephants at *Pekin*. The following are the prices of articles in the bazar there. One and half ticals for a basket of rice; 10 ticals for one hundred *viss* of salt; 125 ticals for one hundred *viss* of cleaned cotton; 60 ticals for one hundred *viss* of oil; 1 tical for a basket of *pyaung*, grain (*Madras Cholum*); 1½ ticals for a basket of

* *Taing*, or when compounded, pronounced *daing*, is a little more than two English miles.

millet. One thousand copper pice pass for $2\frac{1}{2}$ ticals; and these pice are used in sales and purchases. Rice is cultivated and used in the provinces of *Yunan*, *Küe-chow*, *Hünän* and *Hü-kueng* (*Huguang*). But there are no paddy lands; and *pyaung*, pulse, barley, and millet only are cultivated and used in the provinces of *Hönän* and *Tsitli*, and about the cities of *Zheho* and *Táing*. As far as *Küe-chow* the people of the country wear their hair like the Burmese, all over the head. The people to the north are very numerous, and there are a great many hills, precipices and streams. In *Hü-kueng* people travel in boats, as there are many lakes and streams in that province; and in *Hönän* and *Tsitli* the ground being natural and even, carriages are used. There are no trees, bamboos or ratans, and instead of fire-wood coal is used.

“ We heard in *China*, that in the month of May or June in the year 1149 (A. D. 1787) the people of *Taik-wun* having revolted and put to death the governor and officers, the force first sent to subdue them under the general TSHAI-TA-YIN was defeated with great loss. That general was executed by the emperor, and another general THU'-THI-TA-YIN detached against the rebels, whom he subdued in the month of April 1789, when MI-KOU'N-YE's younger brother, KHUE-KOUN-YE', was appointed governor over the people with the office of Tsé-taik. The two leaders of the *Taik-wun* rebels were decapitated, and their heads, together with the head of the general TSHAI-TA-YIN, were suspended in the market place of the great southern city.

“ On the 23rd of August, 1788, about 9 o'clock at night, the *Thi-tshuen* river rose and the water overflowed and drowned the whole city of *Kyín-chow* in the province of *Hükueng*. Upwards of ten thousand people were destroyed, together with the wife and children of the governor, and the second governor himself with all his family. On the receipt of this intelligence at *Pekin*, the Wún-gyíh A-TSOU'N-TENG was dispatched with upwards of two thousand viss of silver, to provide clothing, food and habitations for such of the inhabitants of *Kyín-chow* as remained, which service he performed. Intelligence was also received from the people appointed to guard, that an embryo Bud'dh had appeared at the city of *Thi-tsán* in the *Kulā* country to the westward of *Thi-tshuen*, and that the people were disputing and going to war about him. The general AUNG-TSUNG-KYIN was appointed to go and attack them with the force in the city of *Thi-tshuen*.

“ We saw all the houses and lands destroyed by the floods along the whole road we travelled in the provinces of *Hünän* and *Hüpé*, from the city of *Kyeng-chow* included. The people also said, that when the walls of the city of *Thi-tshuen* fell down and were being rebuilt, a prophetic writing was found, which the nobleman, KHOU'T-MYE'N, who first built the walls, had placed there. The contents of this writing were:—‘ To the south one thousand *Taings* will be destroyed by water. To the northward, beyond the city of *Shyän Shí*, a stream of blood will flow. A great calamity

will befall the chief and inhabitants of the city of *Kueng-chow*, whilst they are asleep.' People say, that what happened lately corresponds with this prediction.

"The Tsoüntü of *Kueng-toñ* reported, that the uncle of the chief of *A'n-năn*, a territory lying to the west of *Kueng-toñ* and near the *Kueng-thi* (*Kwang-si*) and *Yunan* provinces, had revolted, and that the chief and his family had fled and arrived at the city of *Kueng-thi*. The chief of *A'n-năn* having regularly sent presents and being a friend, it became necessary to assist him, and attack those who had molested him. The *Kueng-thi* Titü, Yui-TA-XIN, was appointed general, and a force of ten thousand men, three thousand from *Kueng-thi* and seven thousand men from *Yunan* under the *Yunan* Titü, was sent against the rebels.

Route of a Journey from the city of Amarapura to the city of Peking, travelled by a Mission deputed by the King of Ava to the Emperor of China in the year 1787.—(Literally translated from the Burmese official document.)

Day of the month and year.	Names of Places.	Hills and mountains crossed.	Large Rivers crossed.	Small Rivers crossed.	Bridges crossed.	Chokeys passed.	Distance in Burmese Taings.	No. of nights stopped at each place.	No. of gates in each city.	No. of Lakes.	Under what Jurisdiction.
24th Jan. 1787	Left the city of <i>Amarapura</i> , and stopped at <i>Phrá-gyih</i> , or large <i>Ar-ra-can</i> image of <i>Gauda-ma</i> ,	..	..	..	..	..	1	1	..	..	
25th	Slept in temporary buildings at the city of <i>Kanggyih</i> ,	..	..	..	..	..	6	1	..	..	
26th	Slept at the <i>za-yat</i> , or public building in the village of <i>Oün-lhut</i> ,...	..	..	1	1	1	8	1	..	..	Under the city of <i>Thoñ-zay</i> .
27th	Slept in temporary buildings in the city of <i>Thoñ-zay</i> ,	1	..	..	..	..	10	1	..	..	
28th	Slept at <i>Thek-kay-byen</i> (plain of coarse grass) and village of <i>Nán-mô</i> , ..	2	..	..	..	..	6	1	..	..	Under the city of <i>Thoñ-zay</i> .
29th	Slept at a halting place in the jungle, on the site of the old village of <i>Bán-gyí</i> or <i>Ban-kyí</i> , ..	1	..	..	..	..	9	1	..	..	Ditto.
30th	Slept at a halting place in the jungle, on the site of the old village of <i>Kywé-gouñ</i> ,	3	..	..	..	..	4	1	..	..	Ditto.
1st July	Slept at a <i>za-yat</i> in the village of <i>Bó-gyó</i> ,	2	..	..	..	1	6	1	..	..	Ditto.
2nd	Slept in some buildings constructed for the ambassadors in the city of <i>Thí-bó</i> ,	..	..	..	..	..	3	1	..	..	

[illegible]

Day of the month and year.	Names of places.	Hills and mountains crossed.	Large Rivers crossed.	Small Rivers crossed.	Bridges crossed.	Chokeys passed.	Distance in Burmese Taings.	No. of nights stopped at each place.	No. of gates in each city.	No. of Lakes.	Under what Jurisdiction.
4th	tain or hill in the Shan language,)..... To the city of <i>Kaing:mah</i> , a Tso-buah, subject to both <i>Ava</i> and <i>China</i> , resides here,	2	..	..	..	..	4	1	..	..	Under the city of <i>Kaing:mah</i> .
12th Jan. 1788	Left the city of <i>Kaing:mah</i> , and slept in the ambassadors' <i>té</i> in the village of <i>Wein-yók</i> ,...	1	..	1	..	..	1	<i>m.d.</i> 5 8	..	..	
13th	To the city of <i>Maing-Thá</i> ,.....	3	..	2	2	..	4	1	..	..	Ditto.
14th	To the city of <i>Maing-Yaung</i> ,	3	..	2	2	..	5	1	..	..	
18th	To the village of <i>Maing:-Lá</i> ,.....	3	..	1	1	..	8	4	..	..	In the Province of <i>Yunan</i> and under the city of <i>Shuenli</i> .
19th	To the halting-place of <i>Tóun-dauk-shue</i> ,	3	..	3	3	1	8	1	..	..	Ditto.
20th	To a monastery in the city of <i>Yuin-chow</i> , called by the Shans <i>Maing:Yá</i> , ..	2	..	..	..	..	7	1	..	..	Ditto.
23rd	To a monastery in the city of <i>Shuen-li</i> , called by Shans <i>Maing:Chán</i> , ..	1	..	1	1	1	6	3	..	..	Ditto.
25th June	From <i>Maing:Chán</i> to the village of <i>Tsi-kay</i> , or <i>Tsin-kay</i> ,	3	..	5	5	5	<i>m.d.</i> 9 5 2	3	..	..	
27th	To the village of <i>Nyo-kay</i> , after crossing the iron bridge over the <i>Mé-khaung</i> , or great <i>Cambodia</i> river; (Chinese <i>Lout-san-Kyung</i>),.....	2	..	2	2	6	6	2	..	..	Under <i>Maing:-Chán</i> .
28th	To the village of <i>Tshú-kay</i> ,	5	1	3	3	8	10	1	..	..	Ditto.
29th	To the city of <i>Móun-khuá</i> ,	4	..	..	..	6	10	1	..	..	Ditto.
30th	To the village of <i>Thán-shyen-bán</i> ,.....	3	..	1	1	3	6	1	4	..	Ditto.
1st July	To the city of <i>Tá-thí</i> or <i>Tá-yí</i> . (<i>Tali</i> ?)	..	..	4	4	5	6	1	..	..	Ditto.
23rd	Left <i>Tá-thí</i> and stopped at the city of <i>Tsó-chow</i> , ..	3	..	7	7	7	7	22	4	1	
24th	To the city of <i>Yui-nan-ngay</i> (little) after travelling 2 stages,	..	..	5	5	6	6	1	4	1	Under <i>Ta-thí</i> or <i>Tayí</i> .
25th	After travelling 2 stages to the city of <i>Kyen-nán-chow</i> , ..	3	..	15	15	12	12	1	4	1	
26th	To the city of <i>Tshú-shyoún</i> (<i>Tchou-hiung</i>),	10	..	15	15	20	19	1	4	..	Ditto.
27th	Dined and relieved bearers &c. at the city of <i>Kueng-tóun-hien</i> ,	1	..	15	15	6	6	1	6	..	Ditto.
		4	..	10	10	6	6	..	4	..	Ditto.

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27th	Slept at the village of <i>Shye-tsó</i> ,	3	..	5	5	6	6	1	..	..	Under <i>Ta-thí</i> or <i>Tuyí</i> .
28th	Breakfasted and relieved bearers, &c. at the city of <i>Lú-thóu-hien</i> ,	5	1	9	9	7	7	..	4	..	Ditto.
Do.	Slept in the village of <i>Shyá-kuon-hien</i> ,	4	..	6	6	7	7	1	..	..	Ditto.
29th	Relieved bearers, &c. at the city of <i>An-lín-chow</i> ,	7	..	7	7	8	8	..	4	..	Ditto.
	To the city of <i>Yuí-nán-gyih</i> (great) called by the Shans <i>Maing-Tshi</i> (Yunan),	1	..	10	10	7	7	2	6	2	
31st	Slept at the village of <i>Yuí-loún</i> , after travelling 2 stages (<i>Yi-loún-tsan</i> of other lists ?) .	1	..	10	10	17	17	1	..	1	Under Yunan.
1st Aug	Relieved bearers, &c. at the city of <i>Ma-loún-chow</i> , (<i>Ma-long</i>),	2	..	10	10	8	8	..	4	..	Ditto.
	Slept at the city of <i>Tsán-yí-chow</i> ,	5	1	10	10	7	7	1	4	..	Ditto.
2nd	Slept in the city of <i>Phyín-yí-hien</i> after travelling 2 stages,	7	..	10	10	16	16	1	4	..	Ditto.
3rd	Stopped in the village of <i>Lyó-kuon-toún</i> after travelling 2 stages,	6	..	12	12	13	13	1	..	..	In the province of <i>Kúe-chow</i> , (<i>Kóút-cheon</i> .)
4th	Stopped in the village of <i>Pé-shyá-tí</i> after travelling 2 stages,	7	..	10	10	12	12	1	..	..	Ditto.
5th	Slept in the city of <i>Lan-taing</i> after crossing the <i>Mauk-tso</i> river,	7	1	7	7	6	13	1	4	..	Ditto.
6th	Stopped at the city of <i>Tsin-lín-chow</i> , (<i>Tchin-ning</i> ?)	10	..	6	6	10	10	1	4	..	Ditto.
7th	Relieved bearers, &c. at the city of <i>An-tshúon-fú</i> , where a <i>Titú</i> resides. (<i>Ngan-chan</i> ?)	7	..	6	6	6	6	..	4	..	Ditto.
	Slept at the city of <i>An-phyín-hien</i> ,	12	..	10	10	8	8	1	4	..	Ditto.
8th	Relieved bearers at the city of <i>Tshí-tshín</i> ,	3	..	4	4	6	6	..	4	..	Ditto.
	Slept at the city of <i>Kué-chow</i> where a <i>Fú-yeng</i> resides, (<i>Koei-yang</i> ?) ..	3	..	6	6	7	7	1	8	..	
9th	Relieved bearers, &c. at the city of <i>Lóunli</i> ,	5	..	7	7	8	8	..	4	..	Ditto.
	Slept at the city of <i>Kué-tín-hien</i> ,	5	..	8	8	8	8	1	4	..	Ditto.
10th	Slept at the city of <i>Tshín-phyín-hien</i> ,	5	..	8	8	16	16	1	4	..	Ditto.
11th	Relieved bearers, &c. at the city of <i>Tshóun-ngay-hien</i>	3	1	4	4	4	4	..	2	..	Ditto.

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11th	Relieved bearers, &c. again at the city of <i>Kyeng-phyin-hien</i> (<i>Koang-ping?</i>)	2	..	4	4	3	3	..	..	..	In the province of <i>Kue-chow</i> , (<i>Koht-cheon</i> .)
	Slept at the village of <i>Tshè-phyin-hien</i> ,	5	..	7	7	6	6	1	4	..	Ditto.
12th	Stopped at the city of <i>Tsin-Yueng-fú</i> , (<i>Tchin-yuen</i>),	5	..	10	10	6	6	1	8	..	Ditto.
13th	Embarked in boats and dropped down the stream to the city of <i>Tshè-khyi-hien</i> , where we supped,	mountains passed	..	..	1	9	9	..	..	..	Ditto.
	Slept at the chokey village of <i>Yeng-Phyin</i> ,	5	..	..	..	3	3	1	..	..	Ditto.
14th	Received provisions at the city of <i>Yui-phyin-hien</i> , Ditto ditto at the city of <i>Khueng-chow</i> ,	4	..	..	..	3	3	..	4	..	Ditto.
		5	..	..	..	8	8	..	4	..	In <i>Hu-kueng</i> province (<i>Hou-quang</i>) and district of <i>Hu-nan</i> , north portion of <i>Hou-quang</i> is called <i>Hou-nan</i> .
	Slept at the jungle of <i>Kueng-toün</i> under <i>Yueng-tsó-fú</i> ,	7	..	..	..	8	8	1	..	..	Ditto.
15th	Entertained by, and received presents from, the Governor of the city of <i>Yueng-tsó-fú</i> ,	..	..	..	1	3	3	..	6	..	In <i>Hu-kueng</i> province and district of <i>Hu-nan</i> .
	Slept at the jungle village of <i>Shyáho</i> after travelling 2 stages,	10	..	..	..	18	18	1	..	..	Ditto.
16th	Received provisions at the city of <i>Khyeng-yeng-hien</i> (<i>Khyay-ya-hien?</i>)	3	..	..	..	4	4	..	3	..	Ditto.
	Slept at the chokey village of <i>Lín-toün</i> ,	20	..	..	..	16	16	1	..	..	Ditto.
17th	Received provisions at the city of <i>Shyín-Kyi-hien</i> .	10	..	..	..	8	8	..	4	..	Ditto.
	Slept at the city of <i>Lukyi-hien</i> ,	10	..	..	..	20	20	1	4	..	Ditto.
18th	Received provisions and presents at the city of <i>Yuen-tsó-fú</i> (<i>Shyeng-tsó</i> in other lists <i>Tching-tcheou</i>),	10	..	..	..	6	6	..	4	..	Ditto.
	Travelled that day and all night, and received breakfast at the city of <i>Tauk-shè-hien</i> ,	3	..	..	..	18	18	1	4	..	Ditto.
19th	Received provisions & presents at the city of <i>Tsheng taik-fú</i> , where a <i>Ti-tú</i> resides. (<i>Tchang-te</i>), . .	3	..	..	..	9	9	..	4	..	Ditto.

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19th Aug	Travelled all night and stopped at the city <i>Lu-yeng-hien</i> ,	2	..	..	..	6	6	1	3	..	In <i>Hu-kueng</i> province and District of <i>Hú-nán</i> .
20th	Proceeded and disembarked from the boats at the landing place of <i>Ri-yeng</i> or <i>Yi-yeng</i> ,	3	..	..	..	6	6	..	..	..	
	Proceeded by land and slept at the city of <i>Tshí-yeng-hien</i> ,	..	..	..	..	3	8	1	2	..	
21st	Slept at the city of <i>Ni-yeng-hien</i> ,	..	1	..	..	9	10	1	3	..	Ditto.
22nd	Slept & received presents at the city of <i>Tsheng-shyá-fú</i> , which is the principal city of <i>Hú-nán</i> , and at which a <i>Fu-yeng</i> resides. (<i>Tchang-tcha?</i>)	..	1	..	..	10	10	1	8	..	Ditto.
23rd	Slept in the city of <i>Shán-yin-hien</i> ,	..	3	7	7	6	12	1	3	3	Ditto.
24th	Slept in the village of <i>Tá-kyin-yi</i> ,	..	3	4	4	6	12	1	..	..	Ditto.
25th	Slept in the city of <i>Yó-tsó-fú</i> . (<i>Yo-tcheo?</i>)	2	4	5	5	6	12	1	4	..	Ditto.
26th	Slept in the village of <i>Kán-khó</i> ,	2	1	10	10	9	18	1	..	..	In the province of <i>Hu-kueng</i> (<i>Hou-quang</i>) and district of <i>Húpé</i> (north part of <i>Hou-quang</i> province, called <i>Hupé</i> .)
27th	Relieved bearers at the city of <i>Bhú-khi-hien</i> , or <i>Fú-khi-hien</i> ,	..	..	5	5	3	6	..	4	..	
	Slept at the city of <i>Shin-lin-hien</i> ,	..	4	5	5	6	6	1	4	3	Ditto.
28th	Slept at the village of <i>Touñ-khó</i> ,	..	..	5	5	2	14	1	..	3	Ditto.
29th	Embarked in boats and slept in the middle of a lake,	..	..	..	..	..	2	1	..	..	Ditto.
30th	Received presents and slept at the city of <i>Wú-tsheng-fú</i> , which is the principal city of <i>Húpé</i> and at which a <i>Tsou-tú</i> lives. (<i>Foulchang</i>), ..	..	..	..	..	..	2	1	9	..	Ditto.
31st	Landed and slept at the village of <i>Shyó-khó</i> ,	..	..	..	..	..	4	1	..	..	Ditto.
1st Sept	Proceeded by land and stopped at the village of <i>Yéng-tyeng</i> ,	..	..	..	..	7	7	1	..	..	Ditto.
2nd	Stopped at the village of <i>Kueng-shue</i> ,	..	3	5	5	15	15	1	..	..	Ditto.

Day of the month and year.	Names of places.	Hills and mountains crossed.	Large Rivers crossed.	Small Rivers crossed.	Bridges crossed.	Chokeys passed.	Distance in Burmese Taings.	No. of nights stopped at each place.	No. of gates in each city.	No. of Lakes.	Under what Jurisdiction.
3rd Sept	Slept at the city of <i>Shyeng-yéng-chow</i> , where we were presented with carriages to ride in, by the <i>Taouk-tait</i> ,	..	1	10	10	13	13	1	4	..	In <i>Hónán</i> province (<i>Hónán</i>).
4th	Slept in a monastery in the village of <i>My'in-kyan yi</i> ,	..	1	10	10	8	9	1	..	..	Ditto.
5th	Changed carriages, &c. in the city of <i>Khyó-shán-hien</i> ,	..	..	5	5	8	9	..	3	..	Ditto.
	Slept at the city of <i>Tshue-phyín-hien</i> ,	..	..	5	5	6	7	1	3	..	Ditto.
6th	Changed carriages, &c. at the city of <i>Shi-phyín-hien</i> ,	..	..	4	4	3	3	..	4	..	Ditto.
	Slept at the city of <i>Yeng-tshan-hien</i> ,	..	1	5	5	3	3	1	3	..	Ditto.
7th	Relieved horses, &c. at the city of <i>Lein-yeng-hien</i> ,	..	..	5	5	6	6	..	3	..	Ditto.
	Slept at the city of <i>Shui-chow</i> ,	..	..	5	5	6	6	1	4	..	Ditto.
8th	Relieved horses, &c. at the city of <i>Tsin-li-hien</i> ,	..	..	1	1	10	10	..	3	..	Ditto.
	Slept at the city of <i>Tsin-chow</i> , (<i>Tching?</i>)	..	..	..	..	10	10	1	4	..	Ditto.
9th	Passed the city of <i>Shin-taik-hien</i> ,	..	..	..	..	4	4	..	3	..	Ditto.
	Slept in the village of <i>Khán-tshuan-yi</i> , after crossing the <i>Whengh-ó</i> river, (<i>Hoang-ho</i>),	..	1	..	..	6	6	1	..	..	Ditto.
10th	Received provisions at the city of <i>Shyeng-yeng-hien</i> , ..	..	..	1	1	6	6	..	3	..	Ditto.
	Received presents and slept at the city of <i>Wé-khue-fú</i> , (<i>Ouei-kiun?</i>) ..	..	..	3	3	6	6	1	6	3	Ditto.
11th	Changed horses, &c. and breakfasted at the city of <i>Khyi-hien</i> , which has a mud wall round it, ..	..	..	3	3	10	5	..	2	..	Ditto.
	Slept at the village of <i>Ni-kó-yi</i> ,	..	..	4	4	12	6	1	..	..	Ditto.
12th	Passed the city of <i>Tan-yi-hien</i> ,	..	..	3	3	4	2	..	3	..	Ditto.
	Received presents, and changed horses, &c. at the city of <i>Tsán-taik-fú</i> , (<i>Tchang-te</i>), ..	..	..	5	5	10	5	..	8	..	Ditto.
	Slept in the city of <i>Tshí-chow</i> ,	..	..	5	5	14	7	1	4	..	In the province of <i>Tsit-lí</i> , (<i>Tche-lí</i> , or <i>Pe-tche-lir</i>),

Day of the month and year.	Names of places.	Hills and mountains crossed.	Large Rivers crossed.	Small Rivers crossed.	Bridges crossed.	Chokeys passed.	Distance in Burmese Taings.	No. of nights stopped at each place.	No. of gates in each city.	No. of Lakes.	Under what Jurisdiction.
13th Sept	Stopped in the city of <i>Hô-tan-hien</i> ,	..	..	2	2	14	7	1	4	..	In the province of <i>Tsit-li</i> , (<i>Tcheli</i> or <i>Pe-tche-li</i> .)
14th	Breakfasted at the city of <i>Myéag-kueng-hien</i> ,	..	..	1	1	8	4	..	3	..	Ditto.
	Passed the city of <i>Tshó-ka-hien</i> ,	..	..	1	1	8	4	..	4	..	Ditto.
	Received presents and dined at the city of <i>Shueng-taik-fú</i> , (<i>Chun-te</i> ?)....	..	..	1	1	10	5	..	4	..	Ditto.
	Slept in the city of <i>Shyeng-taik-hien</i> ,... ..	..	..	1	1	6	3	1	3	..	Ditto.
15th	Breakfasted at the city of <i>Ne-khyó-hien</i> ,	..	..	2	2	12	6	..	3	..	Ditto.
	Slept in the city of <i>Pé-shyán-hien</i> ,	..	..	3	3	12	6	1	3	..	Ditto.
16th	Changed carriages, &c. at the city of <i>Tsó-chow</i> , (<i>Tcha</i> ?)	..	..	3	3	12	6	..	4	..	Ditto.
	Slept in the city of <i>Luéng-yeng-hien</i> ,	..	..	1	1	20	10	1	4	..	Ditto.
17th	Received presents at the city of <i>Tsin-tín-fú</i> , (<i>Tching-ting</i> ?)	..	1	1	1	12	6	..	4	..	Ditto.
	Slept in the village of <i>Tshein-tshin-phú</i> ,	..	..	1	1	8	4	1	..	..	Ditto.
18th	Changed carriages, &c. at the city of <i>Tsin-ló-hien</i> , ..	..	..	2	2	9	4	..	3	..	Ditto.
	Were entertained at the city of <i>Tsin-chow</i> , (<i>Ting</i> ?) ..	..	..	2	2	6	3	..	4	..	Ditto.
	Slept at the village of <i>Shín-poún-teng</i> ,	..	..	1	1	10	5	1	..	..	Ditto.
19th	Changed carriages, &c. and were entertained at the city of <i>Wún-tó-hien</i> , ..	..	..	3	3	6	3	..	4	..	Ditto.
	Dined in the village of <i>Thuen-yúon-khyauk</i> (<i>Khyauk</i> means six in Burmese),	..	..	2	2	4	2	..	..	..	Ditto.
	Slept in the city of <i>Pauk-tín-fú</i> where a <i>Tsoun-tú</i> resides, from whom we received presents, (<i>Pao-ting</i>),	..	..	5	5	14	7	2	8	..	<i>Aho</i> called <i>Tsit-li</i> .
21st	Breakfasted at the city of <i>An-shyó-hien</i> , (<i>Ngan</i> ?) (<i>Ngan-shu</i> in the lists of other ambassadors,) ..	..	..	2	2	12	6	..	4	..	Under <i>Tsit-li</i> .
	Slept in the village of <i>Pé-hó</i> , (<i>Pé-khó</i> in other lists,)	..	..	3	3	12	6	1	..	..	Ditto.
22nd	Slept at the city of <i>Tsó-chow</i> ,	..	..	1	1	15	8	1	4	..	Ditto.

Day of the month and year.	Names of places.	Hills and mountains crossed.	Large Rivers crossed.	Small Rivers crossed.	Bridges crossed.	Chokeys passed.	Distance in Burmese Taings.	No. of nights stopped at each place.	No. of gates in each city.	No. of Lakes.	Under what Jurisdiction.
23rd Sept	Passed the city of <i>Koún-kyi-tsheng</i> , and stopped at the city of <i>Lukó-khyauk-ken</i> , (<i>Khyauk-ken</i> may mean 6 chokeys, in Burmese,).....	..	..	2	2	12	6	1	4	..	Under <i>Tsit-li</i> .
24th	Slept at the village of <i>Tshi-toun</i> ,	..	..	3	3	..	6	1	..	..	Ditto.
25th	Passed the city of <i>Khyu-ait-tsó-hien</i> ,	..	..	10	10	12	12	..	3	..	Ditto.
	Slept at the city of <i>Mi-yuín</i> ,	..	..	1	1	3	3	1	3	..	Ditto.
26th	Breakfasted at the city of <i>Shi-shyá-hien</i> ,	..	..	7	7	10	6	..	3	..	Ditto.
	Slept near the line of wall of <i>Hupe-khó</i> fort, (the fort of <i>Coupe-keou</i> ,)....	3	..	3	3	4	4	1	..	..	Boundary of Tartary.
27th	Slept in the village of <i>Tshán-shi</i> ,	8	..	11	11	9	9	1	..	..	
28th	Ditto at the city of <i>Lán-phín-hien</i> ,	8	..	12	12	7	7	1	4	..	
29th	Arrived at the city of <i>Yé-hó</i> , (<i>Zhehol</i> or <i>Gehol</i> ,)...	5	..	1	1	4	4	8	6	..	
7th Oct.	Left the city of <i>Yé-ho</i> ,....	..	..	..	..	..	..	..	..	..	
12th	Arrived at the great city of <i>Pe-kyín</i> (<i>Peking</i>),	..	..	..	..	..	..	..	16	..	
				35	493	493	944	1062	109		

No. of Stages travelled,	150
No. of Taings,	1062
No. of Cities passed,	82
No. of Chokeys,	944
No. of large rivers,	35
No. of small rivers,	493
No. of Bridges,	493
No. of nights stopped on the road,	109

Names of the Ambassadors,

NE-MYO-SHUE-DAUNG, THIHAGYÔ-GAUNG, WELUTHARA.

On the 7th September, 1790, the Tsô:buáh of *Ba-mó* reported to MENG-DARÁ:GYÍH, king of *Ava*, that several officers of high rank and a Chinese embassy had arrived at *Mó:wún*, with some valuable presents and three Chinese princesses for his majesty. The king ordered the Tsô:buáh to proceed immediately and escort the embassy to *Ba-mó*, and on its arrival there, a special deputation, consisting of a Wún-gyíh and Wún-dauk, with several ladies of rank, was sent with

suitable boats from the capital, to go and bring down the ladies and ambassadors, who, on the 15th October, reached some buildings constructed for their accomodation, outside of the city of *Amarapura*. Three days after, the Chinese ladies were taken into the palace and received by the king, and placed in some apartments specially constructed for them; and on the 20th October, the Chinese envoys received a grand public audience, at which they delivered the presents sent by the emperor, and were asked by the king the customary two or three questions. At this audience the king placed the Chinese ladies near himself within the elevated stage which forms the throne. The three Chinese ladies, who appear to have been sisters, and are called in the Burmese history *Tá-kú-nyen*, *E-kú-nyen*, and *Thán-kú-nyen*, received honorary titles, and the province of *Taung-báin* was conferred on them in *jaghire*. The envoys left *Amarapura* again for *China* on the 1st November, 1790.

These Chinese ladies are called princesses, and a letter, of which I possess a copy, was written for them in the Burmese language addressed to the emperor of *China*, styling him their grandfather, and expressing great anxiety that he should become a true Buddhist. But they were natives of *Malong*, a town in *Yunan* province, and their feet were in a natural state. There is no doubt that they were women of low rank, and that the whole was an imposition practised upon the king of *Ava's* amorous propensities by the Chinese viceroy of *Yunan*. This was not the only occasion on which that king was imposed upon, for women were also presented to him as daughters of a king of *Ceylon* and a king of *Benares*.

In the year 1792, MENG-DARÁ:GYÍH prepared some valuable presents for the emperor of *China* and the Tsoún-tú of *Yunan*, and conferring an honorary title on each: on the former that of *Thíri tari pawara mahá nága thú-dhamma rájá-dí-rájá**, despatched an embassy to *China* with the presents, and the plates of gold set with rubies on which the titles were engraved. The embassy, consisting of NE-MYÓ-MEN-THA-NÔRA-THÁ, the Tsó:buáh of *Ba-mó*; NE-MYÓ-NANDA-GYÔ-THU', the Ken-wún or superintendant of chokeys; NE-MYÓ-NANDA-GYÔ-DEN, the Padá-wún, royal store-keeper or officer of the king's treasury; THÍ-HA-GYÔ-ZUÁ, the Than-dô-yan and Yáza-nanda, the Tará-na-khan, left *Amarapura* for *China* on the 23rd of October, 1792. This is the

* The meaning of these *Páli* words is thus given by the Burmese:— "The illustrious and excellent among the three orders of beings, of the great dragon or snake-god race, the king of kings, who practises good works."

embassy, a short account of whose route from *Pekin* was given by the principal envoy, the Tsô:buáh of *Ba-mô*, to Dr. (BUCHANAN) HAMILTON, when he accompanied Captain SYMES to this country, and was published by that gentleman in a paper in No. 5 of the *Edinburgh Philosophical Journal**.

On the 20th August, 1795, a Chinese embassy is again reported in the *Burmese Chronicles* to have arrived at *Amarapura* with valuable presents, &c. from the emperor of *China*. Captain SYMES saw this embassy at *Amarapura*, and he considered it as a provincial deputation only;—but I conceive that none of the members of the Chinese embassies which visit *Ava* ever come from *Pekin*. The letter on gold and some of the presents appear to be sent down to the Viceroy of *Yunan*, and he forwards them by some officers serving under him; and these do not, even on their return, proceed beyond *Yunan*. The *Burmese* envoys, when they accompany the Chinese, are made to believe that the emperor has conferred some additional rank and employment on the latter, requiring their presence in *Yunan*, and preventing their accompanying the *Burmese* mission to *Pekin*.

On the 22nd March, 1796, another embassy arrived at *Amarapura* from *China* with presents and a letter from the emperor, and as I possess a copy of this letter, and as its contents are curious, I annex a translation of it.

“ As darkness disappears through the rays of perfumed light, and as light is received when the white rays of day-break appear after the third quarter of the night; so, when reflecting on the affairs of the kingdom and of sentient beings, a good idea occurred (to me). In the beginning of the world the early emperors of *China*, when they attained an advanced age, abandoned the throne to their sons and retired to the wilderness. In the same manner (I) now propose to abdicate in favor of (my) son. Among (my) ancestors the name of the son who was considered most worthy to succeed his father as king, was written and placed on the

* This Tsô:buáh of *Ba-mô* brought, on this or on some subsequent occasion, a large Chinese *chop* or seal from the emperor of *China*, purporting to confer on the king of *Ava* the same power and authority as the emperor himself possessed, over every part of the Chinese empire. This seal is still at *Ava*, and is said to be of pure gold, weighing 3 viss or 10lbs. and of the form of a camel, with some Chinese characters at the bottom. At the time it was brought to *Ava* a question arose as to the propriety of retaining such a gift, as its acceptance might afterwards be construed into an admission, that the king of *Ava* derived his power from the emperor of *China*, or that the latter confirmed the former's title to the throne of *Ava*. The value of the gold, however, of which the seal was made, is said to have decided the *Burmese* court in favor of keeping it. I can find no notice of this remarkable circumstance in the history of the late king's reign, but the details I have now given were communicated to me by good authority.

canopy (over the throne). When YOU'N-TSI'N (YONG-TCHING), my father, died, the officers, agreeably to the document which he had written and left, raised me to the throne. My grandfather KAN-SHI (CANG-HI) reigned sixty-one years, and my father YOU'N-TSI'N thirteen years. The *Thagyá* and all the other *Nats* having, day and night assisted me, I have reigned sixty-one years, and am now eighty-six years of age; and although my sight and hearing are good, and my physical strength is as complete as ever, I am become an old man. After searching for a proper successor for a period of sixteen years agreeably to the custom of the early kings, I found my eldest son LU-YE', and intended him to be king, but in consequence of his death, my second son, SHI-WU'-YE', will assume the sovereignty with the title of *Kya'-tín-weng*, on the 1st day of *Tabaung* in the sixty-first year of (my) reign, and at a propitious moment calculated by the astrologers. SHI-WU'-YE' is not an ordinary son; he is a man qualified to conduct all the affairs of the kingdom. (Our) two countries have established a true friendship, to continue to our son's son, and are united like two pieces of gold into one. Consider SHI-WU'-YE' as (your) own younger brother, and as (your) own son, and assist and look (after him)."

MENG-DARÁ:GYÍH sent a suitable reply to the above letter.

I cannot find in the Burmese Chronicles any further notice of Chinese embassies in the reign of the late king, although one or two more must have passed between 1796 and the date of his death in 1819. During the reign of the present king of *Ava* two missions, one in 1823, and the other in 1833, have been sent to *Pekin* viâ *Ba-mó* and *Yunan*. I have procured copies of the routes and of most of the reports submitted to the king by each. Both missions proceeded in company with a Chinese embassy when it returned to *Yunan* from *Ava*, and it will be seen that the route of both, with a very slight deviation, was the same,—in as straight a line as possible from *Yunan* province to *Pekin*.

The chief of the Burmese mission in 1823 was, on its return, appointed governor of *Ba-mó*, which office he still holds. Two or three years ago, at my request, the ministers of *Ava* kindly made the subordinate Burmese envoys draw up an abstract of the report they had sent in, and I now give a translation of it, preceded by the letters from the emperor of *China* and king of *Ava*. The original report, of which I have since procured a copy, is too voluminous for me to attempt to give a translation of it here, and, besides, it does not possess any thing of interest to European readers beyond what this abstract contains.

Letter from the Emperor of China to the king of Ava in the year 1822.

Translation made in the *Lhuot-tó* of the royal letter which was brought by the emperor of *China's* ambassadors, YAN-TA'-LÔ-YE' and YENG-TSHENG-YE', and a copy of which was taken in a (Burmese black) book in the presence of a

party of officers assembled in the conference held on the 10th April 1823, by the interpreters LÔ-SHUE, LÔ-TSHENG, NGA-SHUE-ZEN, and NGA-SHUE-MAUNG, superintended by the Chinese clerk.

“ Elder brother THAUK KUON, (TAOU KUANG,) king of *Uṛḍ*, who, assisted by the *Tha-gyá* chief, rules over the great kingdoms and a multitude of umbrella-wearing chiefs to the eastward, affectionately addresses younger brother, the Sun-descended king, lord of the golden palace, lord of the *Tshaddan*, king of elephants, master of many white elephants, and possessor of mines of gold, silver, rubies, noble serpentine and amber, who rules over the great kingdoms and a multitude of chiefs wearing umbrellas, and dwelling in palaces to the westward.

“ The royal ancestors of elder and younger brother, assisted by the *Tha-gyá Nat*, have uninterruptedly interchanged letters, and it is now two years since elder brother succeeded to the throne on the departure to the *Nat* country of (his) father. Once in the time of (our) royal ancestors in the year 1111 (A. D. 1749); once in the time of (my) grandfather KHYENG-LOU’N in the year 1140 (A. D. 1787); and once, in the time of (my) father KYA’-TSHI’N in the sixteenth year of (his) reign, and in the time of younger brother’s grandfather ALAUNG MENG-DARA’-GYI’H, ambassadors were mutually deputed; and the gold and silver road having been established and the two countries joined in a manner into one, the poor people and (our) slaves have continued to trade together. It is now twelve years since any presents have been exchanged between younger and elder brother’s countries. TSHI’N-TA’-YENG, the Tsoún-tú of *Maing:tshi*, was directed to transmit presents again in charge of YENG-TSHENG-YE’, but the Tsoún-tú having reported that the presents were not received, because they were unaccompanied by a royal letter, YAN-TA’-LÔ-YE’ has also been commissioned to convey the presents; and by the newly appointed Tsoún-tú, MYI’N-TA’-YENG, and Shaya-we of the imperial guard, are sent a royal letter, two fur jackets lined with yellow silk, 1 small *Yenthain* box, and 2 boxes containing glass tea-cups with covers and saucers, for the purpose of being forwarded to younger brother, together with the presents formerly sent, and a male and female *lô** with saddles complete. Let these ambassadors return without delay, and on their return, it will be as if the countenance of younger brother, the Sun-descended king and lord of the golden palace, has been seen.”

Direction of the letter.

On the 1st December, 1822, in the second year of T,HAUK KUON’s reign, elder brother, T,HAUK KUON, king of *Uṛḍ*, has to represent to younger brother the Sun-descended king.

King of Ava’s reply to the above letter.

17th June, 1823. The royal letter on gold leaf to be delivered to the king of *Gan-dá-la-yít†* by TSARE-DÔ-GYI’H (principal clerk or secretary) NE-MYO-MEN:THA, and others, who are appointed envoys to accompany the Chinese ambassadors.

* This is a large description of mule, which the Burmese assert is prolific.

† This is the classical term for *China*. *Taroup* country is the common name.

"The founder of the great golden city of *Yatanápúra*, *Ava*, lord of the *Tsaddan**, king of elephants, master of many white elephants, possessor of mines of gold, silver, rubies, amber and noble serpentine, the bearer of the title *Thiri-pa-wara thú-dhamma mahá rájá-di-rájá†* the sun-descended king, and great king of righteousness, who rules over the kingdoms and a multitude of umbrella-wearing chiefs to the westward, addresses T,HAUK KUON, king of *U'dí*, who rules over the great kingdoms and a multitude of umbrella-wearing chiefs to the eastward.

"It is now thirty-five years since MENG-DARA'GYI'H, the grandfather of (your) royal friend, and founder of the great golden city of *Amarapúra*, and KHYENG-LOUN, the grandfather of T,HAUK KUON, king of *U'dí*, having formed a sincere and affectionate friendship, the inhabitants of the two countries have been in the enjoyment of a happy and cordial intercourse and trade. In the 4th year of (your) royal friend's reign, and in the 2nd year of T,HAUK KUON, king of *U'dí*'s reign, on the 6th of April 1823, YAN-TA'-LÔ-YE', YENG-TSHENG-YE', TSÔ-LÔ-TSOU'N, TOU'N-LÔ-TSOU'N and LA-TSHENG-YE' arrived with a royal letter and various presents, consisting of two fur jackets lined with yellow silk, 1 small *Yen-thain* box, 1 box containing glass tea-cups with covers and saucers, 8 rolls of velvet, 39 rolls of satin, 30 pieces of figured silk, 8 rolls of gold network, 190 glass tea-cups, 20 carpets, 15 paper boxes, 20 purses, 10 fans in cases, 100 fans, 1 fur jacket lined with plum-colored silk, a male and female *lô*, 2 Chinese horses, 1 large stone hill (imitation of a hill) with flowering shrubs planted on it, 4 small stone hills with flowering shrubs planted on them, 1 *thauk-zó* tree bearing fruit, and 1 *me-tsó* tree bearing fruit (dwarf fruit-trees). A public audience was granted to these ambassadors on the new year's *kadô*, (beg-pardon levee-day.)

"(Your) royal friend has appointed in return, NE-MYÔ-MEN:THA, who is employed within the palace, NARA-ZE-YA NÔRA-THA', THI'-HA-TSI'-THU' NÔRA-THA', SHUE-DAUNG-THU'-YAN NÔRA-THA, SHUE-DAUNG-THU'-RA NÔRA-THA'-GYÔ-DEN, and YA'ZA NÔRA-THA'-GYÔ-GAUNG, to proceed as (his) ambassadors with the following presents:—

"Three white marble images of the lord GAU-DA-MA, supreme over the three races of beings, *byamhás*, *nats* and men, whom (your) royal friend unceasingly adores in order to obtain *meg* and *phó* (qualities possessed by inspired disciples of GAUDAMA), and *Neibban* (the Buddhist heaven), and whose images are sent from a desire that he should be worshipped; 2 ivory mats for T,HAUK KUON, king of *U'dí*'s own use; 2 ivory boxes; 2 ivory cushions; 2 pieces of yellow broad-cloth; 1 of green and 1 of scarlet; 10 pieces of *Bilat* chintz, 10 pieces of the same with white borders; 10 carpets from the ship country, (country beyond sea;) 4 lacquered-ware boxes, each capable of holding half a basket, 50 lacquered-ware boxes, each capable of holding an eighth of a basket; 3 viss of white sandal-wood, and 3 of red; 100 bundles of gold leaf and 100 of silver leaf; 2

* According to the Burmese there were at one time in this world ten different kinds of elephants, each rising above the other in strength, in a decimal ratio. The lowest in the scale was the present common elephant, and the highest, which was named *Tsaddan* and the king of elephants, was the present white elephant.

† The meaning of this *Páli* title is thus rendered by the Burmese: "The illustrious and excellent, and, through good works, the great king of kings."

ruby rings ; 2 sapphire rings ; 60 viss weight of noble serpentine ; 2 elephants' teeth weighing 42 viss and 82 ticals ; 46 uncut rubies, 1 viss weight of *Moby* stone ; 15 peacocks' tail, with 3 male elephants and 2 female. Let these envoys return without delay."

The king of *Ava's* letter, besides not acknowledging the fraternity claimed by the emperor of *China*, and styling him simply " royal friend," has not the respectful particle " *bá*" which is given in the translation of the first part of the emperor's letter.

" Information obtained from THÍ-HA-TSÍ-THU' NÔRA-THA' and YA'ZA NÔRA-THA'-GYÔ-GAUNG, who accompanied the Tsa-re-gyih NE-MYÓ-MEN:-THA, when he was deputed as envoy to the Chinese city in the kingdom of *Gan-dá-la-yít*, on examining them regarding the affairs and customs of *China*, and the distances of the different halting places on the road.

" In the year 1185, (A. D. 1823,) on the arrival of YAN-TA'-LÔ-YE' and YENG-TSHENG-YE' with more than thirty other Chinese, and with a royal letter and various cloths and presents from the emperor of *China*, who desired to cultivate the same kind of friendship as had existed in the time of his grandfather and father, the king appointed the Tsa-re-gyih NE-MYÓ-MEN:-THA and us as his envoys, to proceed and convey to the residence of the emperor of *China* a royal letter on gold, and various presents in return. We left the great and golden city of *Ya-ta-ná-pú-ra* (*Ava*) on the 18th June, 1823, and in twenty-nine days arrived at the city of *Ba-mô*, on the 17th July. On the road between *Ava* and *Ba-mô*, there are many large cities and villages. On our arrival at *Ba-mô*, the principal Chinese envoys, YAN-TA'-LÔ-YE' and YENG-TSHENG-YE', dispatched a letter in the Chinese language to HU'-TA'-LÔ-YE', the governor of the city *Mó:myín*, informing him of our arrival at *Ba-mô* with a letter on gold, and other things from the Burmese sun-descended king. The governor of *Ba-mô*, also, sent orders by letters to the chiefs of the wild Ka-khyens* residing on the hills and in the wood between the two countries of *Ava* and *China*. We stopped at *Ba-mô* twenty-nine days, until the 14th of August. We left *Ba-mô* on the 15th August, escorted by the Ná-k,hán (*Nga-shán*), the city writer NGA-BÓH, with two hundred followers, and by four hundred Ka-khyens and their chiefs, making altogether six hundred men. In six stages we reached the village and fortified chokey of *Luay-laing*. On the road between *Ba-mô* and *Luay-laing-ken* there are many cities and villages†. At *Luay-laing-ken* we found the men sent by the governor of *Mó:myín* to receive us, and therefore sent back to their homes the people from *Ba-mô*, and the Ka-khyens and their chiefs, who had come as our escort. We left *Luay-laing-ken* with the men and the horses that had been sent from *Mó:myín* to receive us, and after travelling a

* Wild mountainous race on the frontiers of *China*.

† This sentence must have been interpolated by the Burmese ministers, for the country between *Ba-mô* and this chokey consists of hills and forests inhabited only by the wild Ka-khyens.

distance of ten *taings* reached the city of *Mô:wûn*. In the villages lying between *Luay-laing-ken* and *Mô:wûn*, there are many pagodas and *za-yats**. In the monasteries to the eastward of the brick-house, in which the *Tsô:buáh* of *Mô:wûn* resides, there are many *Yahans*†, who have *Then-gans*‡, and other articles of use like the Burmese *Ya-hans*; who adore the three objects§ of worship; observe the five commandments||, and distinguish the ten greater and the ten lesser sins¶. We stopped at *Mô:wûn* two days, and on leaving it reached the city of *Mô:myín* in five stages. A *taing* before reaching that city we met its governor, who was coming to receive us, seated in a sedan chair, and having red umbrellas, and men bearing muskets, swords, lances, and bows and arrows arranged on his right and left. We entered the city of *Mô:myín* with the governor, and were accommodated in a brick-built house with a conference shed, on a space of ground of 30 *tas* or 210 cubits in extent. We remained in this city eleven days, occupied in preparing boxes, in which to pack up the royal presents. The governor furnished the ambassadors with sedan chairs, and our followers with horses, and just as we were about to take our departure, an order from the emperor of *China* was received, which was transmitted by the *Tsoún-tú* of *Yu-nan*, and stated, that in consequence of the successful services of the principal Chinese envoys who had come to *Ava*, *Tsô-lô-tsou'n* and *Toun-lô-tsou'n* were appointed to a command of 3,000 soldiers each at *Mô:myín*, where they were to remain, and *YAN-TA'-Lô-YE'* was appointed to a similar command at *Maing:tshí*, where he was to

* Buildings erected for public accommodation.

† Buddhist priests.

‡ Priest's yellow cloak or garment.

§ Buddhist triad, *Buddh*, his precepts, and his disciples.

|| Not to kill, steal, commit adultery, use intoxicating substances, or utter falsehoods.

¶ The ten greater sins are called *lein*, appearance or characteristic, because the commission of them by a priest involves the forfeiture of his dress and condition. They are,—1st. Taking the life of another. 2nd. Taking the property of another without his permission. 3rd. Having sexual intercourse. 4th. Uttering falsehood with the intention of injuring another. 5th. Using intoxicating substances. 6th. Speaking in depreciation of *Buddh*. 7th. Speaking in depreciation of his precepts. 8th. Speaking in depreciation of his disciples. 9th. Entertaining heretical doctrines. 10th. Having carnal connexion with female *Ya-hans*.

The ten lesser sins are called *dán*, penalty or punishment, because the commission of them subjects the priest to certain penalties, such as having to bring a certain number of baskets of sand or pots of water to the monastery. They are,—1st. Eating food after the sun has passed the meridian. 2nd. Hearing or seeing music, singing or dancing. 3rd. Ornamenting the person and using perfumes. 4th. Sitting on a higher or more honorable place than your religious teacher. 5th. Touching with pleasure gold and silver. 6th. Striving from covetousness to prevent other priests receiving charitable donations. 7th. Striving to render other priests discontented so as to prevent their remaining in the monastery. 8th. Striving to prevent other priests acquiring wisdom and virtue. 9th. Reviling and censuring other priests. 10th. Backbiting and exciting schisms and separation among priests.

remain. With *WU'N-TA'-LÔ-YE'*, whom the governor *HU'-TA'-LÔ-YE'* appointed to take charge of us, and the Chinese interpreters *YENG-TSHENG-YE'*, *LA-TSHENG-YE'*, and *YA-TSHENG-YE'* we left *Mô:myin*, and in four stages reached the river called by the Chinese *Loăn-kyan* and by the Burmese *Mé-khaung*. To cross this river there are two iron chains, each consisting of three chains twisted together and measuring about ten fingers in diameter and 245 cubits long with hooks at the ends. These being drawn over the stream, which is 140 cubits broad, and fixed to two posts on each bank, a plank flooring is laid upon them, at the sides of which flooring posts are let in, and the whole is covered by a roof. This bridge is called an iron bridge and is 7 cubits broad. Thence in seventeen stages we reached the city of *Maing:tshì*. Here on a piece of ground 175 cubits in extent, paved with bricks, a religious edifice is erected, in which is placed a gilded wooden image of *GAUDAMA* sitting cross-legged on his throne. We were lodged in some brick-built houses to the south and north of this religious edifice. The *Tsoũn-tũ* lives in a brick house of 70 cubits in extent. We remained here twenty days, and left it on the 21st October, 1823, the *Tsoũn-tũ* of *Maing:tshì* having given to us, the five ambassadors, sedan chairs with glasses at the sides, and horses to our followers, with bearers and attendants for the whole of our party. In twenty-four stages we reached the city of *Tsein-shuon-fũ* where we stopped a day to prepare the boat in which we were to embark. There were ten boats for the Chinese and ten boats for us; and having obtained the requisite number of boatmen and porters, we moved down the stream, and in fifteen days reached the city of *Tshan-taik-fũ*, where there are many ships (junks) and boats. Between *Tshan-taik-fũ*, and *Tsein-shuon-fũ*, there are many large towns and villages. We stopped a day at *Tshan-taik-fũ*, and then proceeded by land in thirty-seven stages to the *Tseng-tein-fũ*. This city is one *taing* square, and in the middle of it there are four pagodas 40 or 50 cubits high, built in shape like the base of a *Phoũn-gyih's* or Buddhist priest's flag staff, and a large *kyauing* or monastery with five roofs of green and red color, and with a winding staircase. In the centre of this monastery there is a gilded image of a *nat* 25 cubits high, standing upright and having *lotus* leaves on its head, and within a hole made between the eye-brows of this *nat*, we saw an image of *GAU-DA-MA* sitting cross-legged and about eight fingers breadth in height. Between *Tshan-taik-fũ* and *Tseng-tein-fũ* there are many large towns and villages. After leaving *Tseng-tein-fũ* we arrived in ten stages, on the 22nd January, 1824, at the city of *Pékyin* (*Pekin*) the residence of the king of *China*. We left *Ba-mô* on the 15th August, 1823, and arrived at the Chinese capital on the 22nd January, 1824, being one hundred and sixty-one days, or five (Burmese) months and twelve days.

“On arriving at *Pekin* we were lodged at the brick-house, where it is customary for all ambassadors to be accommodated, about 2,100 cubits distant from the walls of the inner town, to the north-west of the palace

within the large town. We think the walls of the outer* town are about 20 cubits high and 14 thick, and those of the inner town 18 cubits high and $10\frac{1}{2}$ thick—and the former are complete in parapets and platforms. The walls of the large outer town are entirely of brick, and the top of the walls of the inner town is covered with sheets of copper, on which there is a coat of yellow paint. On the southern side of the large town there is a large *hog's head*† of brick work, extending from the south-east angle to the north-east, and we entered by the *Khăn-shyi-mhein* gateway of this *hog's head*, and by the centre gateway of the great town called *Tsheng-mhein*. We first went to the house of the Wún-gyíh Lí-PU'-TA'-YENG, situated within the large town, and were requested by him to deliver the royal letter; and on our doing so, he bowed his head down respectfully and came forward to receive it. There is no Lhuot or Yoŭn (minister's council house or court house, in which it is customary for ambassadors in *Ava* to deliver their letters). We were lodged in a brick-house with a conference shed within the large town, and to the north-west of the palace enclosure walls.

“The outer large town may be about 14,000 cubits from north to south, and about 6,300 cubits from east to west. The inner town may be about 4,200 cubits from north to south, and about 3,500 cubits from east to west. There are twenty gates, and their names are—to the southward, in the *hog's head*, there is the Toŭn-byăn-mhein gateway; then, going to the westward, the Shyā-hŭ-mhein, Shyā-kō-mhein, Yoŭn:tshein-mhein, Năn-shyín-mhein, Khăn-shyi-mhein, and lastly to the south-west, the Shyín-byăn-mhein, altogether seven gateways. On the eastern face of the great city, there are to the eastward, the Toŭn-tshein-mhein gateway, and to its southward the Tshí-wā-mhein. On the southern face to the south-east, the Tshŭ-wein-mhein; then, in the centre the Tsheng-mhein, and to the south-west, Shyŭn-tsí-mhein. On the western face, to the south-west, the Phyeng-tsō-mhein, and to the northward of it the Shyeng-tsí-mhein. On the northern face, to the west, the Tō-shyăn-mhein, and the east, Anthein-mhein, making sixteen gateways altogether in the large town. In the inner town there is to the eastward To-wha-mhein, to the southward T,ha-tseng-mhein, to the westward Shyín-wā-mhein, and to the northward Hō-mhein gate, making four gateways in the inner town, and twenty altogether in the two towns.

“The second and inner wall around the residence of the emperor of *China* is surrounded by a moat with water and has towers and fortifications. Its extent from north to south is 1,400 cubits, and from east to west about 2,300 cubits, and it is 20 cubits high and 14 thick. The front of

* This appears to be “the Tartar city,” and by the “inner town” I conceive the external enclosure of the palace is meant.

† This is the usual term for the bastion of a fort, but here it appears to be applied to the whole of that portion of *Pekin* called “the Chinese city.”

the palace faces to the southward. In regard to the construction of the palace, on a terrace of bricks 5 cubits high, 210 cubits long, and 140 broad, covered with plaster, posts are let in, surrounded by stones at bottom, and on them transverse beams and rafters are placed, and a double roof without a spire, covered with yellow Chinese tiles. The sides of the palace are of plank painted with blue and red color. The planks are not of teak-wood but of fir. The centre gateway on the southern sides of the palace enclosure wall is arched, and is that used by the emperor of *China*, and on each side of this gateway there are two smaller entrances used by the ministers and officers. The centre gateway on the northern face also is arched, and has smaller entrances on each side. The western and eastern faces have the same kind of gateway and entrances.

“ Whilst residing in the brick-house the five principal men of the Burmese Mission were daily supplied at night and in the morning with rice, salt, fish, *nyā-pi*, chillies, onions, greens, pork and fowls under the direction of the Chinese officer PAN-TSHAING and his servants, Teng-tsani, who watched us day and night. The thirty-two inferior people (of the mission) also were daily supplied with rice and curries ready dressed.

“ At 3 o'clock of the morning of the day of our arrival, five carriages with 16 horses were sent to us, and we were summoned by the Lí-pú-tá-yeng Wúng-gyíh to attend on the emperor, who was coming out to see the amusement on the ice. We proceeded accordingly, and joined Lí-pú-tá-yeng on the outside of the gateway, on the northern face of the palace enclosure wall. We got out of our carriage and waited with the Wúng-gyíh outside of the gateway for the appearance of the emperor. About twenty-two minutes after we arrived, the sound of large gongs, bells and trumpets announced the approach of the emperor, and shortly after he made his appearance. Outside of the gateway there were two rows of twenty men in each, waiting with large fans in their hands, and when the emperor came out of the gate, these men stooped down and formed an arch with their fans, but when the emperor had passed through this arch, they did not follow him, but remained where they were.—With respect to the ceremonial on this occasion of the emperor's appearing abroad—in front of his party there were four umbrellas of red, blue, green and black colours, two on each side, on the right and left of the road ; behind them there were two rows of horsemen, twenty in each, armed with swords—behind them, came two rows, six men in each, of officers of rank, who had obtained two or three peacock's feathers, armed with swords and dressed in the fashion of the country. Behind them came two rows more, six in each, of officers of rank, who had obtained two or three peacock's feathers, armed with bows and arrows. Seven cubits in front of the emperor and in the middle of the road, a yellow umbrella was carried, and the emperor followed, seated in a yellow sedan chair borne by eight men. Behind him there were officers of rank armed with swords and bows and arrows, and arranged in the same manner as those who preceded him. After the

emperor's party, his relatives, some in sedan chairs, some on horseback; and some in carriages followed;—and after them came the ministers and officers, and a party of men in charge of the ladies of the palace (eunuchs). On arriving at a lake situated more than 1050 cubits to the north-west of the palace enclosure wall, on which the ice amusement was to take place, and near which there was a garden with a small rocky hill, the emperor's sedan chair was set down at the side of the garden. In the lake measuring about 700 cubits in extent, the top of the water consisted of hard solid ice upwards of three cubits thick, and on this ice a target with a pole 15 cubits high was fixed. A hundred soldiers armed with bows and arrows, and having plates of iron fixed with nails on their shoes, stood with their feet close together and shot with arrows at the target. Some hit the target and some not; but after discharging their arrows, they moved forward, not as in walking, but with both feet close together, suddenly to a distance of 140 or 210 cubits, and turned round and went away. The emperor did not get out of his sedan chair, but had it placed on the lake upon the ice, whence he looked on at the amusement. We stood about 42 cubits distant from the emperor with the Toi-tshuon (Si-chuen?) Mahomedan ambassadors, but in front of them, having our shoes on, and the official cap, dress and ear-rings which his majesty had bestowed upon us. The emperor, we saw, was dressed in yellow-coloured pantaloons and a fur jacket, and he returned to the palace from the ice amusement at 7 o'clock, in the same order as before, and we also returned to the ambassadors' house.

“On the 26th January we sent the royal presents under charge of YΛ'ZA NÔRA-THA'-GYÔ-GAUNG, and on the 30th we had an audience of the emperor in the front of the palace, in the *Thaik-hô-teng** apartment. We were asked if the Sun-descended king, the queen, royal family and ministers were well and happy, and respectfully answered, that through the grace of the three objects of worship, they were well and happy. We were treated in the palace with sweetmeats and fruit, and then returned home. On the 31st of the same month we again went to the palace on the occasion of the emperor going out to a temple. On the 1st February we were again admitted into the palace, and had an audience; and again on the 6th and 7th February; and again on the 11th, when the emperor was going out to the *Tsi-kuon-kô* garden, situated about 700 cubits to the west of the palace. A roll of red, blue, and yellow silk was given to each of the five principal men of the mission, and we were treated with cakes and sweet and sour fruit. On the 12th February we were again admitted, when the emperor was going out to see fire-works of white and yellow colours, resembling flowers and flags, let off in the *Yue-mi-yeng*† garden to the north-west of the palace. On the 12th a carriage with 16 horses was

* DU HALDE's *Tai-ho-tien*, or hall of the Grand Union.

† Sir G. STAUNTON's gardens and pleasure grounds of “*Yuen-min-yuen*.”

sent, and we were invited by LI'-PU'-TA-YENG to accompany the emperor, when he was going out, and we went accordingly. We were accommodated in a brick-house about 3500 cubits distant from the palace in the *Yuh-mi-yeng* garden. On the night of the 14th February we attended the emperor in the *Yue-mi-yeng* garden, and saw the fire-works, and were treated with sweetmeats and eatables and drinkables. On the 15th February we went again, and were again treated with refreshments, and on the night of the same day we went again, when fire-works were let off. On the 19th February LI'-PU'-TA-YENG having sent word to us to request leave to return, when we went before the emperor we submitted our request. The emperor ordered, that suitable royal presents and gifts for the ambassadors should be prepared and delivered, and the envoys allowed to return; and on the 20th we returned to our former residence within the large city. The emperor of *China* proceeded from his palace in *Pekin* to his palace in the city of *Ye:hô* (*Zheho*) in *Tartary* on the 24th February. On the 25th we went by desire of LI'-PU'-TA'-YENG to receive and take away the royal presents, and on entering the palace the royal presents and cloths were packed in boxes and delivered to us, under the direction of LI'-PU'-TA'-YENG, and we received and took them away. Ten roll of fine silk were given to each of us five principal men of the mission, and to the subordinate persons five pieces of silk and five pieces of blue cotton cloth. On the 27th February we went to LI'-PU'-TA'-YENG's house to take leave. LI'-PU'-TA'-YENG having furnished us with five carriages and men, we took our departure on the 29th February, 1824.

“Whenever the emperor came out of the palace or went to the *Yue-mi-yeng* garden he was attended by two rows, two in each, of persons who had obtained two or three peacock's feathers, or who wore red on the tops of their caps. They used fur cushions or carpets spread on the floor.

“For the use of the emperor in the hot season, the ice on the lake to the north-west of his palace enclosure is broken open, as we saw, with hatchet and axes, &c., and pieces about three or four cubits thick and two or three long, have a hole made at one end as is done by us to logs of timber and are conveyed by ropes and put into the moat surrounding the palace enclosure. This ice melts and becomes water in consequence of the heat in the increasing moon of *Ta-baung*, (March.)

“The emperor appoints seven different Tsoŭn-tus. The westward two, to the southward three, and to the eastward two. There is no Tsoŭn-tū appointed to the northward, where the kingdom joins to *Tartary*. There are thirteen officers who exercise authority under one of the western Tsoŭn-tūs. The names of those who receive orders from the Títū, who commands the soldiers under the Tsoŭn-tū, are *T'i-taik*, *Kheng-taik*, *Shyín-taik*, *Taŭk-taik*, *Tshăn-kyan*, *Yô-kyge*, *Tū-tseng*, *Shyô-pe*, *Tsheng-tsoŭn*, *Pé-tsoŭn*, *Wū-tsoŭn*, and *Lô-tsoŭn*, making altogether thirteen military officers. There are ten civil officers under the Tsoŭn-tū, and their names are PHU'-TAIK who exercises authority over the revenue officers, sitting

on the left hand of the Tsoŭn-tū and on an equality with him ; and under PHU'-TAIK and receiving orders from him, are, PHU'-KHUENG, TSÓ-KHUENG, YENG-TSE, YENG-TAUNG, PAN-TSHAING, TA'-KAUK-KOU'N ; SHYAU-K-KAU-KOU'N, TU'TÓ, and TENG-TSANÍ, making ten great and small civil officers*. The Tsoŭn-tū has authority over and issues orders equally to both classes of officers. In the same manner as we have above described, the other six Tsoŭn-tūs exercise authority over the military and revenue officers. With each Tsoŭn-tū under the Tí-tú there are seven military officers, and under each military officer there are 3,000 musqueteers, making 21,000 under the seven officers. Under the seven Tsoŭn-tūs, there are seven Tí-tús, 49 military officers and 147,000 soldiers. When the soldiers are to receive their monthly pay, orders are given to the Phū-taik, who brings the money to the Tsoŭn-tū, and he delivers it to the chief of the soldiers, to the Tí-tú, who distributes it amongst the soldiers, at the rate of three ticals of Chinese silver a man per month. There are eight officers near the person of the emperor, receiving and executing his orders. The Wún-gyíh (minister) LI-PU'-TA'-YENG, LI'-PU'-TA'-YENG, KOUN-PU'-TA'-YENG, HU'-PU'-TA'-YENG, PYENG-PU'-TA'-YENG, SHYENG-PU'-TA'-YENG, NUE-PU'-TA'-YENG, and KYÓ-MHEIN Tí-TU'. LI-PU'-TA'-YENG has a general control over the affairs of the empire. LI'-PU'-TA'-YENG has authority over ambassadors and persons who have come from a distance. KOUN-PU'-TA'-YENG has authority over all that relates to learned men and artificers. HU'-PU'-TA'-YENG has authority over the revenue, cultivation of lands, and lists of the population taken once in three years. PYENG-PU'-TA'-YENG has authority over carriages, horses, and boats used for conveyance to different places, and he grants orders with his seal whenever they are required†. SHYENG-PU'-TA'-YENG exercises authority over thieves, robbers, and all whose crimes are deserving of punishment. NUE-PU'-TA'-YENG has charge of the palace, and all that relates to it. KYÓ-MHEIN Tí-TU' has charge of the different gates of *Pekin*.

“On the jackets worn by the military officers, on the breast and back, there is the figure of a tiger ; and on the jackets worn by the civil officers, on the breast and back, there is the figure of a bird. On the breast and back of the jackets worn by the 147,000 *Ló-tseng*, (Chinese word for musqueteers ?) there is an inscription in the Chinese character. The civil and military officers, according to their several talents, receive as a mark of distinction, one, two or three peacock's tails. There are not more than three peacock's tails ; but the mark of distinction above that number, is to have the top of the head-dress colored red. The royal family wear on the top of their head-dress three rows of rubies. When a Chinese Tsoŭn-tū travels, there are five men on each side of the road in front of him, carrying iron chains and howling like dogs‡. The officers

* The names of these civil and military officers vary much from those given in Appendix 3 and 4 of Sir G. STAUNTON'S account of Lord MACARTNEY'S embassy.

† According to DU HALDE this officer has also the care of the troops.

‡ See DU HALDE'S Chapter on the Chinese form of Government.

under the Tsoŭn-tū are accompanied by six, four, or two men, according to the respective rank of such officers. Whenever all these officers, including the Tsoŭn-tūs, go abroad, a salute of three guns is fired, and at every military post, of which there is one at every two miles on the road, a salute of three guns is fired, when these officers arrive at those military posts. The Tsoŭn-tū, Tí-tú, Tí-taik, Kheng-taik, Shyín-taik, Tauk-taik with the civil officers Phū-taik, Phū-khueng, Tsō-khueng and Yeng-tse, every night at 9 o'clock shut their doors, fire three guns, and go to sleep. At dawn in the morning the doors of their houses are opened, and a salute of three guns is fired. The Tsoŭn-tū, Tí-tú, Phū-taik and all the other military and civil officers perform the public service on monthly wages, paid agreeably to their respective ranks. In order that the money of the poor may not be diminished, those who deserve flogging are flogged, and those who deserve imprisonment are imprisoned, (meaning that there are no fines.)

"In the empire of *China* there are no leaf palm, palmyra, mango, jack, betelnut, plantain, tamarind, lime, guava, or custard-apple trees. The trees which grow before you reach *Pekin*, in the neighbourhood of *Mō-myín*, *Yu-nan* and *Kue-chow*, are walnuts, chestnuts, pears, firs, wild palmyras, wild plantain trees, pumplemoos and oranges. In the city of *Pekin* there are not any large trees or bamboos, or fire-wood for cooking, as there are at *Ava*; there are fir trees only. Food is cooked with coal, and there is a separate hill from which the coal is brought.

"Between *Ba-mô* and the city of *Pekin* there are 120 stages, and a distance of 6,944,000 cubits. We halted in 59 cities and 59 villages, and twice in the jungle, making altogether 120 stages. We left *Ava* for *China* on the 18th June, 1823, and returned to *Ava* on the 14th March, 1825."

Route of a journey from the city of Ava to the city of Peking, travelled by a Mission deputed by the King of Ava to the Emperor of China in the year 1823.—(Literally translated from the Burmese official document.)

Date.	Names of places.	Taings*.	Remarks.
18th June, 1823.	Left the city of <i>Ava</i> , and proceeded to the city of <i>Ama-ra-pū-ra</i> , where the mission stopped a day to complete the equipment of their boats,	3	* The estimated distances are given in the Burmese <i>taing</i> , equal to 2 miles 293 $\frac{2}{3}$ yds.; in round terms, two miles or one coss.
20th.	Villages of <i>Men-guon</i> and <i>Shyá-yaung</i> ,	4	
21st.	Village of <i>Ngá-bat-khyaung</i> (river),	10	
22nd.	Villages of <i>Yóin-pen</i> and <i>Ka-pyut</i> ,..	10	
23rd.	Chokey of <i>Tsám-bay-na-gó</i> , where the mission stopped two days, as there was no wind, and the boatmen were changed,.....	8	
26th.	City of <i>Kyán-nhyat</i> ,	9	
27th.	City of <i>Ta-gaung</i> ,	10	

Date.	Names of places.	Taings.	Remarks.
28th June, ..	Village of <i>Thí-gyain</i> , opposite to the town of <i>Mya-daung</i> ,	9	
29th.	Village of <i>En</i> , under <i>Mya-daung</i> , ..	8	
30th.	Village of <i>Ye-bout</i> under city of <i>Ka-tha</i> ,	8	
1st July, ..	Village of <i>Kyauk-thoun</i> , under the city of <i>Yen-gé</i> or <i>Yeng-khé</i> ,	7	
2nd.	Village of <i>Nga-lú-down</i> , under ditto,	6	
3rd.	Village of <i>Zí-byú-goun</i> , under <i>Shue-gú</i> ,	4	
4th.	Village of <i>Shue-boún-thá</i> , under ditto,	2	
5th.	City of <i>Shue-gú</i> . Here, in consequence of the stream running with unusual violence over the rocks, the mission durst not advance, and waited nine days,	2	
14th.	Village of <i>Nyaung-ben-thá</i> , under <i>Tsín-khan</i> ,	4	
15th.	City of <i>Tsín-khan</i> ,	2	
16th.	Village of <i>Len-ban-gya</i> , opposite to <i>Kaung-toún</i> ,	4	
17th.	City of <i>Ba-mó</i> , where the mission stopped 28 days, for answers to petitions sent to the king at <i>Ava</i> , ..	2	The Shan names are <i>Kat-mái</i> and <i>Man-mó</i> , and the Chinese <i>Tsín-kai</i> .—B.
	Travelled in 19 days,	112	Burmese Taings.
15th Augt.	Left <i>Ba-mó</i> , and halted at the village of <i>Tsí-en</i> or <i>Tsín-eng</i> ,	4	
16th.	<i>Ta-dá-gyih</i> , (great bridge,)	6	The Shan name is <i>Khó-lóng</i> , meaning also great bridge or causeway.—B.
17th.	On the <i>Ka-khyen</i> hill village of <i>Mhaing-toún</i> ,	6	
18th.	On the <i>Ka-khyen</i> hill village of <i>Hó-toún</i> ,	6	The Shan name is <i>Hó-tóng</i> , meaning end of the paddy fields.—B.
19th.	On the <i>Ka-khyen</i> hill village of <i>Mhaing-khá</i> ,	4	The Shan name is <i>Mung-khá</i> .—B.
20th.	At the <i>Luay-laing Ken-dat</i> , or fortified chokey of <i>Luay-laing</i> ,	4	Frontier post between <i>Ava</i> and <i>China</i> , which has a Chinese garrison of 100 <i>Ló-tseng</i> , (Chinese word <i>Ló-chiong</i> for soldiers.) The Shan name is <i>Loai-leng</i> , red hill.—B.
	Travelled in six days,	30	Burmese Taings.
21st.	City of <i>Mó-wán</i> . Here the mission stopped two days, in consequence of being fatigued,	9	The Shan name is <i>Múng-wan</i> , and Chinese name <i>Long-tchuen</i> .—B.
24th.	<i>Shyan-mue-loun</i> , <i>Ken-dat</i> , or fortified chokey of that name,	8	Here is a Chinese garrison of 1,000 <i>Ló-tseng</i> .
25th.	Village of <i>Móun-toún</i> ,	8	Shan name <i>Montong</i> .—B.

Date.	Names of places.	Taings.	Remarks.
26th Augt...	City of <i>Main-thí</i> or <i>Main-dí</i> , where the mission stopped a day,.....	7	Shan name of <i>Múng-Tí</i> , and Chinese name <i>Nan-ten</i> .
28th.	City of <i>Mó-mýn</i> , where the mission stopped 12 days, in consequence of the elephants intended as a present from the king of <i>Ava</i> to the emperor of China not having come up, and in order to give them a little rest after they joined,	10	
8th Sept. ..	Village of <i>Kan-lan-tsan</i> ,	8	Shan name <i>Kap-nám-chán</i> , meaning <i>Chan</i> river bazar.—B.
9th.	Village of <i>Pá-weng</i> ,	8	Shan name <i>Páwan</i> , under <i>Múng-khú-lóng</i> , near it.—B.
10th.	Village of <i>Phu-pyauk</i> , after crossing the <i>Sa-luen</i> river,	7	Shan name <i>Phu-phyao</i> .—B.
11th.	City of <i>Wung-tsheng</i> or <i>Wunzen</i> , where the mission stopped a day to receive some presents,	9	Shan name <i>Yóng-sang</i> , and Chinese <i>Yung-tchang-fú</i> .—B.
13th.	Village of <i>Shyan-mu-hó</i> ,.....	12	Called <i>Youn-byen-hien</i> in another journal.—B.
14th.	Village of <i>Yan-pyen-hien</i> ,	9	Called <i>Khuon-leng-bú</i> in another journal.—B.
15th.	Village of <i>Shyan-leng-po</i> ,	9	
16th.	<i>Yán-byí-hien</i> ,.....	11	
17th.	Village of <i>Hó-kyan-po</i> ,	6	
18th.	City of <i>Tsauk-chow</i> , under <i>Táki</i> ,	9	
19th.	Village of <i>Khou-haik</i> ,	8	Between these two places one day and stage are omitted in two different copies of the Envoy's journal I have procured. In the journal of a subsequent mission, <i>Yít-nan-yi</i> is set down between these two stages.—B.
21st.	Village of <i>Pá-póun</i> ,.....	6	
22nd.	Village of <i>Shya-khyauk</i> ,.....	6	
23rd.	Village of <i>Lí-hó</i> ,.....	6	
24th.	City of <i>Tshú-shyoun</i> (<i>Tehou-hiung</i>),..	6	
25th.	City of <i>Kueng-toun-hien</i> ,	7	
26th.	Village of <i>Shay-tse</i> ,.....	6	
27th.	City of <i>Lú-thoun-hien</i> ,	8	
28th.	Village of <i>Ló-ya-kuon</i> ,	6	
29th.	City of <i>An-leng-chow</i> ,.....	8	
30th.	City of <i>Yít-nan</i> , <i>Maing:Tshí</i> , the residence of the <i>Tsoun-tú</i> , where the mission stopped 20 days waiting for the elephants to come up,	6	
	Travelled in 26 days, ...	203	Burmese Taings.
21st Oct. ..	Left <i>Yít-nan</i> , and stopped at the village of <i>Wan-khyauk</i> ,.....	5	
22nd.	Village of <i>Yan-lein</i> ,.....	7	
23rd.	Village of <i>Yí-loún-tsan</i> ,	9	
24th.	City of <i>Má-loún-chow</i> (<i>Malong</i>),....	7	"This is the city of the three Queens," 3 Chinese ladies sent to the late king of <i>Ava</i> , <i>MEN:DARA'GYI'H</i> , and called princesses.
25th.	City of <i>Shyá-yí-chow</i> ,.....	5	
26th.	Village of <i>Pé-shue</i> ,.....	7	
27th.	Village of <i>Pyeng-yeng-hien</i> ,	6	
28th.	Village of <i>Yi-za-khoún</i> ,.....	7	
29th.	Village of <i>Yo-kuon-teng-tsan</i> ,	7	
30th.	Village of <i>Pé-shyan</i> ,	11	
31st.	Village of <i>A'-tú-teng</i> ,.....	6	
1st Nov. ..	City of <i>La-taing</i> ,.....	6	
2nd.	Village of <i>Bó-koun</i> ,.....	6	
3rd.	City of <i>Tsein-leng-chow</i> , (<i>Tchin-ning?</i>)	6	

Date.	Names of places.	Taings.	Remarks.
4th. Nov. ..	City of <i>An-shue-fú</i> , (<i>Ngan-chan</i> ?) ..	6	
5th.	Village of <i>Ngan-pyeng-hien</i> ,	8	
6th.	City of <i>Tsheng-tsein-hien</i> ,	6	
7th.	City of <i>Kue-chow</i> , (<i>Koet-yang</i> ?) Here the mission stopped a day to re- ceive some presents,	6	
9th.	<i>Loún-li-hien</i> ,	6	
10th.	Village of <i>Kue-tein-hien</i> ,	7	
11th.	Village of <i>Lyó-yan-tsan</i> ,	6	
12th.	Village of <i>Sheng-pyeng-hien</i> ,	8	
13th.	City of <i>Khan-pyeng-chow</i> , (<i>Koang- ping</i> ?)	7	
14th.	Village of <i>Tsi-pyeng-hien</i> ,	7	
15th.	City of <i>Tsein-shuon-fu</i> , (<i>Tchin-yuen</i> ,) where the mission stopped a day to prepare and embark in boats,	7	
	Travelled in 25 days,	169	Burmese Taings.
17th.	Left <i>Tsein-shuon-fú</i> by water and proceeded down the stream to <i>Tshi-tshein-hien</i> ,	9	
18th.	Village of <i>Tá-yi-than</i> ,	13	
19th.	Village of <i>Pyan-shue</i> ,	10	
20th.	City of <i>Yuón-tsó-fu</i> ,	10	
21st.	Village of <i>Tsoún-than</i> ,	12	
22nd.	City of <i>Houín-kyó-chow</i> ,	11	
23rd.	City of <i>Ngan-kyau-chow</i> ,	6	
24th.	Village of <i>Totín-wín-ló</i> ,	8	
25th.	Village of <i>Shi-wú-shithó</i> ,	13	
26th.	Village of <i>Má-tsein-ngó</i> ,	6	
27th.	City of <i>Shyeng-tsó-fú</i> , (<i>Tching- tcheong</i> ,)	8	
28th.	Village of <i>Kyay-tan</i> ,	11	
29th.	Village of <i>Kaing-shyó</i> ,	10	
30th.	Village of <i>Tauk-shyü-hien</i> ,	12	
1st Dec. ..	City of <i>Tshan-taik-fú</i> , (<i>Tchang-te</i> ,) where the mission disembarked from the boats, and stopped a day,	9	
	Travelled in 15 days,	148	Burmese Taings.
3rd.	Left <i>Tshan-taik-fú</i> , by land in lit- ters or sedan chairs, and halted at <i>Tá-loún-tsan</i> ,	6	
4th.	Village of <i>Tsi-khuá-yi</i> ,	6	
5th.	City of <i>Li-chow</i> ,	6	
6th.	Village of <i>Shue-leng-yi</i> ,	5	
7th.	Village of <i>Koun-gan-hien</i> ,	8	
8th.	Village of <i>Tshuon-leng-ye</i> ,	5	
9th.	City of <i>Kyeng-tsó-fú</i> , (<i>Kin-tcheou</i> ,) ..	6	
10th.	Village of <i>Kyeng-yeng-ye</i> ,	9	
11th.	City of <i>Kyeng-mein-chow</i> , (<i>Kin-men</i> ,)	9	
12th.	Village of <i>Leng-yan-ye</i> ,	12	
13th.	Village of <i>Yí-tshein-hien</i> ,	9	
14th.	City of <i>Thuon-tsheng</i> , where the mi- sion stopped two days to prepare carriages for prosecuting the jour- ney, (<i>Syang-yang</i> ?)	9	
	Travelled in 12 days,	81	Burmese Taings.

Date.	Names of places.	Taings.	Remarks.
17th Dec. ..	Left Thuon-tsheng in carriages, and stopped at the village of <i>Lyó-yeng-yí</i> ,	6	
18th.	Village of <i>Theng-yé-hien</i> ,	6	
19th.	Village of <i>Leng-yeng-yí</i> ,	6	
20th.	City of <i>Nan-yan-fú</i> , (<i>Nan-yang</i> ,)....	6	
21st.	Village of <i>Pó-wun-yí</i> ,	6	
22nd.	City of <i>Yui-chow</i> , (<i>Yu</i> ?)	6	
23rd.	Village of <i>Kyó-shyeng</i> ,	9	
24th.	Village of <i>Shan-hien</i> ,	9	
25th.	City of <i>Tshan-kó-shí</i> ,	11	
26th.	Village of <i>Sheng-tseng-khyeng</i> ,	6	
27th.	City of <i>Tseng-chow</i> , (<i>Tching</i> ?)	10	
28th.	Village of <i>Shyeng-tsé-hien</i> ,	6	
29th.	In consequence of a storm the mission stopped on the bank of the <i>Whún-hó</i> river this day,	1	
30th.	Village of <i>Khan-tshuon-yí</i> , where the mission stopped one day to enable some of the party detained crossing the <i>Whún-hó</i> (<i>Hoangho</i>) river, to come up,	5	
1st Jan. 1824.	Village of <i>Shyeng-shan-hien</i> ,	6	
2nd.	City of <i>We-khue-fú</i> , (<i>One-kuin</i> ,)....	6	
3rd.	Village of <i>Yí-koun-hien</i> ,	12	
4th.	City of <i>Tshan-tuy-fú</i> , (<i>Tchangte</i> ,)....	7	" One of the male elephants died here."
5th.	City of <i>Tsán-chow</i> ,	7	
6th.	Village of <i>Han-thán-hien</i> ,	7	" One of the male elephants died here."
7th.	City of <i>Yuon-tek-fú</i> , (<i>Chunte</i> ?)....	12	
8th.	Village of <i>Nein-shí-hien</i> ,	6	
9th.	Village of <i>Pó-shyé-hien</i> ,	6	" The female elephant died here."
10th.	Village of <i>Luon-tshóun-hien</i> ,	12	
11th.	City of <i>Tseng-tein-fú</i> , (<i>Tching-ting</i> ,)	6	Here is an image of GAUDAMA sitting cross-legged, placed in a <i>Ta-zaung</i> (4-cornered religious edifice) with five encircling gradations or stories.
12th.	Village of <i>Tsheng-lu-hien</i> ,	9	
13th.	City of <i>Teng-chow</i> , (<i>Ting</i> ?)	6	Five days' journey from this place on <i>Tsú</i> or <i>Wú-tait-shan</i> hill, we were told, that there are two of GAUDAMA'S canine teeth, and eight other teeth.
14th.	Village of <i>Puon-tsheit-khyó</i> ,	9	
15th.	City of <i>Pauk-teng-fú</i> , where the mission stopped a day to receive presents, (<i>Pao-ting</i> ,)	6	Here the Tsoun-tu of <i>Tsút-H</i> resides.
17th.	Village of <i>Ngan-shyú-hien</i> , (<i>Ngan</i> ?)	5	
18th.	Village of <i>Pe-khó</i> ,	6	
19th.	City of <i>Tsue-chow</i> , (<i>Tso-tcheou</i> ,)	9	
20th.	Village of <i>Tó-teng</i> ,	6	
21st.	Village of <i>Tshan-shyen-teng</i> ,	6	
22nd.	City of <i>Pé-kyín</i> (<i>Pé-kin</i>), where the <i>Udi-men</i> (king of the east, emperor of China) resides,	5	
	Travelled in 35 days,	247	Burmese Taings. Halted 81 days and travelled 140 days, altogether 221 days.

On returning from Peking the mission marched by land that portion of the journey between Tshan-taik and Tsein-shuon, which they had before gone by water.

Date.	Names of places.	Taings.	Remarks.
17th April, .. 1824.	Left city of <i>Tshan-taik-fú</i> , and stopped at the eight villages of <i>Thuon-tauk-shán</i> ,	7	
18th.	Village of <i>Shen-kyá-yi</i> ,	7	
19th.	Village of <i>Tseng-teng-yi</i> ,	6	
20th.	Village of <i>Kaik-teng-yi</i> ,	7	
21st.	Village of <i>Má-teng-yi</i> ,	7	
22nd.	City of <i>Shyeng-tsó-fú</i> ,	7	
23rd.	Village of <i>Tshuon-khyt-yi</i> , where the mission stopped two days,	9	
26th.	Village of <i>Tshan-tán-yi</i> ,	7	
27th.	Village of <i>Haik-yuón-yi</i> ,	9	
28th.	Village of <i>Koún-byeng-nhéng</i> ,	6	
29th.	City of <i>Yuón-tso-fú</i> ,	6	
30th.	Village of <i>Pyan-yue</i> ,	6	
1st May, ..	City of <i>Kuón-chow</i> ,	6	
2nd.	Outside of a village in the jurisdiction of <i>Sheng-yít-kue</i> ,	6	
3rd. ..	Village of <i>Tsheng-khye-hien</i> ,	5	
4th.	City of <i>Tsein-shuon-fú</i> ,	6	
Travelled in 16 days,		107	Burmese Taings.

[To be continued.]

II.—*Note on the Facsimiles of Inscriptions from Sanchí near Bhilsa, taken for the Society by Captain ED. SMITH, Engineers; and on the drawings of the Buddhist monument presented by Captain W. MURRAY, at the meeting of the 7th June. By JAMES PRINSEP, Sec. As. Soc.*

All that I expressed a hope to see accomplished, when publishing my former note* on the Bauddha monument of *Sanchí*, has at length been done, and done in a most complete and satisfactory manner. We have before the Society a revision of the inscription with which we were but tantalized by Mr. HODGSON's native transcript:—a collection of the other scattered inscriptions alluded to by Captain FELL;—and pictorial illustrations of the monument itself and of its highly curious architectural details. Let us now take a hasty glance at the results, and see whether they have justified the earnestness of my appeal, and the punctuality, care and talent in responding to it displayed by Captains E. SMITH and W. MURRAY.

The chief inscription is restored by Captain SMITH's facsimiles so perfectly that every word can be read except where the stone is ac-

* Journal Asiatic Society, vol. III. p. 488.

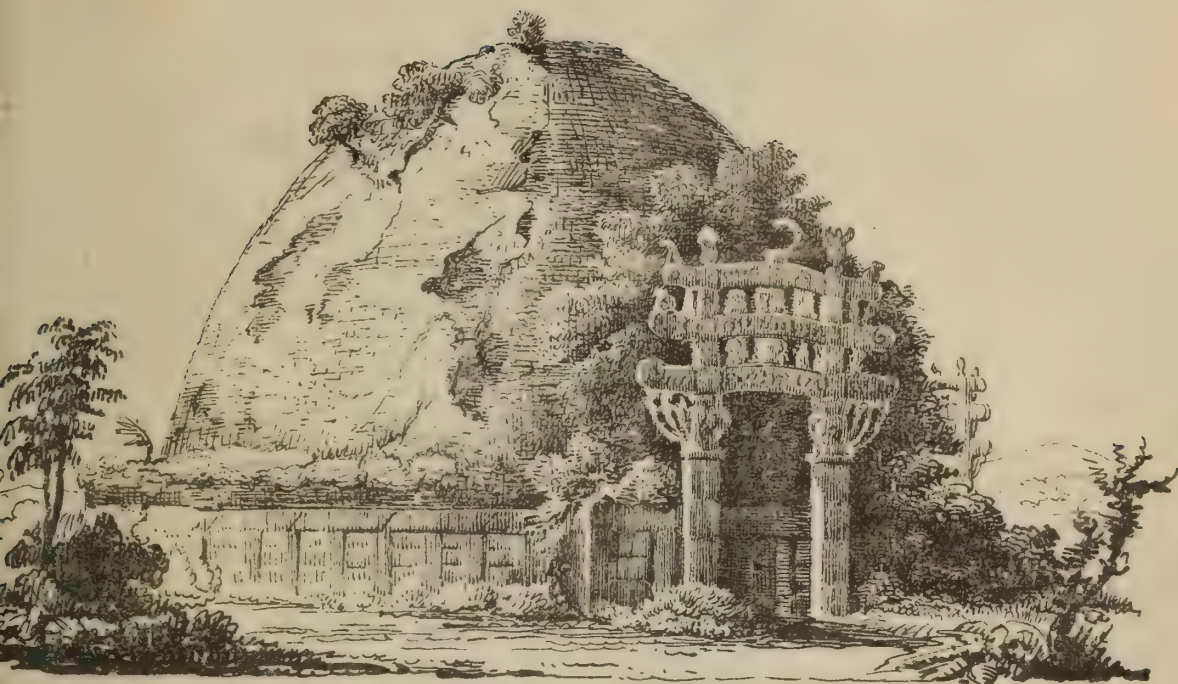
tually cut away. It contains, as will be seen presently, and as M. JACQUET was able to guess with infinite trouble from the former transcript, an allusion to Maharāja CHANDRA-GUPTA, with the advantage wanting in other inscriptions of this great prince, of a legible date. Moreover, it contains the name of the current coin of the period, and leads to very curious conclusions in regard to the source of the money of India at that time. A second inscription somewhat similar to the first, which had escaped Mr. HODGSON, has been brought to light: and in addition to these a number of minor inscriptions in the ancient lāt character.

These apparently trivial fragments of rude writing have led to even more important results than the others. They have instructed us in the alphabet and the language of those ancient pillars and rock-inscriptions which have been the wonder of the learned since the days of Sir WILLIAM JONES, and I am already nearly prepared to render to the Society an account of the writing on Sultán Fīroz's lāt at *Delhi**, with no little satisfaction that, as I was the first to analyze those unknown symbols and shew their accordance with the system of the Sanscrit alphabets in the application of the vowel-marks, and in other points, so I should be now rewarded with the completion of a discovery I then despaired of accomplishing for want of a competent knowledge of the Sanscrit language†.

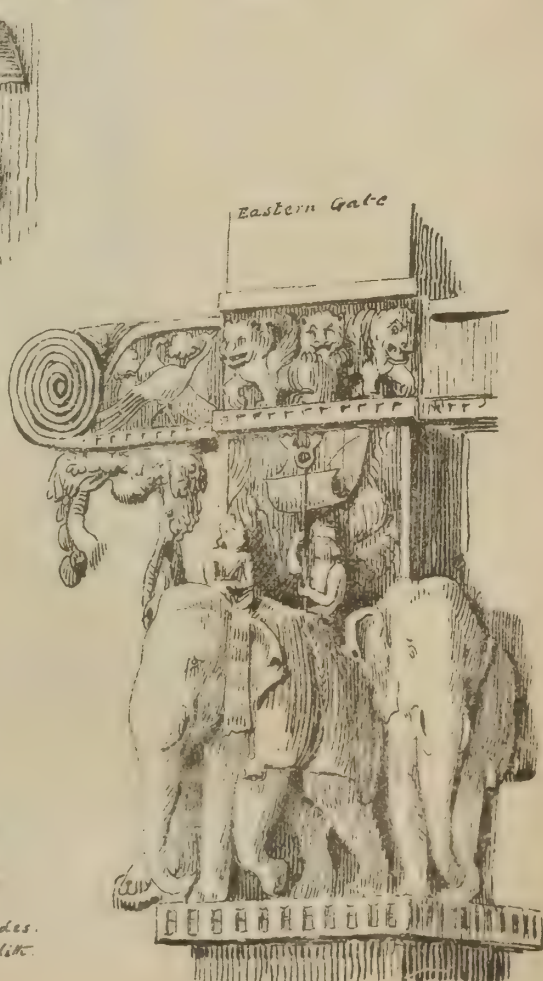
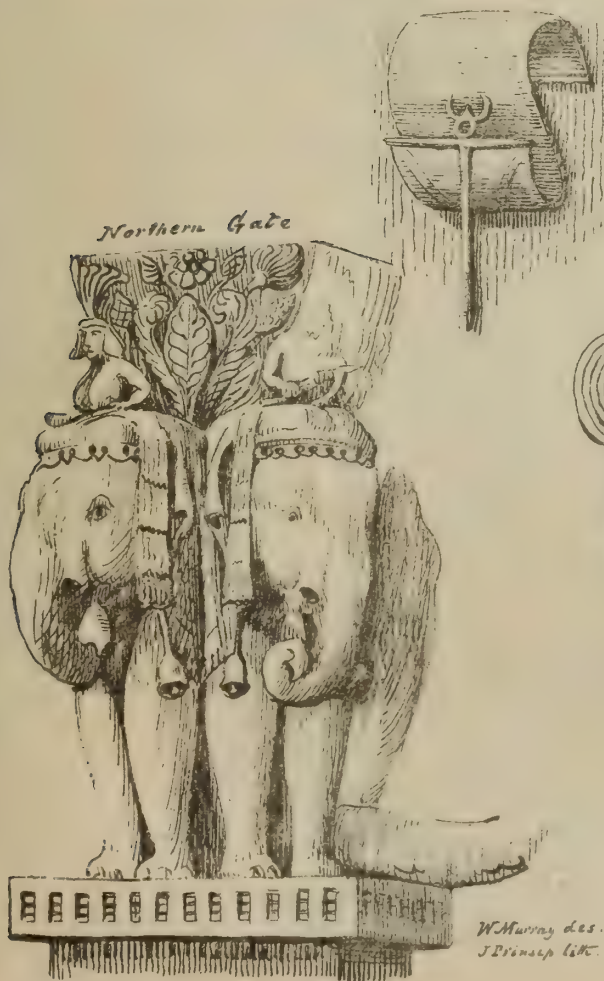
As to Captain MURRAY's beautiful drawings, I only regret that it is impossible to do them justice in *Calcutta*. I have merely attempted in the accompanying lithographic Plates XXVIII. and XXIX. to give a reduced sketch, shewing the general outline of the building (of which a rough plan was published with my former note), and the peculiar form of the gateways, on one of which both the inscriptions were found. Of them Captain MURRAY writes: "The form of the gateways is, as far as I know, perfectly unique, and however it may outrage all the canons of architectural proportion, there is an according propriety in it perfectly in keeping with the severe simplicity of the boundary palisades and the massive grandeur of the lonely and mysterious mound; and its lightness is so combined with solidity and durability that it is with a mixture of awe, and reverence, and admiration you contemplate this unknown work of forgotten times."

A native drawing of one of the sculptured compartments of the gates was made public by Dr. SPILSBURY. It represented the procession establishing the chaitya itself: a common subject on such monuments. Others exhibit the worship of the sacred tree of BUDDHA:—but the

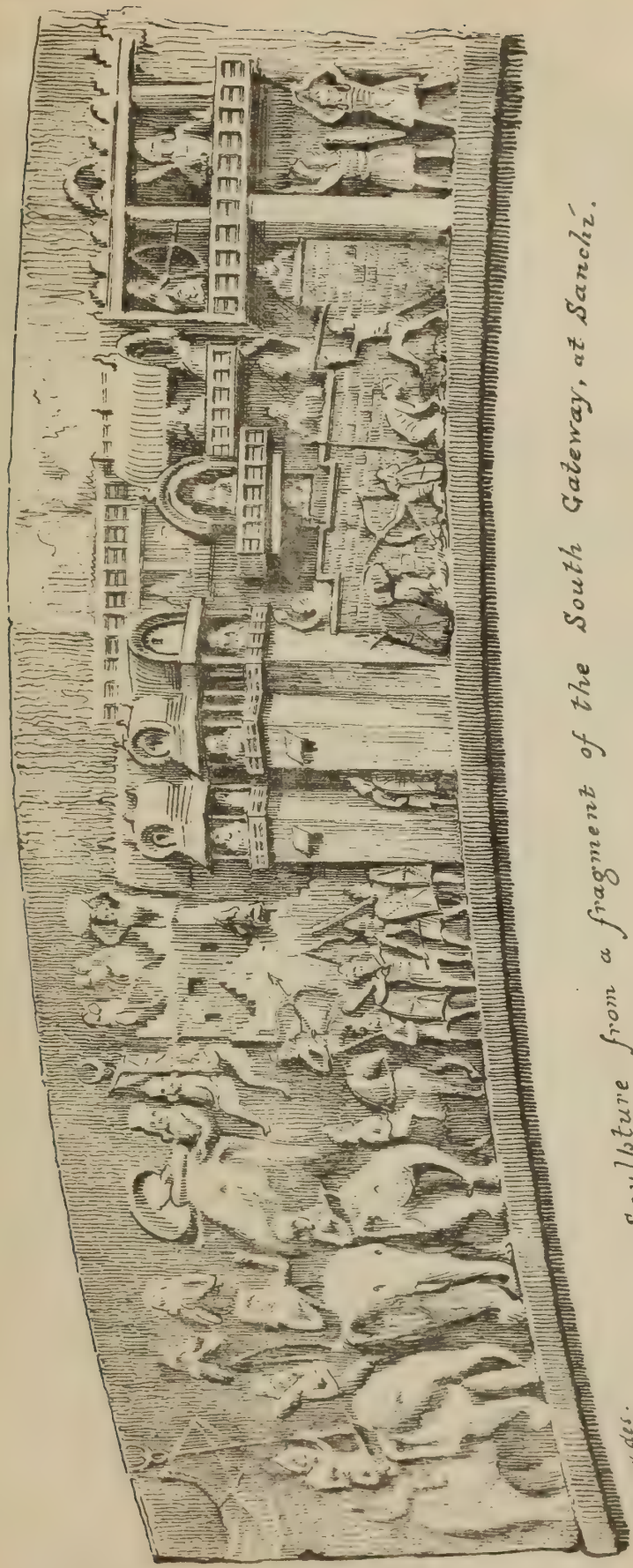
* Vide infra. † Journal Asiatic Society, vol. III. p. 117.



Eastern Gateway of the Sanchi Stupa. Bhilsa.



*W. Murray des.
J. Prinsep lith.*



Sculpture from a fragment of the South Gateway, at Sanchi.

*W. Murray des.
J. Prinsep lith.*

specimen selected by Captain MURRAY from one of the fallen gateways is more interesting from the costume of the warriors, which is perfectly Grecian. The banners also floating in the wind are extremely curious from the symbol occupying the place of the eagle on them, which the reader will instantly recognize as one of the monograms on the Buddhist series of coins, particularly on the two supposed by Colonel STACY to bear Greek inscriptions*. "These banners," Captain MURRAY writes, "are common, and the warriors bearing shields are in other places attendant upon chariots and horses in triumphal or religious processions."

An architect will admire the combination of elephants in the capital of the northern gate. "The teeth have been extracted or have dropped out, but in all other parts of the building they seem to have been carved in the block. Another capital is formed of a group of satyr's heads with long pointed ears and most ludicrous expressions of grief or merriment."

On a neighbouring hill are some very beautiful Jain temples in a totally different style of architecture. Of these also Captain MURRAY has favored the Society with a sketch, but it would be impossible to do it justice in lithography. It would be well worthy of the Asiatic Society to publish from time to time in England a volume of Hindu architectural remains from the materials in its possession. To this reference could be always made; and those who regarded only the works of art would find a volume to their taste, kept distinct (like the physical volume,) from the graver subjects of the Society's Researches.

The following is Captain SMITH's note accompanying the facsimiles of the *Sanchi* inscriptions, taken by him at the request of Mr. L. WILKINSON to whom I had written on the subject.

"All these inscriptions are found on the colonnade surrounding the building, and generally on the elliptical pieces connecting the square pillars. Though the inscriptions are numerous, I observed but three of any length, and of these two only from which I could hope to get off clear impressions; the third one was extremely obscure from the causes which render indistinct even those which I have copied. The cutting of most of the letters has originally been rough and irregular, and the surface of the stones appears from the first to have been but coarsely chiseled. Time has increased the irregularities of surface, and added to it an extremely hard moss, which overspreads the stones so completely as almost to conceal the letters from observation. I make this last remark, because I have little doubt

* Journal Asiatic Society vol. III. p. 117.

that a search among the fallen columns would detect many inscriptions besides those which my hurried visit allowed of my perceiving.

"There is a striking difference, which I should mention, in the execution of the inscriptions and of the sculpture with which the gateways are covered. The sculpture has all been designed and wrought with the greatest regularity and with uniform divisions into compartments; but the inscriptions are coarsely cut, and are found scattered without reference to the general design upon any stone that the workman's fancy seems to have led him to. So marked indeed is the inferiority of style in the inscriptions, that it is difficult to believe that they are the work of the same hands which produced the sculpture; and from their situation it is clear that they never formed part of the design of the gates or colonnade on which they are found. They have, on the contrary, more the appearance of being the rude additions of a period later in date than the erection of the building, and of one degenerated in taste and execution. Such are the appearances, but they may still be deceptive, for the inscriptions of the *Allahabad* column are by no means of the careful cutting that might be expected on a pillar so regularly tapered and nicely polished. The preceding remarks regarding the execution of the *Sanchi* inscriptions admit, however, of an exception, in that of the more perfect inscription No. 1; but though in this instance the cutting is clear and well arranged, the inscription itself still seems an irregular addition to the sculpture of the gate.

List of the Inscriptions.

"No. 1. Inscription from the front of the eastern gate. One copy on cloth two on paper.

At first this inscription appeared to me to be the same with that published in the 34th No. of the Journal of the Society, but I soon perceived that it was either altogether a different one, or that the engraved inscription had been copied from an incorrect impression.

No. 2. Inscription from the side of the eastern gate. One copy on cloth; two on paper.

No. 3. A line introduced on the border between two of the compartments of sculpture on the eastern gate.

Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, are from different parts of the colonnade, on which they are disposed without any regularity. They go to no greater length than a line or two; some are only of a few letters.

ED. SMITH."

Taking the facsimiles in the order in which they are numbered by Captain SMITH himself, I will first describe the principal inscription, which I have carefully lithographed in Plate XXV. It records a money contribution and a grant of land by an agent of the ruling

ॐ नमो भगवते वासुदेवाय ॥ १ ॥
 श्रीकृष्णार्जुनसंवादे अर्जुनस्य
 वचनम् ॥ १ ॥ दृष्ट्वा तु पाण्डु
 प्रवृत्तमात्मानं ॥ २ ॥ विषयं
 कुरुक्षेत्रे भक्ष्यं ॥ ३ ॥

5x + 2y = 51.

sovereign CHANDRAGUPTA, for the embellishment of the edifice (or perhaps for the erection of the ornamented gateway) and for the support of certain priests, and their descendants for ever.

The value of a facsimile in preference to a copy made by the eye was never more conspicuous than in the present instance. Turning to the engraving of Mr. HODGSON's copy in Vol. III. we find his artist has totally omitted all the left hand portion of the inscription which has been injured by the separation of a splinter in the stone ! The initial letter of each line, is, however, distinctly visible on the stone beyond this flaw ; and as not more than four or five letters in each line are thus destroyed, it is not very difficult to supply them, without endangering the sense. This has now been done by the Society's pandit ; and the only place at which he hesitated was in filling up the amount of the donation in the seventh line, which may have been hundreds or thousands or upwards, but could hardly have been units, in a display of regal beneficence. The following is the text as restored by RÁMA GOVINDA, line for line from a transcript made by myself in the modern character. I have endeavoured to add a literal translation.

Transcript of Sanchi Inscription No. 1, in modern Nágarí.

कु [लघ्मासि] महाविहारशीलसमाधिप्रज्ञागुणभावितेन्द्रियाय यरमपुण
 छ [ताश्रमान्तर] गाभ्यागताय श्रमणपुङ्गवावसथायार्थसंघाय महाराजाधि
 रा [जश्री] चन्द्रगुप्तपदप्रसादायायितजीवितसाधन अनुजीविसत्पुरुषसद्भाव
 वृद्धि [मनुदिनं] प्रख्यापयन् अनेकसमरावाप्तविजययशस्तकः आकुलिदर्शन
 षु [कारिजनचे] प्रत्यदण्डेन पुत्रोऽसुकादेवमजनादभङ्गासुकरातिः राजकुलसूतैः क्री
 तप [दप्रदे] शे इक्ष्वासकपञ्चमन्देया प्रणिपत्य ददाति पञ्चविंशतिश्च दीना
 रस [हसंशनपदं] यदर्थेन महाराजाधिराजश्रीचन्द्रगुप्तस्य दवराज इति प्रि
 याना [न्तरप्रजाप्री] तस्य सर्वगुणसम्पत्तय यावच्चन्द्रादित्यौ तावत् पञ्चभित्तवा भुज्ज
 तां रत्नगट [हंप्रदी] पकोज्ज्वलितं सम वा परार्द्धात् पञ्चैव भित्तवो भुज्जतां रत्नगटहप्र
 दीपकं [इतिप] दंतत् प्रहृतं य उच्छिन्द्यात्तुम ब्रह्महत्यया संयुक्ताभवत् पञ्चशस्त्रान
 न्त्यैरिति सं ⊕ ≡ भाद्रपद दिक् ।

५ १ ७ ८ ९ १० ११ १२ १३ १४ १५ १६ १७ १८ १९ २० २१ २२ २३ २४ २५ २६ २७ २८ २९ ३० ३१ ३२ ३३ ३४ ३५ ३६ ३७ ३८ ३९ ४० ४१ ४२ ४३ ४४ ४५ ४६ ४७ ४८ ४९ ५० ५१ ५२ ५३ ५४ ५५ ५६ ५७ ५८ ५९ ६० ६१ ६२ ६३ ६४ ६५ ६६ ६७ ६८ ६९ ७० ७१ ७२ ७३ ७४ ७५ ७६ ७७ ७८ ७९ ८० ८१ ८२ ८३ ८४ ८५ ८६ ८७ ८८ ८९ ९० ९१ ९२ ९३ ९४ ९५ ९६ ९७ ९८ ९९ १००

Translation.

“ To the all-respected Sramanas, the chief priests of the *avasath* ceremonial*, who by deep meditation have subdued their passions, the champions (sword) of the virtues of their tribe ;—

* *आवसथ*, a fire temple, or place where sacrificial fire is preserved (WILSON's Dictionary) ; ‘also a particular religious observance.’ The latter is preferable, as the fire-worship is unconnected with the Buddhist religion.

The son of AMUKA, the destroyer of his father's enemies*, the punisher of the oppressors of a desolated country, the winner of the glorious flag of victory in many battles, daily by his good counsel gaining the esteem of the worthy persons of the court, and obtaining the gratification of every desire of his life through the favor of the great emperor CHANDRAGUPTA ;—having made salutation to the eternal gods and goddesses, has given a piece of ground purchased at the legal rate ; also five temples, and twenty-five (thousand ?) dinárs ; (half of which has been spent for the said purchase of the said ground,) as an act of grace and benevolence of the great emperor CHANDRAGUPTA, generally known among his subjects as Deva rája (or Indra).

As long as the sun and moon (shall endure,) so long shall these five ascetics enjoy the jewel-adorned edifice, lighted with many lamps. For endless ages after me and my descendants may the said ascetics enjoy the precious building and the lamps. Whoso shall destroy the structure, his sin shall be as great, yea five times as great as that of the murderer of a brahman.—In the *Samvat* (or year of his reign ?) ३, (in the month of) *Bhádrapada*, the tenth (day.)”

There are two or three points in this document, if I have rightly interpreted it, of high interest to the Indian antiquarian.

1st. It teaches us that the current coin of the period was entitled *dínár*, which we know to be at the present day the Persian name of a gold coin, although it is evidently derived from the Roman *denarius*, which was itself of silver ; while the Persian *dirhem* (a silver coin) represents the *drachma*, or dram weight, of the Greeks. The word दीनार is otherwise derived in the Sanskrit dictionaries†, and it is used in books for ornaments and seals of gold, but the weight allowed it of thirty-two *ratis*, or sixty-four grains, agrees so closely with the Roman and Greek unit of sixty grains, that its identity cannot be doubted, especially when we have before us the actual gold coins of CHANDRAGUPTA (didrachmas) weighing from 120 to 130 grains, and indubitably copied from Greek originals in device as well as weight,

2nd. We have a positive date to this inscription—but how shall we read it? The day of the month is plain, “ *Bhádrapada dik*” in letters, the tenth (δεκα) of *Bhádrapada* (hod. Bhadoon.) It is in a form somewhat different from ordinary inscription dates, which, if founded on the luni-solar division of the year, necessarily allude to the light

* This epithet is doubtful : the pandit has supplied a letter क to make it intelligible शरभङ्गामु(क)रातिः

† दीन a pauper and क् to go—what is given to the poor ! WILSON'S Dictionary.

or the dark half of the lunation, *sudi* or *badi*. Further, in them the term *Bhādra* is generally employed for the name of the month, while *Bhādrapada* is usually applied to the *nacshatra* or lunar asterism: I cannot, however, insist on any inference hence, that this mode of reckoning was prevalent at the time of our inscription,) because the final *a* should be long, and the word *purva* or *uttara* should have been affixed to distinguish which mansion of the name was intended;) but only that the shorter term *Bhādra* had not come into use for the month. The year might be made the theme of still more prolific speculation. Taking the letter ञ for *Samvat*, we have a circle inclosing a cross and three horizontal dashes to the right, $\oplus \equiv$. This might be plausibly construed into 1000 and 3; or 403;—or one *chakra* of the *Jovian* or *Vrihaspati* cycle of 60 years plus 3 years; and arguments might be adduced in support of all these theories, with exception perhaps of the last; for by the Tibetan account the Jovian cycle was not introduced into India earlier than the 9th century. But I rather prefer what appears to me a more simple interpretation, viz. that ञ $\oplus$ stand for *Samvat*, and $\equiv$ for three quarters,—this being the practical mode of expressing quarters in Indian numeration. *Samvat* we find every day to be used in the oldest inscriptions for the year of reign,—and it is well known that the Hindus do not reckon a year until it is passed. Supposing then that CHANDRAGUPTA made this grant through his agent the son of AMUKA, in the first year of his reign, say in the tenth month, there would be no other way of expressing the date in the Hindu system than by saying “ $\frac{3}{4}$ year (being elapsed).” I offer this conjecture with diffidence, and invite the attention of orientalists to the curious point, with full assurance that there is no uncertainty in the reading of the facsimile, at this place.

The second inscription, which Captain SMITH states to be situated on the side of the same, or eastern, gate-post, has evidently been cut upon the stone after it was erected; as otherwise the precaution would have been taken of smoothening and polishing the surface for the better reception of the writing. It is, on the contrary, so slightly scratched that in the three facsimiles thus carefully taken, it is hardly possible in many places to distinguish between the letter marks and the natural roughnesses of the stone. The lithograph of it attempted in Plate XVI. was most impartially taken before any attempt had been made to read it, and on comparing it with the transcript in modern Nāgari, as subsequently modified and corrected, many instances will be perceived in which my eye has been induced

* Captain CUNNINGHAM suggests 475, the $\frac{3}{4}$ being applicable rather to the century.

to follow the wrong path among the net-work of scratches. Without the facsimiles themselves to pore over, it would have been impossible to have conquered the various difficulties presented by this rude inscription, and even with it the Society's pandit, RÁMA GOVINDA, deserves great praise for the plausible version he has enabled me to give of it: for I have recompared his modifications with the original, and find in almost every instance that they are borne out by the facsimile. It is unnecessary to re-lithograph the document, as all those who will take the trouble of comparing the two will see in what way my pen has deviated from the correct trace, and it will serve as a good test of the superiority of facsimiles to the best copies made under the sole guidance of the eye.

The following then is RÁMA GOVINDA's restoration of the text: like its precursor, it is in prose, and without any invocation: nor has it any deprecation against the hand that should annul the good act recorded; but this is explained by the trifling nature of the gift, which does not include any grant of land.

Second inscription at Sanchi, see Plate XXVI.

रुद्रस्तुच्छासनसिद्धभार्यायाः परमोपासिकहरिस्वामिन्या माता
पितरमुद्दिश्य काकुनादस्फोटश्रीमहाविहारे इज्यमानार्थसं
घायानुज्ञायये विपन्नादीनां मञ्जावासस्तथादीनारः भिक्षावृत्युच्छित्तये
रत्नप्रज्वलिततया दिवसे दिवसे सीमामध्यप्रदीपको भिक्षाग्रकरभिक्षवे
दापयितव्यः रत्नगृहेऽपि दीनारत्रयो दत्तः तद्दीनारत्रयस्य वृद्धा रत्नगृ
हचतुर्बुद्धस्य दिवसे दिवसे दीपत्रयं प्रज्वालयितव्यं चतुर्बुद्धास
नेऽपि दत्तः दीनारचक्रः तस्य वृद्धा चतुर्बुद्धासने तथा चतुर्बुद्धस्य
दिवसेदिवसे दोषाः प्रज्वालयितव्याः एवमेषां क्षयकृवि
अचिन्द्रार्कशीला लेख्यस्थायिन्यासन सिद्धभार्यायाः
परमोपासिक हरिस्वामिन्या प्रचित्रिता इति
संवत्।.....

Translation.

"I hereby make known to all the assembled devotees offering up prayers for the father and mother of HARISWÁMINÍ, the eminent disciple of the wife possessing the *ásan-siddh* or seat of purity, in the great and holy Vihára of *Kakunada sphota* (?), that for the prevention of begging in the public roads, an alms-house for the indigent, and

also one dinár, day by day, for charitable distribution*, and a lamp shining like a jewel in the middle of the enclosure, are caused to be provided†.

In the *ratnagriha*‡ also are deposited three dinárs. With the interest, of these three dinárs in the *ratnagriha* or treasury of the four Buddhas§ day by day three lamps are to be lighted. For the shrines of the four Buddhas also is given a *chakra*|| of dinárs, with the interest of which in the four shrines in like manner the lamps of the four Buddhas are to be kept lighted daily. And thus the beauty of all this (sculpture) durable as the sun and moon has been designed (or repaired) by HARISWÁMINÍ, the disciple of the unchangeable sculpture-enshrined *Siddha bháryyá* (or emancipated wife).

Samvat. . ? . . Sravan. . ? . . Aditya."

All we learn from this inscription is, that a female devotee, HARISWÁMINÍ the pupil of the defunct lady abbess, probably, of the convent to which she belonged, either designed or repaired some of the basso-relievos we so much admire in their fallen state ;—and we may thus account for the chasteness and elegance of the sculpture, while we do homage to the superior taste and imagination of the fairer sex. The provision for applying the interest of the small sums deposited by the same lady in the treasury of the Buddhist shrine to particular purposes, seems to imply that the establishment mixed in secular matters, and probably acted the part of bank to the surrounding district ; in fact, the priesthood then possessed all the knowledge, the power, and the activity of the country, and we have adduced probable evidence on other occasions of their exercising the privilege of fabricating coin.

* Literally, to be given to beggars seated within the enclosure holding their hands out but not importuning passengers, as is to this day customary within the precincts of the most frequented temples.

† The *ásan* here intended is probably the wooden carved platform on which religious devotees reside in temples—using them at once as pulpits and as beds. The expression *rudhasvacchásaná siddh-bharyyáyah* seems to imply a wife who had turned priestess, and who had died on her sacerdotal couch. *Siddhásan* is a seat so pious that the devotee sitting in it can, at will, be transported any where thereon. *Siddha bharyya* my also be a name.

‡ Jewel house, treasury, or perhaps the sanctum of the shrine.

§ There are four niches containing images of Buddha on the four sides of the *dehgopa*.

|| *Chakra* signifies a heap or quantity, but it would hardly thus be indefinitely used in such a place ; it may then also denote 60, the number of the *Vrihaspati chakra* or cycle, or 12 for that of the sun : it is impossible to decide between them.

The date at the foot of this inscription is even more unintelligible than that of No. 1—not from obliteration, for the lines cut on the stone are here quite distinct, but from our ignorance of the numerals then employed:—the two or three figures following the word *Samvat* bear no resemblance whatever either to the modern Hindî or to the Cashmerian numerals. The month also is very dubious, and the letters that follow it may also be numerals—it is barely possible to read them as *aditya* (the sun) which on the system explained in Vol. IV. page 1, may stand for 12—or it may denote the day, Sunday. We are thus once more foiled in detecting the precise date of a record which it would have been of the greatest service to fix: and we must remain satisfied with the assurance that it was posterior to the erection of the gate in the reign of CHANDRAGUPTA.

And now for inscriptions 3 to 25 of Captain SMITH's catalogue;—the detached fragments cut irregularly on the pillars or rail surrounding the edifice, in the hitherto undeciphered character. I have introduced the whole of them into Plate XXVII. exactly as I find them in the facsimiles, except as to size, which in the original varies from one inch to two or three in the height of the letters. There is also great variety in the style of the engraving, and a regular progression in the form of the letters from the simple outline to the more embellished type of the second alphabet of *Allahabad*; (see No. 16). A more rigid search would doubtless have multiplied Captain SMITH's specimens, but this would have been labour thrown away; for however valuable these scraps may have been in unlocking the stores of knowledge contained in more important documents, they are individually of very trifling importance.

In laying open a discovery of this nature, some little explanation is generally expected of the means by which it has been attained. Like most other inventions, when once found it appears extremely simple; and, as in most others, accident, rather than study, has had the merit of solving the enigma which has so long baffled the learned.

While arranging and lithographing the numerous scraps of facsimiles, for Plate XXVII. I was struck at their all terminating with the same two letters, $\overline{\text{h}} \perp^{\circ}$. Coupling this circumstance with their extreme brevity and insulated position, which proved that they could not be fragments of a continuous text, it immediately occurred that they must record either obituary notices, or more probably the offerings and presents of votaries, as is known to be the present custom in

Inscriptions from Sanchee.
taken in facsimile on paper by Capt. R. Smith. 1851

1. 11 12 13 14 15 16 17 18 19 20 21

4. 12 13 14 15 16 17 18 19 20 21
5. 12 13 14 15 16 17 18 19 20 21
6. 12 13 14 15 16 17 18 19 20 21
7. 12 13 14 15 16 17 18 19 20 21
8. 12 13 14 15 16 17 18 19 20 21
9. 12 13 14 15 16 17 18 19 20 21
10. 12 13 14 15 16 17 18 19 20 21
11. 12 13 14 15 16 17 18 19 20 21
12. 12 13 14 15 16 17 18 19 20 21
13. 12 13 14 15 16 17 18 19 20 21
14. 12 13 14 15 16 17 18 19 20 21
15. 12 13 14 15 16 17 18 19 20 21
16. 12 13 14 15 16 17 18 19 20 21
17. 12 13 14 15 16 17 18 19 20 21
18. 12 13 14 15 16 17 18 19 20 21
19. 12 13 14 15 16 17 18 19 20 21
20. 12 13 14 15 16 17 18 19 20 21
21. 12 13 14 15 16 17 18 19 20 21
22. 12 13 14 15 16 17 18 19 20 21
23. 12 13 14 15 16 17 18 19 20 21
24. 12 13 14 15 16 17 18 19 20 21
25. 12 13 14 15 16 17 18 19 20 21

the same on
 Nos 19 and 25

the Buddhist temples of *Ava*; where numerous *dwajas* or flag-staffs, images, and small *chaityas* are crowded within the enclosure, surrounding the chief cupola, each bearing the name of the donor. The next point noted was the frequent occurrence of the letter ढ, already set down incontestably as *s*, before the final word:—now this I had learnt from the *Saurashtra* coins, deciphered only a day or two before, to be one sign of the genitive case singular, being the *ssa* of the Páli, or *sya* of the Sanscrit. “Of so and so the gift,” must then be the form of each brief sentence; and the vowel *í* and *anuswara* led to the speedy recognition of the word *dánam*, (gift,) teaching me the very two letters, *d* and *n*, most different from known forms, and which had foiled me most in my former attempts. Since 1834 also my acquaintance with ancient alphabets had become so familiar that most of the remaining letters in the present examples could be named at once on re-inspection. In the course of a few minutes I thus became possessed of the whole alphabet, which I tested by applying it to the inscription on the *Delhi* column: but I will postpone my analysis of the alphabet until I have prepared a fount of type for it, when I may bring forward my attempted reading of the *lút* inscriptions; meanwhile, the following transcript in Roman letters of the *Sanchí* gifts will shew the data on which I have built my scheme, and will supply examples of most of the letters.

No. 3, the first in numerical order, is not one of the most legible, the first two letters being indistinct. It seems to run thus:

Rarasa (or *Karasa*) *nága piyasa, Achavade Sethisa dánam*; ‘The gift of *ACHVADÁ SETHÍ*, the beloved of *KARASA NÁGA*.’

No. 4 and No. 11 are identical:—

Sámanèrasa Abeyakasa Sethinon dánam; ‘The gift of *SÁMANE’RA* and *ABEYAKA SE’TH*.’

Sámanèra is the title of a subordinate order of the Buddhist priesthood. *Seth* is evidently a family name; and the same is now of common occurrence among the Jains—witness *JAGAT SE’TH*, the millionaire of *Moorshedabad*.

No. 5. *Dhamágálikasa máta dánam*; ‘The gift of the mother of (?) *DHARMAGARIKA*.’

In No. 6 the first letter is doubtful:—

Gobavanágahapati nopati dhiyanusaya vesa mandataya dánam; ‘The gift of the cowherd *AGRAPATI*, commonly called *NOPATI*, to the highly ornamented (*chaitya*?).’

No. 7 is also doubtful in the three first letters:—

Subhageyamsa aginikeya dánam; ‘The gift of *SOBHAGEYA* the fireman, (or black-smith).’

Here we learn what is amply confirmed by other examples, that the double consonants of the Sanscrit orthography are replaced by separate consonants, each having the required vowel ; e. g. *agini* for *agni*.

No. 8 is of a more complex character :—

Siharakhitasa paravatiyasa rudovāya dānam ; ‘ The gift of SRI’ (or SINHA) RAKHITA, the hillman, to RUDOVA. ?’

No. 9 partially agrees with No. 6 :—

Gobavanā gahapati nopatidhīyasa dānam ; ‘ The gift of AGRAPATI and NOPATI, the cowherds, so called. ?’

No. 10 is of the simplest construction :—

Vajajasa gāmasa dānam ; ‘ The gift of VAJJA, or probably VRIJA GRĀMA,’ the population of a village in the province of *Vrija*, combining to make their offering.

No. 12. *Nadigatasa dānam bhichkhuno*.

Here the caste, *bhichhuno*, the beggar (*bhikshu*) seems to have been added after the record, to distinguish the party, a ferryman, *nadigata*. ?

No. 13. *Arahagatāya dānam* ; ‘ The gift of ARAHAGATĀ :’ this is also a well-known title of the Buddhist hierarchy, *arhata*, or *arhanta* ; and admitted, as in the instance before us, female devotees as well as male.

No. 14. *Chiratīyā bhichhunīya dānam* ; ‘ The gift of CHIRATI’, the poor woman.’

No. 15. *Kādasa bhichhuno dānam* ; ‘ The gift of KĀDA, the poor man.’

No. 16 is in a different hand, more finished, and resembling the No. 2 of *Allahabad* : it has also a more studied elegance of expression : *Isipālīta-cha, Sāmanasa-cha dānam* ; ‘ The gift both of ISIPĀLIT, (the protected of God,) and of SĀMANA (the priest).’

No. 17 partakes rather of the form of an obituary notice :—

Sethino mata kaniyā ; ‘ The Sethin’s deceased daughter !’

No. 18. *Kākēnoye bhagavato pamāne rathi* ; ‘ in testimony of God’. . (the rest unintelligible). For *kākēnoye* see note on insc. No. 1.

No. 20. *Araha dinasa bhikhuno pakharayakasa dānam* ; ‘ The gift of the poor priest PAKHARAYAKA. ?’

No. 22. *Rudu barayarayasa pidarakhitasa dānam*.

The names here are nearly illegible from the rudeness of the sculpture. The first may be *Rudra bharyya* the wife of *Rudra*.

No. 23. *Panthakasa bhichkhuno ruganarātupa*. *Budhapālīta bhichkhuno dānam* ; ‘ The gift of PANTHAK, the poor man. . . . and of BUDDHAPĀLIT, the poor man.’

No. 25 is in very large characters :—

Vajāgato dānam ; ‘ The gift of VRIJĀGĀN,’ of which the genitive termination will, by the *Pālī* rules, be made by changing *ān* into *ato*.

No. 21 has been reserved for the last, because it contains a second inscription in modern character :—the old writing is

Kékateyakasa dhama sivasā dānam ; ‘The gift of KEKATEYAK DHARMA-SIVA.’

Under this in the modern Deva-nāgarī,

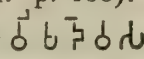
रा श्रीसाव देव प्रणमतिनित्यं *Rā Śrī Sāo Dēva pranamati nityam.*

‘*Rā* (for Rāja or Rāo?) Śrī SAO DEVA for ever makes reverential salutation.’

The same formula occurs on two other stones, and the form of the letters would indicate that it has been introduced at a late period by some rich traveller on his pilgrimage,—and, moreover, a merchant, by his epithet *Soā*.

There is still one more short line in the old character, at the foot of the Sanscrit inscription No. 1, of some importance from its position, as it must evidently have been inserted after the latter, which Captain SMITH assures us is the only formal well-executed inscription likely to have been coeval with the structure of the edifice, or at least of the stone gateway. The party who chose this conspicuous place for cutting his name, did so, doubtless, from an ostentation, for which he paid high! He rejoiced in the name of DATTA KALAVADA, the line reading, *Datta Kalavaḍasa dānam* ; which may perhaps be interpreted *Dattakaravaḍasya dānam*, ‘the gift of DATTAKARAVADA,’ (the principal giver, of revenue.?)

§ 2. Application of the alphabet to the Buddhist group of coins.

Having once become possessed of the master-key of this ancient alphabet, I naturally hastened to apply it to all the other doors of knowledge hitherto closed to our access. Foremost among these was the series of coins conjecturally, and, as it now turns out, correctly designated as the Buddhist series; and of these the beautiful coin discovered by Lieutenant A. CONOLLY at *Canouj*, attracted the earliest notice from the very perfect execution and preservation of the legend; (see Plate XXV. Vol. III. p. 433). The reading of this coin was now evident at first sight, as  *Vippa dēvasa* ; which converted into its Sanscrit equivalent will be विप्रदेवस्य *Vipra devasya*, the coin of VIPRA DEVA. On reference to the Chronological Tables, we find a *Vipra* in the *Magadha* line, the tenth in descent from JARA-SANDHA, allotted to the eleventh century before the Christian era! Without laying claim to any such antiquity we may at least bespeak our *Vipra deva* a place in the *Indu vansa* line of *Magadha*, and a descent from the individual of the same name in the *Pauranic* lists.

‘of *rāja Dhana deva*,’ a name not discoverable in the catalogues, though purely Sanscrit. On three more of the same family we find $\perp \delta \cup$ *Navasa*. On one it seems rather $\perp \cup \cup$ *Narasa*, both *nava* and *nara* being known names. On another $\perp \cup \cup$ *Kunamasa*; and on another, probably, $\cup \cup \cup$ *Mahápati*, the great lord.

The bull coins of this last group are connected in type, and style of legend, with the “cock and bull series”—on which we have lately read, *Satya mitasa*, *Saya mitasa*, and *Bijaya mitasa*; so that we have now a tolerably numerous descending series of coins to be classed together from the circumstance of their symbols, of their genitive termination, and their Páli dialect and character, as a Buddhist series, when we come again to review what has been done within the last few years in the numismatology of India.

But the most interesting and striking application of the alphabets to coins is certainly that, which has been already made (in anticipation, as it were, of my discovery) by Professor LASSEN, of Bonn, to the very curious Bactrian coins of AGATHOCLES.

The first announcement of Professor LASSEN’s reading of this legend was given in the Journal for 1836, page 723. He had adopted it on the analogies of the Tibetan and Páli alphabets, both of which are connected with, or immediately derived from, the more ancient character of the láts. The word read by him, *rāja*, on some specimens seems to be spelled *yāja* $\cup \xi$ rather than $\cup \xi$ *lāja*, a corruption equally probable, and accordant with the Páli dialect in which the *r* is frequently changed into *y*, or omitted altogether. I am, however, inclined to adopt another reading, by supposing the Greek genitive case to have been rendered as literally as possible into the Páli character; thus $\cup \cup \cup \cup \cup \xi$ *Agathuklayej* for *Αγαθοκλεως*; this has the advantage of leaving the letters on the other side of the device for the title of *rāja* of which indeed the letter ξ is legible.

I am the rather favorable to this view because on the corresponding coin of PANTALEON, we likewise find both the second vowel of the Greek represented by the Sanscrit semivowel, and the genitive case imitated:—supplying the only letter wanting on Dr SWINEY’s coin, the initial *p*, of which there are traces in MASSON’s drawing, the word

$\cup \cup \cup \cup \cup \bar{\cup}$ *Pantelewantá* is by the help of our alphabet clearly made out—the *anuswara*, which should follow the $\cup$ being placed in the belly of the letter instead of outside; and the *á* being attached to the centre instead of the top of the $\bar{\cup}$, where for the sake of uniformity I am obliged to place it in type.

The discovery of these two coins with *Pāli* characters, is of inestimable importance in confirming the antiquity of the alphabet; as from the style of AGATHOCLES' coins he must necessarily be placed among the earliest of the Bactrians, that is, at the very period embraced by the reign of ASOKA the Buddhist monarch of *Magadha*.

On the other hand the legend throws light on the locality of Agathocles' rule, which instead of being, as assigned by M. RAOUL DE ROCHETTE, in *Haute Asie*, must be brought down to the confines, at least, of India Proper.

As however the opinions of this eminent classical antiquary are entitled to the highest consideration, I take this opportunity of making known to my readers the substance of his learned elucidation of this obscure portion of history given in a note on two silver coins of AGATHOCLES, belonging to the cabinet of a rich amateur at *Petersburg*, published in the *Journal des Savans*, 1834, p. 335.

"In the imperfect accounts transmitted to us of the troubles occasioned to the Seleucidan kingdom from the invasion of PROLEMY PHILADELPHUS, and of the loss of entire provinces after the reverses of ANTIOCHUS II. *Theos*, the foundation of the Arsacidan kingdom by the defection of the brothers ARSACES and TIRIDATES is an established point, fixed to the year 256 B. C. But the details of this event, borrowed from ARRIAN'S "*Parthics*," have not yet been determined with sufficient care, as to one important fact in the Bactrian history. From the extracts of various works preserved in PHOTIUS, the defection of the Parthians arose from an insult offered to the person of one of these brothers by the Macedonian chief placed by ANTIOCHUS II. in charge of the regions of *High Asia* and named *Phérécès*. The two princes indignant at such an outrage are supposed to have revenged themselves with the blood of the satrap, and, supported by the people, to have succeeded in shaking off the Macedonian yoke.

This short notice from PHOTIUS has been corrupted by transcribers in the name of the chief *Pérécès*, which modern critics have failed to correct by a passage in the *Chronographia* of SYNCELLUS, who had equally under his eyes the original of ARRIAN and who declares expressly that "ARSACES and TIRIDATES, brothers, issue of the ancient king of Persia, ARTAXERXES, exercised the authority of satraps in *Bactria* at the time when AGATHOCLES the Macedonian was governor of *Persia*; the which AGATHOCLES, having attempted to commit on the person of the young TIRIDATES the assault before alluded to, fell a victim to the vengeance of the brothers, whence resulted the defection of the country of the Parthians and the birth of the Arsacidan kingdom." AGATHOCLES

is called by SYNCELLUS, Ἐπαρχος τῆς Περσικῆς, while PHOTIUS calls him (under an erroneous name) Σατράπην αὐτῆς τῆς χώρας καταστάντα, appointed by ANTIOCHUS THEOS; so that no doubt whatever could exist as to their identity, although until the discovery of the coins, there was no third evidence whence the learned could decide between the two names. The presumption might have been in favor of AGATHOCLES, because among the body-guard of ALEXANDER was found an ANTLOCUS, son of AGATHOCLES, who by the prevailing custom of his country would have named his son AGATHOCLES, after his own father."

M. RAOUL DE ROCHETTE proceeds to identify this eparch of *Persia* with DIODOTUS or THEODOTUS the founder of the Bactrian independency. Supposing him to have seized the opportunity of striking the blow during the confusion of ANTIOCHUS' war with PTOLEMY, and while he was on deputation to the distant provinces of the *Oxus*,—that he was at first chary of placing his own head on his coin, contenting himself with a portrait of BACCHUS,—and his panther on the reverse:—but afterwards emboldened to adopt the full insignia of royalty. Thus according to our author a singular shift of authorities took place—ARSACES the satrap of *Parthia* quits that place and sets up for himself in *Persia*, in consequence of the aggression of DIODOTUS (or AGATHOCLES) king of *Bactria* who had originally been eparch of *Persia*:—both *satraps* becoming *kings* by this curious bouleversement. The non-discovery of THEODOTUS' medals is certainly in favor of M. RAOUL DE ROCHETTE's argument, but the present fact of a Hindî legend on his coin militates strongly against his kingdom being thrown *exclusively* to the northward. By allowing it to include *Parthia* Proper, or *Seistan*, and the provinces of the *Indus*, this difficulty would be got rid of; but still there will remain the anomaly of these Indian legends being found only on AGATHOCLES and PANTALEON's coins, while those of MENANDER, who is known to have possessed more of India Proper, have only the Pehlevi reverse. AGATHOCLES' rule must have included a sect of Buddhists *somewhere*, for besides the letters we find their peculiar symbol present on many of the panther coins. At any rate we have certainty of the existence of our alphabet in the third century before Christ, exactly as it exists on our Indian monuments, which is all that on the present occasion it is relevant to insist on.

§ 3. *Application of the alphabet to other inscriptions, particularly those of the láts of Upper India.*

Another convenient test by which the newly found alphabet can be proved was the Rev. Mr. STEVENSON's facsimile of the *Carlí* inscriptions published in the 3rd volume of the *Journal*, p. 428. I

ገፅ ፩ ስም መለሰ ይጋይዝ

Many of the repetitions of this initial sentence abound in trifling errors, especially in the vowel marks, and in the letters of nearly similar form, as *p* and *h*. These it is not worth while to notice, except as a caution against too implicitly following the text in other places, where such slight alterations will restore intelligibility. But RATNA PAULA the Páli scholar, whom I immediately invited to assist me in reading the inscription, could critically take objections to other inaccuracies which were repeated in every instance of the pillar text. Thus the double *s* was wanting in *dasi*; the nominative *lāja* should be written *rājā*; *hevam, evam*; and *ahā, āha*. Satisfied that these were but the licenses of a loose vernacular orthography, as particularly evinced by the interchange of the liquids *l* and *r*, I was little abashed in finding the same errors on the *Bakra* and *Betiah* láts, and even on the *Cuttack* cave inscription:—and it was with a degree of surprise and joy proportionate to the absence of expectation, that on looking over the *Girnar* version, I found all three of the grammatical errors removed! The *Girnar* text is thus conceived:

of my reign.' The anomalous form of the second letter perplexed me for some time, and it was only after collation with other readings of the same passage that I became persuaded of its being a double *ḍ*. Thus I found sometimes ḍ ḍ or *saḍa*, and once ḍ ḷ *sata*, but generally ḍ ḍ, the lower stroke seeming to imply duplication. That the *ḍ* should be substituted for *tt* agreed with the observation by Messrs. BURNOUR and LASSEN of the frequent interchange of these letters in their analysis of a *Pálí* manuscript, the *Boromat*, from *Ceylon*. I have also found in other parts of the inscription that the double dental *t* is as frequently rendered by the cerebral *ṭ* (*ṭ*), as by *ḍ* ḍ.

That we are not mistaken in the interpretation of this passage we have the most satisfactory proof in the commencement of the eastern tablet, which perhaps ought to rank first, as it speaks of an earlier date. The expression here is ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ *Duwáḍasa vasa abhisitena mē*; 'In the *twelfth* year of my reign.' It may be perhaps objected that *duwáḍasa* is a very corrupt mode of writing *dwáḍasa*, 'twelve:' the separation into two syllables of *dwá*, and the substitution of the cerebral *ḍ* being too great a latitude to sanction unexplained. Here again, fortunately, other manuscripts come to our aid. In the *Cuttack* inscription just received from Lieutenant KIRTOE we find the dental *d* restored; and the undue collision of the two short *a*'s grammatically corrected, thus:

ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ *duwáḍasa vasábhisitenamē**,

leaving the first error still uncorrected; but this again disappears when we turn to the *Girnar* version, which seems generally to have been executed with greater orthographical propriety. It is there, (38th line)—

ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ ḍ

Dwáḍasavásábhisitena devánam daya piya thisa.

This is on other accounts a most important variation, because it shews the value of the abbreviated pronoun *mē* (*mama*) 'of me,' to have been correctly rendered. The pronoun would in the present instance be superfluous, because it is replaced by the name of the *rāja*; which has also two remarkable deviations from the common spelling—*daya* for *piya* may be a fault in transcription, but it is also translatable. The substitution of *thisa* for *dasi*, a change not so easily explained, leads us to an inquiry who this potentate could have been, to spread his edicts thus over the continent of India?

* The facsimile has *ábhísátenamē*,—a mistake, probably, in copying.

In all the Hindu genealogical tables with which I am acquainted, no prince can be discovered possessing this very remarkable name. If there ever reigned such a monarch in India, his memory must have been swept away with every other record of the Buddhist dynasties we know to have ruled in India unrecorded by fame: but if any explanation can be afforded short of supposing such an entire obliteration, and if it can be supported, moreover, by collateral facts, we are bound to give it a preference rather than make darkness more obscure by multiplying imaginary existences.

Such explanation can be satisfactorily supplied from the annals of a neighbouring country, and this is the third occasion in which we have been indebted to them for the elucidation of obscure occurrences in India Proper. In Mr. TURNOUR's epitome of Ceylonese History, then, we are presented once, and once only, with the name of a king, *Devenipeatissa*, as nearly identical with ours as possible, (especially the last reading of the name,) and bearing, as RATNA PAULA informs me, precisely the same derivation.

DEVENI PEATISSA succeeded his father on the throne of *Ceylon* in the year of Buddha 236, or B. C. 307. One of his first acts is thus related by Mr. TURNOUR:—

“He induced DHARMÁSOKÁ, a sovereign of the many kingdoms into which *Dambadiva* (*Jambudwipa*, or India), was divided, and whose capital was *Pattilipatta*, (*Patna*) to depute his son MIHINDU' and his daughter SANGAMITTÁ, with several other principal priests, to *Anúrádhapúra* for the purpose of introducing the religion of BUDDHA. They arrived in the year 237, the first of this reign and eighteenth of that of DHARMÁSOKÁ. They established Buddhism, propagating its doctrines orally. The *bo*-tree was brought and planted at *Anúrádhapúra* on the spot where the sacred trees of former BUDDHAS has stood. The right jaw-bone of BUDDHA was obtained from SAKRAYA himself, and a cup full of other relics from DHARMÁSOKÁ. The king built the *vihare* and *dágoba* called *Toohpaaraamaya*, in which the jaw relic was deposited; sixty-eight rock temples with thirty-two priest's chambers on *Mihintallai*; the *Mahá vihare*, the *Issaramúni vihare*, the *Saita chaitya dágoba*, and the *Issa-ramaya dágoba* and *vihare*; and formed the *Issa vèva* tank. ANULÁ, the principal queen, and many inferior wives of the king, assumed priesthood*.”

The age of the great ASOKÁ, the third or fourth in descent from CHANDRAGUPTA, is one of the well known epochs of the promulgation of the Buddhist faith. It was also the most flourishing period of the Ceylonese sovereignty then enriched by a commerce which has in subsequent ages gradually passed into other channels. The monu-

* TURNOUR's Epitome of Ceylonese History, Ceylon Almanac, 1833.

The contents of the *dharmalipi* itself I must reserve for further examination with the aid of those who are more competent to analyze the peculiarities of its phraseology. From the cursory view I have taken of it with RATNA PAULA, I may in some measure meet the curiosity of the reader's inquiries, by stating that it treats of the fruits of virtue and vice—that it points out what animals are to be cherished and what are not proper for food—what days, of the lunar month, are to be esteemed holy, &c.; with much about the increase of virtue, but no mention of the name of BUDDHA, SHAKYA, or GAUTAMA—nor of any member of the Hindu Pantheon. It is, however, quite impossible to say as yet what are the contents of this genuine relic of antiquity,—perchance a much more genuine relic of the Indian reformer than any of the bones, teeth or hair of this sacred personage that have been preserved in golden caskets or buried under stone pyramids in various spots! But its chief recommendation is the philological value it possesses, of higher authority even than all the books of *Nípál* or *Ceylon*, in determining the knotty dispute as to the language in which the reformed religion of SHAKYA was preached and spread so effectually among the people. It is now evident that, as with the *Kabirpanthis*, the *Dadupanthis*, the *Sikhs*, the *Rámsanèhis*, and all the sects who have appealed to the common sense of the people against the learning and priestcraft of the schools, the language of the appeal employed by the disciples of SHÁKYA was the vernacular idiom of the day.

A few words, in conclusion regarding the alphabet, of which I have had a fount prepared while this article was setting up for press.

There is a primitive simplicity in the form of every letter, which stamps it at once as the original type whereon the more complicated structure of the Sanskrit has been founded. If carefully analyzed, each member of the alphabet will be found to contain the element of the corresponding member, not only of the Deva-nágari, but of the Canouj, the Páli, the Tibetan, the Hala Canara, and of all the derivatives from the Sanskrit stock.

But this not all: simplification may be carried much farther by due attention to the structure of the alphabet, as it existed even at this early stage, and the genius of its construction, *ab initio*, may in some measure be recognized and appreciated.

First, the aspirated letters appear to have been formed in most cases by doubling the simple characters; thus, ᳵ *chh* is the double of ᳚ *ch*; ᳶ *th*, is the double of ᳚ *t*; ᳷ *dh*, is the half of this; and ᳸ *th*, is the same character with a dot as a distinguishing mark: (this may account for the constant interchange of the ᳚ , ᳷ , ᳶ , and ᳸ , in

the inscriptions.) Again; ८ *dh*, is only the letter ३ produced from below—if doubled it would have been confounded with another letter, (the ८.) The aspirated *p* ७, is merely the ७ *p*, with a slight mark, sometimes put on the outside either right or left, but I cannot yet affirm that this mark may not merely denote a duplication of the letter rather than an aspiration—if indeed the terms were not originally equivalent; for we have just seen the *doubling* of the letter made to denote its *aspiration*.

The *kh* seems formed from the *g* rather than the *k*:—the *gh* and *jh* are missing as in Tibetan, and appear to be supplied by *g* and *chh* respectively. *bh* is anomalous, or it has been formed from the ५ by adding a downward stroke.

Again; there is a remarkable analogy of form in the semivowels *r*, *r*, ७, *y*, ७, ७, ७, which tends to prove their having been framed on a consistent principle:—the first *r* hardly ever occurs in the *Delhi* inscription, but it is common in that from *Girnar*. The *h* ७, is but the ७ reversed: the *ri* so peculiar to the Sanskrit alphabet is formed by adding the vowel *i* to the *r* thus, ३.

As far as is yet known, there are only one *n**, and one *s*: the nasals and sibilants had not therefore been yet separated into classes; for the written *Páli* of 200 years later possesses at least the various *n*'s, though it has but one *s*.

The four vowels, initials, have been discovered ॡ, ॢ, ॣ, ।; *a*, *i*, *e*, *u*. The second seems to be the skeleton of the third, as if denoting the smallest possible vocal sound. Of the medial vowels it is needless to speak, as their agreement in system with the old *Nágarí* was long since pointed out. The two long vowels *i* and *ú*, are produced by doubling the short symbols. The *visarga* is of doubtful occurrence, but the *anuswara* is constantly employed; and when before *m*, as in ॣ, *dhamma*, it is equivalent to the duplication employed in the more modern *Páli* writing. The following, then, is our alphabet, arranged in the ordinary manner.

<i>Gutturals.</i>	ॡ ॢ ॣ । .	<i>k kh g gh ng</i>	क ख ग घ ङ
<i>Palatials.</i>	॥ ० १ २ .	<i>ch chh j jh ny</i>	च छ ज झ ञ
<i>Cerebrals.</i>	ॢ ॣ । ॥ .	<i>t th d dh n</i>	ट ठ ड ढ ण
<i>Dentals.</i>	ॡ ॢ ॣ । ॥	<i>t th d dh n</i>	त थ द ध न
<i>Labials.</i>	ॢ ॣ । ॥ १	<i>p ph b bh m</i>	प फ ब भ म
<i>Semivowels, &c.</i>	ॢ ॣ । ॥ १ २ ३ ४ ५ ६ ७ ८ ९	<i>y r l v s h</i>	य र ल व स ह
<i>Vowels.</i>	ॡ ॢ ॣ । ॥	<i>a i e u ri</i>	अ इ ए उ ऋ

* I think the *Girnar* and *Ceylon* inscriptions will be found to have the other nasals made by modification of the primary ॣ. There are other letters in these texts not found in the *lāts* of this side of India.

We might perhaps on contemplation of these forms go yet farther into speculation on their origin. Thus the *g* may be supposed to be formed of the two strokes of the *k*, differently disposed: the *j*, of the two half curves of the *ch* superposed: the two *d*'s* are the same letter turned right and left respectively; and this principle, it may be remarked, is to be met with in other scions of the Indian alphabet. Thus in the Tibetan the *z* ཨ, a sound unknown to the Sanskrit, is made by inverting the *j* ཇ; the cerebral *n* ན, by inverting the dental *ñ* ལ:—and the cerebral *t*, *th*, or ར, ལ, by inversion of the dental *t*, *th*, ས, ཨ.

The analogy between the *ç* and *λ* is not so great in this alphabet as in what we have imagined to be its successor, in which the essential part of the *t*, (𑖳) is the *ç* placed downwards, 𑖳. In the same manner the connection of the labials, *p* and *b*, is more visible in the old Ceylonese, the Canoujî, and even the Tibetan alphabets; the *b* བ, being merely the *p* ཕ, closed at the top: and in square Pálí 𑖦 and 𑖧.

Thus when we come to examine the matter critically, we are insensibly led to the reduction of the written characters to a comparatively small number of elements, as 𑖳, 𑖴, 𑖵, 𑖶, 𑖷, 𑖸, 𑖹, 𑖺, 𑖻 and 𑖼; besides the vowels 𑖽, 𑖾, 𑖿. Or perhaps, in lieu of this arrangement, it may be preferable to adopt one element as representative of each of the seven classes of letters. We shall thus come to the very position long ago advanced by JAMBULUS the traveller.

JAMBULUS was antecedent, says Dr. VINCENT, to DIODÔRUS; and DIODÔRUS was contemporary with AUGUSTUS. He made, or pretended to have made, a voyage to *Ceylon*, and to have lived there seven years. Nine facts mentioned by him as characteristic of the people of that country, though doubted much in former days, have been confirmed by later experience: a tenth fact the learned author of the *Periplus* was obliged to leave for future inquiry,—namely, “whether the particulars of the alphabet of *Ceylon* may not have some *allusion to truth*: for he says, ‘the characters are originally only seven, but by four varying forms or combinations they become twenty-eight†.’ ”

It would be difficult to describe the conditions of the Indian alphabetical system more accurately than JAMBULUS has done in this short summary, which proves to be not only true in the general sense, of the classification of the letters, but exact as to the origin and forma-

* It is worth observation that the dental *d* of the inscriptions corresponds in form to the modern cerebral, and vice versâ.

† VINCENT'S *Periplus* of the Erythrean Sea.

tion of the symbols. As regards the discussion of the edict of DEVĀ-NAMPIYATISSA, the testimony of JAMBULUS is invaluable, because it proves that written characters,—our written characters, were then in use, (notwithstanding the Buddhist *books* were not made up till two centuries later :) and it establishes the credit of a much vituperated individual, who has been so lightly spoken of, that WILFORD endeavours to identify him with Sindbad the sailor and other equally marvellous travellers !

III.—*Notice of a Colossal Alto-Relievo, known by the name of Mata Kooñr, situated near Kussia Tannah, in Pergunnah Sidowa, Eastern Division of Gorakhpur District. By D. LISTON, Esq.*

Should a traveller happen to encamp at *Kussia*, a village situated about five kos from the *Chapra* boundary in the *Gorakhpur* district and on the road joining the two stations, it may so happen that his eye may alight on a pyramidal-looking mound of bricks about half a mile S. W. of the *serai*, over which spreads a magnificent banyan tree. Should he be of an inquisitive turn, his natural inquiries will be, what is it, and who has the fame of being its builder ? He will be informed that it once belonged to *Mata Kooñr** ; a somewhat less ruined brick pyramid with other brick mounds, about three-quarters of a mile to the west of the object that first caught his observation, will probably be pointed out as *Mata Kooñr's* fort ; and if it should be observed that our traveller's curiosity is thus excited, he will be told that *Mata Kooñr* himself lies petrified at but a short distance from his former place of abode. A walk of about a couple of furlongs from the ruins, called the fort, will bring our traveller to the side of a colossal *alto-relievo* of very respectable execution, surrounded by much carved work, many of the figures of which are well designed and cut, though others of them are of an exaggerated and outré character ; but the features of almost all the images, as well as those of the principal idol, he will find have been destroyed with an unsparing hand, and with a care worthy of a better object.

Not only have the countenances of the figures been defaced, but an inscription, of which I send you the remaining lines as correctly as I can copy them, seems at the same time to have been erased, or ground out, the bigotry which prompted the one deed having doubtless also instigated to the commission of the other more irreparable and lamentable outrage.

* *Mrita Kumára*, the dead *kumára* (god of war).—ED.

The inscription, of which No. 1 forms the remaining portion of the two first and only lines left, seems to have occupied the whole of what I may denominate the shield, if we consider the surrounding carving as emblazonry, which it much resembles. Some additional writing has also existed on each side of this scroll or shield on a sort of cornice, but that on the left hand of the figure has been so completely obliterated that we can only now venture to assert that there has been writing. Of the remains on the other side the letters given in No. 2 may be considered as a careful attempt at a copy.

Mata Kooñr is an object of worship in this vicinity, and that his fame extends into neighbouring districts I had a proof in a pilgrim from *Bettiah* pouring a vial of *gangotri* water on his sacred head whilst I was engaged with the sketch, of which I enclose a copy. The head, too, bears marks of being periodically anointed by a serving brahmin with *ghee*.

The enclosed sketch is to be considered as a plan of the design, and was taken from actual measurement. It struck me as rather remarkable in taking these measurements, that the results were generally in complete inches and almost never in fractions of that unit.

The countenance is that of a young man : the chin well turned, the forehead out of proportion, large. The appearance of the head seems to have been given by the hair having been twisted into pyramidal spirals.

Mata Kooñr is supposed to be a divinity of considerable power. Some years ago a *lohar* cut a piece from his left arm for the purpose of making a whet-stone ; which sacrilege occasioned the death of himself and entire family—it is said by disease.

Tradition relates that *Mata Kooñr* on the arrival of a Musulman army to attack his fort, feeling himself unable to cope with the force arrayed against him, caused his family and dependants to descend into a well, and he himself having become a stone, lay down on the mouth of it in order to conceal it from his enemy, and to ensure that no disgrace should befall the objects of his affection. A few years ago a gentleman, (name not now remembered,) caused the stone to be removed from its site in order to ascertain whether it covered a well or no; but none was found : the stone or pieces (for the stone has split from end to end nearly in the middle) were not put back in their original position ;—a dry season followed, and the cultivators of the neighbouring villages deeming that this was occasioned by the wrath of *Mata Kooñr*, came in a body and laid him again in the position which he had been known to occupy for many preceding generations.

The stone is apparently a black clay-slate.

I may mention that the appearance of the petals of the flower on the sole of the fragment of the left foot (for one foot and one hand are mutilated) would almost induce a belief that the statue was not quite finished when subjected to the ruthless hand of the destroyer. The other parts of the sculpture give an idea of its having been completed and finished with much care. The two figures of the eight-armed goddess in particular seem to me very well designed and executed.

The group outside what may be termed the frame of the principal figure consists of two stout male personages having each at his left hand a figure of the same sex, but of not more than half the height. The form next *Mata Kooñr* seems of more than Herculean proportions, and has apparently a flame or a glory about his head. His left hand rests on the head of a goat, I think, without horns and with pendent ears. The less robust figure has a disc with eight petals in each of his hands, which are held up so that the discs appear over his shoulders. He seems dressed in short drawers and short boots, whilst the apparel of his stouter companion more resembles that usually worn in the country.

The three aërial figures waving necklaces (?) over the eight-armed goddess, occupy rather more space on the stone than they appear to do in the sketch.

The waved line in the cornice over the head of *Mata Kooñr* is in the original an ornamental carving.

[NOTE.—We have delayed the publication of this notice, with the intention of lithographing the sketch ; but although sufficient to shew that the image is one of *BUDDHA*, surrounded with the smaller compartments descriptive of various acts of his life, surmounted also above by angels and gods, and below supported by the *sinha* and elephant, it is not distinct enough for the pencil. The inscriptions also are far too much abraded to be legible—but they probably contain nothing more than the ordinary couplet. The Buddhist monument to which the image belonged was probably connected with the *lât* in the same district described by Mr. HODGSON in the Journal of the Asiatic Society, vol. III. page 482. The name of that *lât* situated between the town of *Bettiah* and the *Gandak* is *Mathia*, evidently the patronymic of *Mata* or *Matha* ; *Kooñr*, or *Kunwar*, is a corruption of *Kumára*, the youthful, or the god of war :—or it may be derived from his adventure in the well, *kuñwa*. *Mata Kumára* might also be interpreted, ‘the defunct *Kumára*,’ but in any case the vulgar appellation has nothing to do with the original intention of the image.—ED.]

IV.—*Translation of one of the Granthas, or sacred books, of the Dadupanthi Sect.* By Lieut. G. R. SIDDONS, 1st Light Cav., second in command 3rd Local Horse, Neemuch.

We cannot preface Lieut. SIDDONS's specimen of the contents of the *Dadupanthi* Manual better than by extracting Professor WILSON's account of this curious sect of anti-idolatrists, from the sixteenth volume of the Asiatic Researches. Dr. WILSON had intended to have given a translation of a few passages, but his manuscript was unfortunately mislaid. His notice of the sect was chiefly obtained from Lieut.-Col. SMITH, and partly from verbal information at *Benares* where the elder branch of the same dissenters, the *Kabirpanthis*, have a principal establishment. Lieut. SIDDONS has enjoyed the advantage of collecting his materials at the head-quarters of the sect.

“The *Dadupanthi* is one of the indirect ramifications of the *Rámánandi* stock, and is always included amongst the Vishnava schisms: its founder is said to have been a pupil of one of the *Kabirpanthi* teachers, and to be the fifth in descent from RÁMÁNAND; viz. 1, *Kabir*; 2, *Kamál*; 3, *Jamál*; 4, *Bimal*; 5, *Buddhan*; 6, *Dadu*. The worship is addressed to RÁMA, but it is restricted to the *japa*, or repetition of his name, and the RÁMA intended is the deity as negatively described in the *Vedánta* theology: temples and images are prohibited.

“DADU was a cotton-cleaner by profession: he was born at *Ahmedabad*, but in his twelfth year removed to *Sambher* in *Ajmer*: he thence travelled to *Kalyánpur*, and next removed to *Naraina*, in his thirty-seventh year, a place four kos from *Sambher*, and twenty from *Jaypur*. When here he was admonished, by a voice from heaven, to addict himself to a religious life, and he accordingly retired to *Bahe-rana* mountain, five kos from *Naraina*; where after some time he disappeared, and no traces of him could be found. His followers believed he was absorbed into the deity. If the list of his religious descent be accurate, he flourished about the year 1600, at the end of AKBER's reign, or in the beginning of that of JEHANGIR. The followers of DADU wear no peculiar frontal mark nor *málá*, but carry a rosary, and are further distinguished by a peculiar sort of cap,—a round white cap according to some, but according to others one with four corners, and a flap hanging down behind; which it is essential that each man should manufacture for himself.

“The *Dadupanthis* are of three classes: the *Viraktas*, who are religious characters, who go bare-headed, and have but one garment and one water-pot. The *Nágas* who carry arms, which they are willing to exercise for hire, and amongst the Hindu princes they have been

considered as good soldiers. The third class is that of the *Bister-dharis*, who follow the occupations of ordinary life. A farther subdivision exists in this sect, and the chief branches again form fifty-two divisions, or *thambas*, the peculiarities of which have not been ascertained. The *Dadupanthis* burn their dead at dawn, but their religious members not unfrequently enjoin that their bodies after death shall be thrown into some field or some wilderness, to be devoured by the beasts and birds of prey; as they say, that in a funeral pile insect life is apt to be destroyed.

“The *Dadupanthis* are said to be very numerous in *Mārwar* and *Ajmer*: of the *Nāga* class alone the *rāja* of *Jaypur* is reported to entertain as soldiers more than 10,000. The chief place of worship is at *Naraina*, where the bed of *DADU*, and the collection of the texts of the sect are preserved and worshipped. A small building on the hill marks the place of his disappearance. A *mèla* or fair is held annually from the day of new moon to that of full moon in *Phālgun*, (February-March,) at *Naraina*. The tenets of the sect are contained in several *Bhāshā* works, in which it is said a vast number of passages from the *Kabir* writings are inserted, and the general character of which is certainly of a similar nature. The *Dadupanthis* maintain a friendly intercourse with the followers of *KABIR* and are frequent visitors at the *Chaura*, (at *Benares*.)”

बिश्वासका अङ्ग ।

दादू सहजै होइगा जेकुइ चियाराम । काहेकौं कलपैमरै दुषोहोइव काम । १ ।
साईं कियासुहै रछा जेकुइ करै सुहोइ । करताकरैसहेतहै काहे कलपैकोइ । २ ।
दादाकहैजेतै कियासुहैरछा जेतूं करै सुहोइ । करणकरां वणएकतूं दूजानां हीं
कोइ । ३ ।

सोई हमारा सांइयां जेसवकापूर्णहार । दादूजीवनसरणका जाकैहाथिबिचार । ४ ।
दादूसर्गभवनपातालमध्य आदिअन्तसवदृष्टि । सिरजिसवनि कौंदतहै सोई हमारा
दृष्ट । ५ ।

करणहारकरतापुरुष हमकै कैसी चीत । सवकाहूकीकरतहै सोदादूकामीत । ६ ।
दादू मनसा वाचा कम्मेना । साहिवकावेसास । सेवकसिरजनहारका करै कानकी
आस । ७ ।

अरणसुखमनआवैजीवकों अणकिया सब दाइ । दादूसारगमिहरका बिरलाबूझै
कोइ । ८ ।

दादू उदिम औ गुण को नहीं जेकरि जाँ पै कोइ । उदिम में आनन्द है जसाँ ई सेतीहाइ ९
 पूरण हारा पूरसी जौ चित रहसी ठाँ । अन्तर थै हरि उमगसी सक लनि रत्न रांम । १०।
 पूरि क पूरा पासि है नाँही दूरी गवार । सब जानत है वावरे देवे कौं ऊँ सियार । ११।
 दादू चिन्ता रांम कौं संघ्य सब जानै । दादू रांम सभालिये चिन्ता जिनि जानै । १२।
 दादू चिन्ता कियं कुछ नहीं चिन्ता जोव कौषाड । ळंणं था सो ळै रक्षा जांना है सो जाइ । १३।
 दादू जिनि पङ्क चाया प्राण कौं उदर उड्ड मुषि पीर । जठर अग्नि मै राषिया को मल काया
 शरीर । १४।

सो संघ्य संगो संगिर है विकट घाट यट भोर । सो साँई स्तंग हगहीं जिनि भूलै मन वीर । १५।
 गाथं दके गुण चीति करि नैन नैन पग सीध । जिनि सुषादिया कांन कर प्राण नाथ जग दीश ।
 तन मन सो जस वारि सव राषे बिसवावीस । सो साहिब सुमरै नहीं दादू माँनि हदीस । १७।
 दादू सो साहिब जिनि बीसरे जिनि घट दीया जीव । गर्भ बास मै राषिया पाले पोषै पीव ।
 हिरदै राम सभालिल मन राखै वेसास । दादू संघ्य साँईयां सब की पुरै आस । १८।
 दादू राजिक रिज कर्लिये पडा देवै हाथौं हाथ । पूरि क पूरा पासि है सदा हमारे साथ ।
 दादू साँई सब नि कौं सेवग है सुष देइ । अथामूढ मति जीव की तौ भी नाव न लेइ । २१।
 दादू सिरजन हारा सव निका औसा है संघ्य । सो ई सेवग व्हैर द्वाज हाँ सकल पसारै हाथ ।
 २२।

धनि धनि साहिब तू वडा कौन अनूप मरीत । सकल लोक सिरि साँईयां व्है करि रक्षा
 तीत । २३।

दादू ळंवल हारी सुरतिकी सब की करै सभाप्र । कीडी कुञ्जर पलक मै करता है प्रतिपाल ।
 दादू राजन भोजन सहज मै संईयां देइ सुलेई । तातैं अधिका और कुछ सो तू काँइ
 करइ । २५।

दादू टूका सहज का सनौषी जनषाड । मृतक भोजन गुर मुषा काहे कल पै जाई । २६।
 परम स्वर के भाव का एक कण काषाड । दादू जेता पाप था धर्म कर्म सब जाई । २७।
 दादू कौन पकावै कौन पीसै । जहां तहां सीधा ही दीसै । २८।

दादू भाडा देह का तेता सहज विचार । जेता हरि विचि अन्तरा तेता सबै निवार । २९।
 दादू जल दल रांम का हमले वै प्रसाद । संसार का समझै नहीं अबिगत भाव अगाध । ३०।
 दादू ज कुक्षु सीषु दादू की होवें गसाई । पचि पचि कोई जिनि मरै सुणि लजै लोई । ३१।
 दादू बूटु दाई कहीं कोनाहीं फिरि है पिरथी सारी । दूजा दह धि दूरि करि वारे साधु
 सब विचारी । ३२।

दादू बिना रांम कहीं फिरि है पिरथी सारी । दूजा दह धि दूरि करि वारे सुनि यह साधु
 मन्दा । ३३।

दादूसिदकसबूरीसाचगहि सावतिराषिभकीन। साहिबसौंदिललाइरह मुरदाहो
इमसकीन। ३४।

दादूअणबंछाटूकाषातहैं मरमहिलागमन। नांवनिरंजनलेतहैं यौनिर्मलसाधुजंन।
अणबंछाआगैपडै पोछे लेइ उठाइ। दादूकेसिरिदेसपह जेकुकरांमरजाइ। ३६।
अणबंछाआगैपडै। पखाविचारिबषाइ। दादूफिरैतोटतातर वरताकिनजाइ।
अणबंछीअजगैवकी राजीगमनगरास। दादूसतिकरिलीजियेसोजाईकेपास। ३८।
मीठेकासबमीठालागै भावैविषभरिदेइ। दादूकडुवानांकहैअमृत करिकरिले। ३९।
विपतिभलीहरिनामसौं कायाकसौटो टुष। रांमविनांकिसकांमका दादूसंपतिसुष।
दादूएकविसांसविन जियरांडांवांडोल। निकटनिधिदुषपाईऐ चिंतामणीअमोख
। ४१।

दादूबिनबेसासीजीयरा चबलनांहींठौर। निहचैनैरुचलनारहै कछूऔरकीऔर।
४२।

दादूझंणायामोव्हैरह्या जिनिवांकेसुषदुष। सुषमागेंदूषआइसी पैपीयनबिसारीमुष।
दादूझंणायामोव्हैरह्याखर्गनबाञ्कीघाइ। नर्ककन्हैथीनाउरी ऊवासहोसीआइ। ४४।
दादूझंणायामोव्हैरह्या। जेकुक्कीयापीव। पलबधैनकिनघटे चौसीजांणीजीव। ४५।
दादूझंणायामोव्हैरह्या औरनहोवैआइ। लेनायामोलेरहै औरनलीयाजाइ। ४६।
जूरचियातूहोईगा काहेकौसिरिले। साहिबउपरिराषिये देषितमासाए। ४७।
जुजाणैतूंराषियै तुमसिरिढालीराइ। दूजाकोदेपौनहींदादूअनतनजीइ। ४८।
जूंतुन्हभावैतूषसी हमराजी उसवात। दादूकेदिलसिदकसौंभावेदिनकौरात। ४९।
दादूकरणाहारजेकुक्किया सोबुरानकहनाजाइ। सोइसेवगसंतजन रहिवारांम
रजाइ। ५०।

दादूकरताहमनही करताऔरैकोइ। करताहैसोकरैगा तूंजिनकरताहोइ। ५१।
कासीतजिमगहरगया कबीरभरोसैराम। सैदेहीसांईमित्यादादूपूरेकांम। ५२।
दादूराजीरांमहै राजिकरिजकहमार। दादूउसप्रसादसौंपोथा सबपरिवार। ५३।
पंचसंतोमेएकसौं मनमतिवालामांहि। दादूभागीभूषसब दूजा भावैनांहि। ५४।
एकमेरकाढामडा कूहींभ खानजाइ। भूषनभागीजीवकीदादूके ताषाइ। ५५।
दादूसाहिबमेरेकपडे साहिबमंराषाण। साहिबसिरकाताजहै पाहिबपिण्डपराण।
दादूईश्वरजीवकी नितिकरै प्रतिपाल। अंबाज्यूपैसदा मतिदुषपावैवाल। ५७।
सांईसतसन्तोषदे भांवभगतिवेसास। सिदकसबूरोपाचदे मगिदादूदास। ५८।
विश्वासकोअरुसंपूर्ण।

Translation of the chapter on Faith.

1. Whatever RA'M willeth, that, without the least difficulty, shall be ; why, therefore, do ye kill yourselves with grief, when grief can avail you nothing ?

2. Whatsoever hath been made, GOD made. Whatsoever is to be made, GOD will make. Whatsoever is, GOD maketh,—then why do any of ye afflict yourselves ?

3. DADU sayeth, Thou, oh GOD ! art the author of all things which have been made, and from thee will originate all things which are to be made. Thou art the maker, and the cause of all things made. There is none other but thee.

4. He is my GOD, who maketh all things perfect. Meditate upon him in whose hands are life and death.

5. He is my GOD, who created heaven, earth, hell, and the intermediate space ; who is the beginning and end of all creation ; and who provideth for all.

6. I believe that GOD made man, and that he maketh every thing. He is my friend.

7. Let faith in GOD characterize all your thoughts, words, and actions. He who serveth GOD, places confidence in nothing else.

8. If the remembrance of GOD be in your hearts, ye will be able to accomplish things which are impracticable. But those who seek the paths of GOD are few !

9. He who understandeth how to render his calling sinless, shall be happy in that calling, provided he be with GOD.

10. If he that perfecteth mankind, occupy a place in your hearts, you will experience his happiness inwardly. RA'M is in every thing ; RA'M is eternal.

11. Oh foolish one ! GOD is not far from you. He is near you. You are ignorant, but he knoweth every thing, and is careful in bestowing.

12. Consideration and power belong to GOD, who is omniscient. Strive to preserve GOD, and give heed to nothing else.

13. Care can avail nothing ; it devoureth life : for those things have existed which were ordained, those things shall happen which GOD shall direct.

14. He who causeth the production of all living things, giveth to their mouths milk, whilst yet in the stomach. They are placed amidst the fires of the belly : nevertheless they remain unscorched.

15. Oh forget not, my brother, that GOD's power is always with you. There is a formidable pass within you, and crowds of evil passions flock to it : therefore comprehend GOD.

16. Commend the qualities which GOD possesseth. He gave you eyes, speech, head, feet, mouth, ears, and hands. He is the lord of life and of the world.

17. Ye forget God, who was indefatigable in forming every thing, and who keepeth every thing in order ; ye destroy his doctrines. Remember God, for he endued your body with life : remember that beloved one, who placed you in the womb, reared and nourished you.

18. Preserve God in your hearts, and put faith into your minds, so that by God's power your expectations may be realized.

19. He taketh food and employment, and distributeth them. God is near ; he is always with me.

20. In order that he may diffuse happiness, God becometh subservient to all ; and although the knowledge of this is in the hearts of the foolish, yet will they not praise his name.

21. Although the people every where stretch out their hands to God ; although his power is so extensive, yet is he sometimes subservient to all.

22. Oh God, thou art as it were exceeding riches ; thy regulations are without compare, thou art the chief of every world, yet remainest invisible.

23. DADU sayeth, I will become the sacrifice of the Godhead ; of him who supporteth every thing ; of him who is able, in one moment, to rear every description of animal, from a worm even to an elephant.

24. Take such food and raiment as it may please God to provide you with. You require naught besides.

25. Those men who are contented, eat of the morsel which is from God. Oh disciple ! why do you wish for other food, which resembles carrion ?

26. He that partaketh of but one grain of the love of God, shall be released from the sinfulness of all his doubts and actions. Who need cook, or who need grind ? Wherever ye cast your eyes, ye may see provisions.

27. Meditate on the nature of your bodies, which resemble earthen vessels ; and put every thing away from them, which is not allied to God.

28. DADU sayeth, I take for my spiritual food, the water and the leaf of RA'M. For the world I care not, but God's love is unfathomable.

29. Whatever is the will of God, will assuredly happen ; therefore do not destroy yourselves by anxiety, but listen.

30. What hope can those have elsewhere, even if they wandered over the whole earth, who abandon God ? oh foolish one ! righteous men who have meditated on this subject, advise you to abandon all things but God, since all other things are affliction.

31. It will be impossible for you to profit any thing, if you are not with God, even if you were to wander from country to country ; therefore, oh ignorant, abandon all other things, for they are affliction, and listen to the voice of the holy.

32. Accept with patience the offering of truth, believing it to be true ; fix your heart on God, and be humble as though you were dead.

33. He who meditateth on the wisdom which is concealed, eateth his morsel and is without desires. The holy praise his name, who hath no illusion.

34. Have no desires, but accept what circumstances may bring before you ; because whatever God pleaseth to direct, can never be wrong.

35. Have no desires, but eat in faith and with meditation whatever chances to fall in your way. Go not about, tearing from the tree, which is invisible.

36. Have no desires, but take the food which chances to fall in your way, believing it to be correct, because it cometh from God ; as much as if it were a mouthful of atmosphere.

37. All things are exceeding sweet to those who love God ; they would never style them bitter, even if filled with poison ; on the contrary, they would accept them, as if they were ambrosia.

38. Adversity is good, if on account of God ; but it is useless to pain the body. Without God, the comforts of wealth are unprofitable.

39. He that believeth not in the one God, hath an unsettled mind ; he will be in sorrow, though in the possession of riches : but God is without price.

40. The mind which hath not faith, is fickle and unsettled, because, not being fixed by any certainty, it changeth from one thing to another.

41. Whatever is to be, will be : therefore long not for grief nor for joy, because by seeking the one, you may find the other. Forget not to praise God.

42. Whatever is to be, will be : therefore neither wish for heaven nor be apprehensive on account of hell. Whatever was ordained, is.

43. Whatever is to be, will be ; and that which God hath ordained can neither be augmented nor decreased. Let your minds understand this.

44. Whatever is to be, will be ; and nothing else can happen. Accept that which is proper for you to receive, but nothing else.

45. Whatever God ordereth, shall happen, so why do ye vex yourselves ? Consider God as supreme over all ; he is the sight for you to behold.

46. DADU sayeth, Do unto me oh God ! as thou thinkest best—I am obedient to thee. My disciples ! behold no other God ; go no where but to him.

47. I am satisfied of this, that your happiness will be in proportion to your devotion. The heart of DADU worshippeth God night and day.

48. Condemn nothing which the creator hath made. Those are his holy servants who are satisfied with them.

49. We are not creators—the Creator is a distinct being ; he can make whatever he desireth, but we can make nothing.

50. KUBEERA left *Benares* and went to *Mughor* in search of God. RA'M met him without concealment, and his object was accomplished.

51. DADU sayeth, My earnings are God. He is my food and my supporter ; by his spiritual sustenance, have all my members been nourished.

52. The five elements of my existence are contented with one food : my mind is intoxicated ; hunger leaveth him who worshippeth no other but God.

53. God is my clothing and my dwelling. He is my ruler, my body, and my soul.

54. God ever fostereth his creatures; even as a mother serveth her offspring, and keepeth it from harm.

55. Oh God, thou who art the truth, grant me contentment, love, devotion, and faith. Thy servant DADU prayeth for true patience, and that he may be devoted to thee.

V.—*Notice of new Sites of Fossil deposits in the Nerbudda Valley.* By
Dr. G. G. SPILSBURY. Pl. XXX.

[In a letter to the Sec., see Proceedings As. Soc. for May, p. 321.]

The last presentation I made to the museum was part of the os innominatum of an elephant, which, judging by the size of the sockets, was supposed to be of larger dimensions than the animal whose bones were delineated in your August No. for 1834. The specimen was picked up on the hill close to *Jabalpur*, on the site first brought to notice by Captain SLEEMAN, and whose discovery has been the parent of the whole of my researches. This specimen was forwarded as being the first that appeared to me of definite form sufficient to identify the animal to which it belonged. Since this I have been over the hill several times, but with the exception of one vertebra of the same or similar sized animal, I have not been able to add more specimens of sufficient size or determinate form to my collection; though I doubt not the hill is most rich in fossil remains from the quantity of fragments of trees and bones strewed about. From a note of mine in December last you were made aware that I was following up my investigations at *Sagauni* on the *Omar Naddhi*. These have now led to the discovery of three new sites for the knowledge of which we are solely indebted to Major OUSELEY, the principal Assistant of the district, whose zeal in the prosecution of these most interesting discoveries, and kindness in aiding and facilitating their conveyance to me will, I have no doubt, be fully appreciated by the Society when the specimens are presented, and which I trust will be before the termination of March. I shall now proceed to give some description of the present dispatch, consigned to my friend Dr. Row's care, who will I know have much pleasure in forwarding them to you.

Seven of the specimens are from my old site of *Sagauni*, and as I before forwarded two femurs, the present must evidently have belonged to another animal of the same species. They consist of a sacrum, part of the os innominatum containing the socket, part of the os pubis,

the symphysis being very distinct*, a femur (figs. 1, 2, see note) in two pieces and a tibia (figs. 3, 4) in as many. These constitute the packages from *Sagauni*, and you will doubtless immediately recognize the same formation and matrix as those first sent. Circumstances not allowing of my visiting the place in person, I requested Major OUSELEY, who was at that time at *Narsinghpur*, to visit the place and have a shaft cut from top to bottom. While so employed, being accompanied by numerous *patels* of the neighbourhood, one of them informed him that about two kos off, a giant's head was projecting from the bank near his village; and on visiting the place the splendid upper jaw, that is now presented†, was excavated and sent in. This also led to the discovery of the fossil Buffalo-head, (for I presume from the size and setting on of the horns, that there will be no doubt as to what animal it belongs,) together with four other fossil remains of animals which I shall leave to the cognoscent to class. I have still two specimens to forward, one a shoulder from *Sagauni*, the other a nearly complete elephant's head with exception of the lower jaw. This last was the result of native intelligence, Major OUSELEY being informed that close to *Rewanagar* was a giant's head, and that the place or ravine in which it was deposited obtained the name of the *Dona's khoh* from this circumstance. This, however, with the shoulder must await another opportunity, as they do not weigh less than five maunds, and the fragments now brought to your notice are not less than ten. Thus from Captain SLEEMAN's first discovery of a fossil deposit near *Jabalpur* valley, and a slight notice of that fact in your Journal, eleven sites (including *Jabalpur* and *Hoshingabad*) in the valley of the *Nerbudda* have been brought to the notice of those interested in geological pursuits, and with the valuable aid now afforded by my new coadjutor Major OUSELEY, I trust to add to the number.

In conclusion I beg to send a sketch, shewing the locale of the new sites.

NOTE.—The dimensions of the huge fossil humerus and cubitus, represented in the plate correspond so nearly with those of the femur formerly extracted by Dr. SPILSBURY from the same spot *Sagauni*, that we may safely allot them to the same animal, an elephant of certainly more than fifteen feet high: and indeed our museum will soon be able to put the animal together from the ponderous masses

* These fragments put together are represented in Plate XXX. figs. 5, 6.—ED.

† A fine fossil, ferruginized—of a smaller size than the *Sagauni* elephant.—ED.

Nerbudda Fossil Elephant

fig. 1.

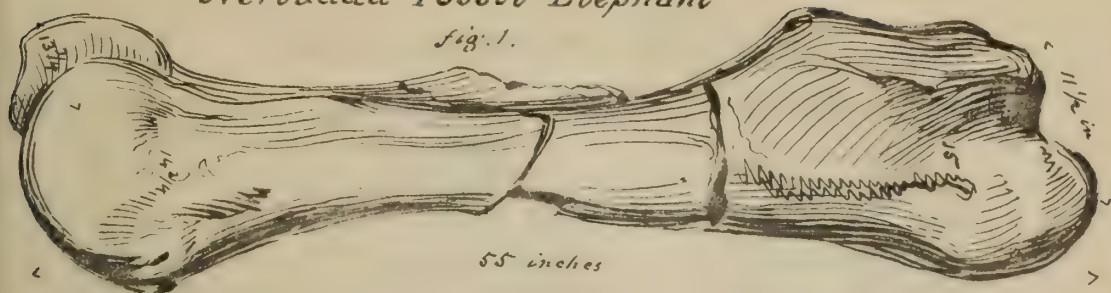


fig. 2.

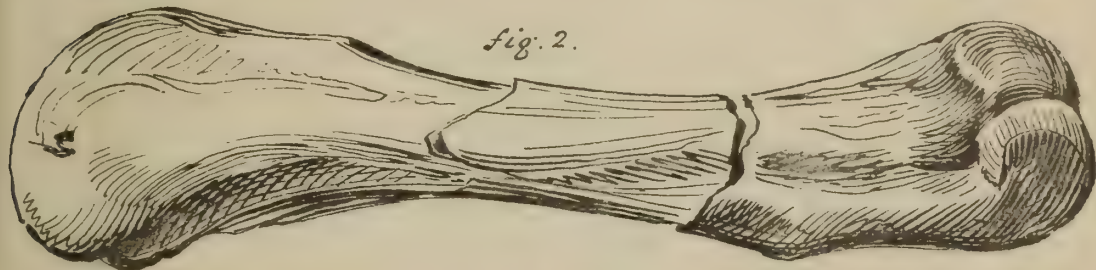


fig. 3.

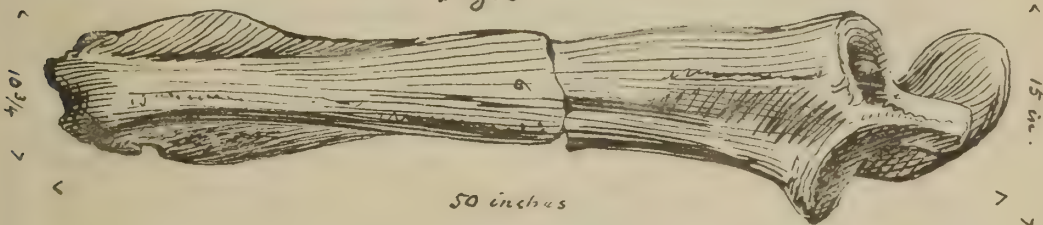


fig. 4.

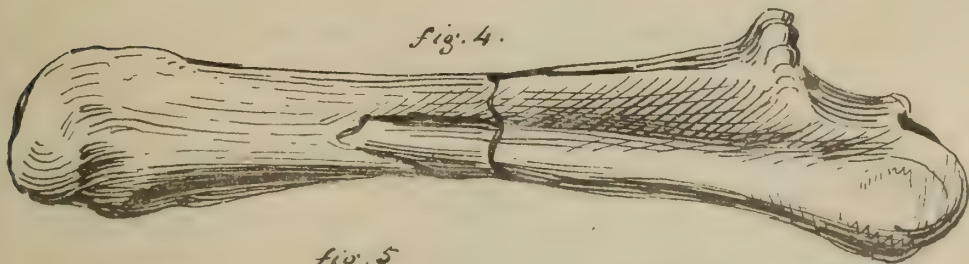
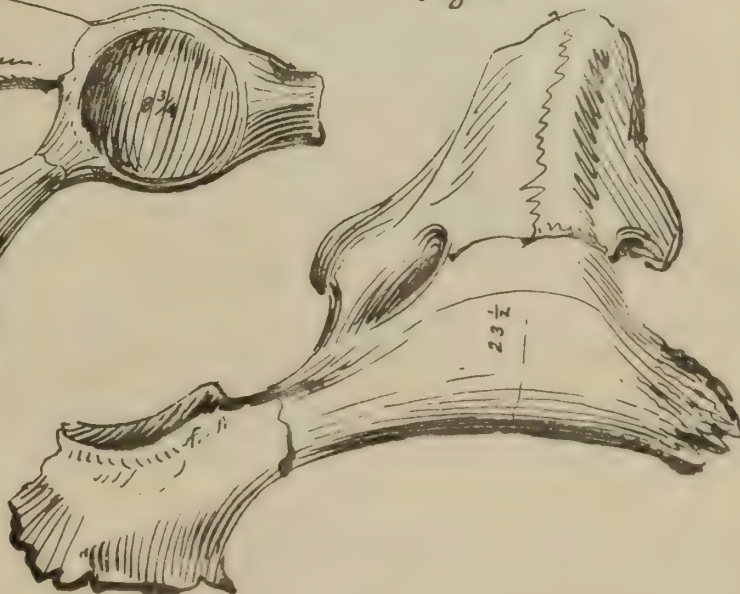


fig. 5.



fig. 6.



Dr. S. has, at great trouble and expense, conveyed across country from the *Nerbudda* to the *Ganges* for us. In the sketch of localities joined to his note, it becomes evident that the whole alluvium contains fossil remains; and we may confidently leave its exploration to the Doctor and his coadjutor Major OUSELEY. We might expatiate upon the gold medals awarded by the London Geological Society to Messrs. CAUTLEY and FALCONER* as a stimulus to our discoverers, but although it must be an encouragement to all to find their labors thus appreciated at home, we should blush to put such rewards in the scale against, or with, the disinterested love of science which has done so much alone. We would suggest to Dr. S. not to confine himself to gigantic specimens, but particularly to select from the mass of fragments, teeth of all sorts: hitherto we have only had the horse, the elephant, and the buffalo from *Jabalpur*, but doubtless there are as many other animals associated with these as at *Perim* and elsewhere. We have not time at present to lithograph the buffalo (an incontestable one it is) but we reserve it with the less regret because we are expecting a similar specimen from Mr. DAWE,—when all the heads can be arranged together for comparison.—Ed.

VI.—*New species of Scolopacidae, Indian Snipes.*

By B. H. HODGSON, Esq.

In No. 32 of the *Gleanings in Science*, (the precursor of your *Journal*) for August, 1831, I gave a full and careful account of the Woodcock and of the several Snipes of *Nepál*. But as no technical names and characters were then affixed to these birds†, I may as well attempt to supply the deficiency for the benefit of *local inquirers*, who, I suspect, are hardly sufficiently alive to that legerdmain of the closet-naturalist, whereby they are cheated of the whole merit of their labours by him who does no more than annex a few words of doggrel Latin to the numerous facts painfully elaborated by costly and continuous attention. How long assiduous local research is to be deliberately deprived of those aids of library and museum which it ought to be the chief duty of learned Societies at home to furnish, I know not. But the candid will, in the meanwhile, make all

* We hope these medals will not be so tardy of arrival as those voted to Captains BURNES and CONOLLY by the Paris Geographical Society which have not yet made their appearance.—Ed.

† Those to whom it went, best know what is become of the paper I sent home, *with* these names and characters affixed.

allowances for the necessary errors cleaving to attempts at technical Zoology, in the want of such aids. Whilst the face of our land is darkened with skin-hunters, deputed by learned Societies to incumber science with ill-ascertained species, no English zoological association has a single travelling naturalist* in India; nor has one such body yet sought to *invigorate local research*, numerous as now are the gentlemen in India with opportunities and inclination for observation such as need but the appropriate aid of those bodies to render the investigations of these gentlemen truly efficient towards all the higher ends which the Societies in question are constituted to forward!

GRALLATORES.

SCOLOPACIDÆ.

Genus SCOLOPAX, Auctorum.

Species, new? *Indicus*, nobis.

Structure typical: aspect of the European type: size less, 14 inches long by 24 between the wings, and 12 oz in weight: bill 3 inches: tail $3\frac{1}{2}$: wings about $1\frac{1}{4}$ inch less than the tail: 1st quill longest: tertials about 1 inch less. Tarsus $1\frac{3}{4}$; central toe $1\frac{1}{2}$, hind $\frac{1}{2}$ †. Tail 12, soft, uniform.

Remark. Found everywhere, in the higher mountains of India. Colored like the European type, but asserted by competent judges to be less in size. The size and proportions given will determine this point. If *both* differ, the species must be distinct, and will form an interesting instance of geographical equivalency without specific identity—of which probably there are very many yet to be noted, especially among the *Raptores*, the waders, and the swimmers—migrating birds which have, it is true, a wide range, but very apparently (according to my experience), a *limited* one.

Genus GALLINAGO, Auctorum.

Species, new: *Nemoricola*, nobis.

Large dark wood-haunting snipe, with full soft bowed wings: shortish tail of 16 to 18 feathers, whereof the 8 or 10 laterals are somewhat narrowed and hardened: large blue legs and feet, and belly

* The French, who are far quicker-witted than we Beotian islanders, have had two such agents in India ever since I came to it. But the travelling naturalist is in no condition to compete with the fixed local student, if the latter receive the obvious helps from home. For many years past we have had great and wealthy Zoological Societies in London, which, however, have not yet found out that the phenomena of animate nature must be observed where they exist!

† My method of measuring the tarsus and digits has been explained in the Indian Journal of Science, No. VIII. for November 1836.

entirely barred: $12\frac{1}{2}$ inches long by 18 between the wings: bill $2\frac{5}{8}$, tail $2\frac{1}{2}$: tarsus $1\frac{3}{4}$: central toe $1\frac{1}{8}$: hind $\frac{7}{8}$: weight 7 oz.

Remarks. This interesting species forms by its size, its manners, and some points of its structure, a link between the genera *Scolopax* and *Gallinago*, but deviates from both towards *Rhynchæa*, by the feebleness of its soft, bowed and subgradated wings, which have the 2nd quill longest. I have set it down in my note book, as the type of a new genus or subgenus, under the style of *Nemoricola Nipalensis*, but I forbear, for the present, from so naming it. Its general structure is that of a snipe, but the bill is a woodcock's, and the legs and feet are larger than in *Gallinago*. It is shy, non-gregarious, avoids the open cultivated country, and is only found in the haunts of the woodcock, with this difference in its manners, as compared with those of *Scolopax*, that it is averse from the *interior* of woods. The wings are usually from $\frac{3}{4}$ to 1 inch less than the tail, and the prime and tertial quills are equal. The tarsi differ from those of the common snipe in that the scales, postally, are broken on the mesial line, whereas they are entire in that bird.

2nd Species, new: *Solitaria*, nobis.

Large, pale, luteous-legged snipe, with small legs and feet, and tail consisting of 20 plumes, whereof the 10 laterals are hardened and narrow: $12\frac{1}{2}$ inches long by 20 in expanse: bill $2\frac{3}{4}$: tail $3\frac{1}{8}$: tarsus $1\frac{7}{8}$: central toe $1\frac{3}{8}$: hind $\frac{5}{8}$: weight $6\frac{1}{2}$ oz.

Remarks. The general structure of this bird is perfectly typical, (*Gallinago*), but it has shorter legs and feet than the ordinary snipe, from which it further differs by the division of the tarsal scales, on the postal aspect. This is a point of affinity with the last, with which our present species agrees very closely in manners; the two conducting one, without a sensible interval, from *Scolopax* to *Gallinago*. The trivial name refers to the habits of the species: but the term, in English, is usually applied by our sportsmen to the preceding bird which is found in the *Doons* and *Kaders* near the hills, whereas the present species never quits the hills. In our present subject the wing has all the strength and acumination so characteristic of most of its confamilars. The tail also is firm and of good length. The tail usually exceeds the wings by about half an inch, the tertials being scarcely so long as the primes.

3rd Species, *Biclavus*, nobis.

Common Indian field snipe, with the lining of the wings perfectly barred, and tail of 24 to 28 feathers, of which the 16 to 20 laterals

are narrowed almost to threads, and very rigid. 11 inches long by 17 wide, and 5 oz. in weight; bill $2\frac{1}{2}$: tail $2\frac{1}{4}$: tarsus $1\frac{1}{2}$: central toe $1\frac{1}{4}$, hind $1\frac{6}{8}$.

4th Species, *Uniclavus*, nobis.

Common Indian field snipe, with the lining of the wings faintly barred, the bill long, and tail of 14 to 16 uniform plumes. $11\frac{1}{2}$ inches long by 17 wide*, and 5 ounces in weight: bill $2\frac{3}{4}$: tail $2\frac{5}{8}$: tarsus $1\frac{1}{2}$: central toe $1\frac{1}{4}$, hind $1\frac{6}{8}$.

Remarks. The two last species are the ordinary snipes of the plains and hills: their general structure and aspect are quite typical, but their size is less than that of their European analogue. The differences noted in the two species are permanent, as I have proved by the examination of numberless specimens of both sexes, and in all stages of moult. Both the bill and the tail of *Uniclavus* are conspicuously longer than those of *Biclavus*. In characterising these four species of *Gallinago*, I have chosen purposely to rely on size, proportions, and the structure of the tail—points which I have no doubt will serve to fix my species without reference to colors, in relation to which it may be observed that the uniformity of aspect (except in our *Nemoricola*, which has the woodcock bars below) is calculated only to confuse those who are referred to it for specific differences. The expressions dark and pale, in the specific characters of *Nemoricola* and *Solitaria*, have careful reference to the average tone and intensity of color in the type of *Gallinago*.

In *Biclavus*, the wings are seldom so much as an inch short of the tail: whereas in *Uniclavus*, they are generally $1\frac{1}{4}$ at least. This is caused by the superior length of the tail in the latter: for the wings of both are of equal size, and 5 inches long from the bend of the shoulder to the tip of the longest quill.

* The Rev. R. EVEREST, in 1825, killed a bird of this species, $12\frac{1}{2}$ inches long and 7 oz in weight!! But monsters are abnormal; and I take occasion to say that all my sizes, weights and proportions in this paper are mean maxima, deduced from numberless trials. I may add, that the sexual differences are purposely overlooked, having been found to be inappreciably small. The females, however, are the larger; and the males, the deeper toned in color.

VII.—*Proceedings of the Asiatic Society.**Wednesday Evening, the 5th July, 1837.*

The Hon'ble Sir EDWARD RYAN, President, in the chair.

Mr. J. MUIR, C. S., proposed by Captain CAUTLEY, seconded by the Secretary, at the last meeting, was elected a Member.

The Baron SCHILLING, of *Cronstadt*, was, upon the favorable report of the Committee of Papers, elected an Honorary Member.

RUSTAMJI' COWASJI', was proposed by Baboo RA'M COMAL SEN, seconded by Sir E. RYAN.

Baboo SUTT CHURN GHOSAL, proposed by the Secretary, seconded by Mr. HARE.

Captain BOGLE, proposed by Mr. WALTERS, seconded by Captain PEMBERTON.

Read a letter from Dr. J. SWINEY, acknowledging his election as a Member.

Read the following correspondence regarding the museum, consequent upon the resolution of the last meeting.

To the Right Honorable GEORGE, Lord AUCKLAND, &c. &c. &c.
Governor General of India in Council.

MY LORD,

I have been requested by the Asiatic Society to become the organ of a respectful representation to your Lordship in Council on a topic of great importance to the interests of the Society, which was made the subject of a Resolution passed at a general meeting held on the 7th instant.

I have now accordingly the honor to submit a copy of that Resolution, and with every deference and respect to solicit for the prayer of it, the most favorable consideration of your Lordship's Government.

The Asiatic Society has been in existence for more than half a century. Founded by the illustrious Sir WILLIAM JONES, with the concurrence and support of the no less illustrious WARREN HASTINGS, it has uniformly enjoyed the countenance and protection of the high officers placed at the head of the Indian administration, many of whom have joined in its objects with more than the formal interest of nominal patrons, and have contributed individually to its records of literature, or to its collection of antiquities and of curious natural productions.

It would be quite superfluous to enumerate, in addressing the Society's official patron, the many eminent men whose names have adorned and still adorn its list of members, or to recal the services they have severally rendered to science and to literature; but it is by no means to these alone that the Institution owes its efficiency, its stability, and its reputation. Without the co-operation of the many, the talents and abstract studies of the few would have been comparatively ineffectual; and the learned world in many cases would have been deprived of the chief benefit of their studies and knowledge but for the combination which is so necessary to effect undertakings of magnitude and expence, and for the stimulus which emulation, and publicity, and a common interest never fail to excite.

Since its foundation the Asiatic Society has expended more than three lakhs of rupees upon the prosecution and publication of its Reseaches in the languages, the philosophy, the history, the geography, physical, and statistical of India; and there is no branch of useful knowledge connected with this country that has not received illustration through the judicious employment of its funds.

On one or two occasions the Society has received handsome donations from individuals, but it has never yet solicited or received public aid from the Government of the country. In venturing therefore to propose a measure for which there was no precedent in its history, the Committee of papers, with whom the suggestion originated, deemed it incumbent on them to shew the Society at large the grounds upon which they rested their recommendation: and the substance of the arguments they then used I am now requested by the Society to lay before your Lordship in Council.

It is not from a declining Society that an appeal is made, to save it from impending ruin or to enable it to support its expences on the same scale of efficiency as heretofore. On the contrary, the Society never had a more flourishing list of contributing Members, nor was it ever more actively engaged on the multiplied objects of its attention. Indeed it would be difficult to mention any department in which its duties have not materially increased within the last few years.

By the transfer of the Oriental publications from the Education Committee a very important and responsible task has been thrown upon the Society, which it is most anxious to perform with diligence and satisfaction to the increasing body of Oriental scholars in Europe, who have expressed a common feeling and interest in its efficiency and permanency.

By the transfer of the Oriental manuscripts and printed volumes from the College of Fort William the Society's library has been doubled, and the charge and responsibility of its management proportionately increased. The Society cannot be insensible of the obligation of making known its contents, of encouraging and providing accommodation for copyists, and of guarding property of increasing value. Thus the extension of the library has been attended with consequences which are felt in various matters of detail that cannot well be described.

Literary publications have also sought the Society's auspices in greater number of late than heretofore; and the government has paid it the compliment of seeking its advice and of following its suggestions in respect to many literary undertakings for which the public patronage had been solicited.

The government of *France* has condescended to employ the Society as the medium for procuring additions to the superb Oriental library of the French nation, and many distinguished Orientalists of the Continent have solicited the same favor.

From all these sources the responsibility, the substantive existence of the Society has derived strength and lustre; but every enlargement of its connections and every new field of its operations cannot but call for some additional expenditure or point out some desideratum which the Society's means are unable to provide; and this must be always more prominently felt where, from all the officers of the institution affording their services gratuitously, there is a reluctance in imposing new duties or expecting an increased devotion of their limited leisure.

But it is particularly in the physical branch of its labours—a vast field comprehending, according to the emphatic expression of Sir WILLIAM JONES, "whatever is produced by nature within the geographical limits of Asia," that the Asiatic Society feels itself most backward and deficient of means.

The rapid strides that have been made in physical inquiry throughout the world in the present age, have been compassed only by national efforts. By these have the schools of *Paris* been raised to the perfection of which they now boast, and her museums stored with most instructive and precious collections.

By the combinations of the wealthy, aided by a popular government is England now beginning to rival her. A national museum is indeed throughout *Europe* become an essential engine of education, instructive alike to the uninformed who admires the wonders of nature through the eye alone, and to the refined student who seeks in these repositories what it would be quite out of his power to procure with his own means.

The Asiatic Society, or it may be allowable to say the metropolis of British India, has had the germs of a national museum as it were planted in its bosom. As at *Paris* a new era was opened in the history of its great museum, the Jardin des Plantes, through the discoveries of extinct and wondrous animal forms exhumed from the rocks on which the town was built, and which required all the adjuncts of comparative anatomy for their investigation even by the master-hand of the great CUVIER; so in *Calcutta* through the munificence of a few individuals and the development of fossil deposits in various parts of India hitherto unsuspected, we have become possessed of the basis of a grand collection, and we have been driven to seek recent specimens to elucidate them. Our desire has been warmly seconded by all who have enjoyed the opportunity of contributing; from *China*, from *New South Wales*, from the *Cape*, and from every quarter of the Honorable Company's possessions, specimens of natural history, of mineralogy, and geology, have flowed in faster than they could be accommodated, and the too little attention they have received has alone prevented similar presentations from being much more numerous; for it is but reasonable to suppose that of the stores continually dispatched to England or the Continent, the Society would have received a larger share, had it done proper honor to what it has received.

In May 1835, the Society resolved to try the experiment of appointing salaried officers to the charge of its museum. For two years economy in other departments has enabled it to maintain this system, and the good effects of the measure are visible to all who visit the rooms. Yet not being able to purchase more than a small portion of the time of a competent naturalist, the benefit has been comparatively limited, and now at the very commencement of the experiment the state of the Society's funds will compel it to withhold further support from its incipient museum unless some fresh source of income be provided.

These then, are the motives that have persuaded the Society of the propriety of an appeal to the Ruling Power:—not to contribute to the ordinary wants and engagements of the institution, but to convert that institution into a public and national concern, by entrusting it with the foundation and superintendence of what has yet to be formed for the instruction of our native fellow subjects, as much as for the furtherance of science,—a public depository of the products of nature in India and the surrounding countries properly preserved, properly arranged, and properly applied.

To effect such an object it is indispensable that the services of a professional naturalist of high attainments should be engaged, and that he should have at his command the means of working effectually, and of devoting his whole time to the employment.

What, it may be asked, will be the return to government if the state undertake to supply such an officer? To this question more than one satisfactory answer may readily be given.

The Honorable Company have in Leadenhall Street a very valuable museum supported at considerable expense. To that museum, ours would be a powerful auxiliary. Duplicates of every sort here collected might be set apart for England. Again the local government has scientific expeditions continually employed in exploring the country. Geographical, geodesical, and statistical information is continually under collection without any office of record, or officer of analysis, to whom it can be appropriately referred for digestion. Efforts are continually misemployed for want of proper direction, and opportunities are lost for want of proper instructions that may be ever regretted by the scientific world. Again, the means of education in the natural sciences would be improved or rather created by the formation of a museum, the superintendent of which would always be able to devote a portion of his time to demonstrations and lectures, either expected as a part of his duty, or yielding a means of partial reimbursement.

But the Society feels that it is almost unbecoming to suppose that the Government of a great country would ask for reasons to support the present application; for the encouragement given to botanical pursuits by the maintenance of two public gardens at considerable charge, and the sums placed at the disposal of the agricultural and horticultural societies and to similar institutions, are so many evidences that the Government have only to be convinced that the object is one of essential public benefit, or calculated to promote scientific discovery, when the inclination to provide the necessary support will not be wanting. The expenditure that has been bestowed upon the theoretical admeasurement of the earth's surface, for the elaborate determination of which the Honorable Company's Government has been justly held up to the admiration of the world, is an instance particularly in point. The Society has ever felt that the public grants to those and numerous other objects of a similar nature, have been boons to itself, so far as they have promoted the researches contemplated, in its original foundation; and if on this occasion it fails to impress upon Government the claims of other branches of science and literature, all of which require and will benefit by the establishment of a public museum, the Society will attribute it rather to the weakness of the appeal made on its behalf than to the real weakness of its cause.

I have only in conclusion, to explain that although the Society in the accompanying resolution has ventured to name a specific sum which would probably be sufficient for the objects which it has in view yet the members would leave it entirely to the superior judgment of your Lordship in Council to determine what sum it would be expedient to devote from the public finances towards the general furtherance of the Society's objects; should it indeed appear to you that the application which I have been requested to lay before Government, is based on sound and reasonable arguments, and that it merits the consideration and support which I have ventured, as much from my own feelings as from my duty to the Society, to urge in its favor.

I have the honor to be, &c.

Calcutta, 15th June, 1837.

(Signed) EDWARD RYAN,
President.

[For a copy of the Resolutions annexed see page 400.]

To the Honorable Sir E. RYAN, Knight.

President of the Asiatic Society.

HONORABLE SIR,

The representation submitted by you on behalf of the Asiatic Society of Calcutta has been considered by the Right Honorable the Governor General of India in Council with the attention due to the importance of the objects for which the assistance of Government is solicited, and to the character of the Society and of those who have united in the resolution to make this appeal.

2. The Right Honorable the Governor General of India in Council fully admits that the public of Europe and of Asia have incurred a heavy debt of gratitude to the Society for the persevering and successful efforts it has made for more than half a century to develop the literary resources of Asia, and to ascertain and collect objects of scientific and antiquarian interest. His Lordship in Council feels also, that although the publication of these results, through the Researches of the Society and in other works of wide circulation, has contributed largely to the advancement of general science, and has given to the labours of its members all the utility that such diffusion could impart, still, without a museum and library in which the products of art and nature, and especially coins and other interesting remains of antiquity, might be collected for the personal examination of the more curious; one important means of deriving benefit from those labours must still be wanting.

3. His Lordship in Council is further sensible that the expense of establishing such a museum, with its necessary adjuncts, cannot be expected in this country to be met by voluntary contributions from the limited number of persons who take an interest in such pursuits; and therefore, although the Society has already done much towards preparing the ground for such an establishment, that it cannot be maintained in the creditable and useful condition necessary for the attainment of the objects desired, unless aided liberally by the Government, in like manner as similar institutions in Europe are supported from the public treasury.

4. But although his Lordship in Council acknowledges all these claims on the liberality of Government, he yet feels precluded from giving his immediate sanction to the specific annual grant solicited by the Asiatic Society in this instance, without previous reference to the Honorable the Court of Directors, to whom however it is his intention, in forwarding your representation, to submit a strong recommendation in its favor.

5. There are many circumstances which induce the Governor General in Council to consider that the proposition submitted on this occasion is peculiarly one to be decided by the home authorities, rather than by the Local Government. In the first place, the Honorable Court of Directors are themselves at considerable expense in keeping up a museum and library at the India house, and though his Lordship in Council concurs with you in thinking that such institutions in Europe, however perfect, do not supercede the necessity of providing similar in India likewise,—with reference especially to the spirit of literary inquiry and scientific research which it is desired to excite and encourage amongst the native youth of India; still the fact that the Honorable Court have a separate institution of their own, points to the propriety of making them the judges of its sufficiency or the contrary for Indian purposes; moreover, were the Government of India to sanction a specific annual grant for a museum and library in Calcutta under the management of your Society, such a grant would reasonably be made a precedent for similar applications from learned societies at other presidencies, and his Lordship in Council is not prepared to decide without a reference to England upon the relative claims of such societies with reference to the circumstances of the institutions themselves and of the presidencies and places where they may be established.

6. His Lordship in Council feels convinced that the Society may rely with confidence on the liberal disposition of the Honorable Court and on its desire to promote and encourage objects of public utility, especially such as have a tendency to advance knowledge and to extend the spirit of research, now peculiar to European nations, to the population of the countries under their Government: his Lordship in Council has therefore the less hesitation in referring the Asiatic Society's present representation to the decision of the home authorities.

I have the honor to be, &c.

H. T. PRINSEP,

Secy. to Govt.

Council Chamber, }
28th June, 1837. }

The Secretary then proposed, as the application to Government might be considered for the present at least as having failed, that the museum should be placed upon a reduced scale, retaining the services of the Messrs. BOUCHEZ as assistant Curators, and profiting by the voluntary attendance of Members who take an interest in the subject to supply the place of a paid Superintendent. He recommended the fixing of two mornings in the week at 6 A. M. as visiting mornings, which would obviate the inconvenience of such attendance; he thought a few minutes of co-operation and instruction to the assistant who was acknowledged to be skilful in the preparing and setting up of specimens, would suffice to maintain the museum in an efficient state; and he would issue invitations to all natu-

ralists not in the Society, and foreigners visiting the place for scientific objects, to join in these reunions.

After much discussion, the Lord Bishop proposed, seconded by Sir B. MALKIN, that as 200 rupees was the sum actually wanted to support the museum in its present state, a second application should be made to Government for a temporary grant of that amount, pending the reference to the Hon'ble the Court of Directors.

Colonel CAULFIELD proposed as an amendment, that in addition to the 200 rupees for the establishment, the Society should request a further monthly sum of 800 rupees to be expended on the collection of specimens of natural history and other objects of scientific interest, the produce to be made over to Government as a repayment of advances, in case of an unfavorable reply from the Hon'ble Court.

The amendment having been put from the chair was carried by a large majority.

Dr. D. STEWART, secretary of the Statistical Committee, communicated the following letter from Government on the subjects of the committee's researches which were now progressing with vigour, although very speedy or showy results were not yet to be expected. The following gentlemen (Members of the Society) had by invitation been joined to the Committee : MESSRS. G. T. MCCLINTOCK, H. PIDDINGTON, J. CURNIN, J. BIGNELL, J. BELL, Baboos PRASSONNOCOMAR TAGORE, and RUSOMOY DUTT.

To D. STEWART, Esq.

Sec. to the Statistical Committee of the As. Soc.

SIR,

I am directed by the Right Honorable the Governor of Bengal to acknowledge the receipt of your letter of the 17th ultimo, and to request that you will inform the Statistical Committee, that His Lordship has learnt with great satisfaction that the Asiatic Society has directed its attention to a subject of the utmost importance, for the details of which the Government has necessarily very little leisure.

The Governor will gladly permit the Committee to have access as they request to any Statistical documents of value which are deposited in any of the public offices and to make public such parts of their contents as may appear to deserve it.

The circular letter which you allude to, in your 3rd paragraph as having issued (under date the 25th of April last) to the several commissioners in the Lower Provinces, was merely a requisition upon the several functionaries of Government in the Judicial and Revenue Departments for all the aid which they could afford to the Medical officers employed in collecting Statistical information.

A copy of the instructions issued by the Medical Board to the officers under their authority above-mentioned, is annexed for the information of the Statistical Committee.

After perusing that paper in connexion with the circular from this Department above referred to, the Statistical Committee will perhaps be able to point out in what manner all the means employed or available may be so used in union or collaterally as to produce the effects most beneficial to the general interests of knowledge.

The Committee are probably aware that a number of essays on subjects of medical topography are in course of publication by the Medical Board.

I have, &c.

(Signed)

R. D. MANGLES,

Secy. to the Govt. of Bengal.

Fort William, }
6th June, 1837. }

Library.

The following books were presented :

The dispatches of the Marquis WELLESLEY, vol. III.—*presented by the Hon'ble Government of India.*

Marathee Atlas containing nine maps by DADODA PANDURING and NANA NARAYUN—*by the Author, through Mr. W. H. Wathen, Chief Sec. Bombay Government.*

Moysis Chorenensis Historial Arminiace Libri III. Armenian and Latin, London, 1736, Edition Whistoni—*by Mr. Elias Avdall, through Mr. J. Avdall.*

Eusebii Pamphili Caesariensis Episcopi Chronicon Bipartium, Armenian and Latin with Greek fragments, Venice, 1816, in 2 vols.—*by ditto, ditto.*

Meteorological Register for May, 1837—*by the Surveyor General.*

The Indian Review and Journal of Foreign Science and Arts for June and July—by Dr. Corbyn.

A manuscript history of *Juanpoor* in Persian, lent for the purpose of being copied. Also, the *Tohfeh-Tazeh*, or history of the present Rája's family of *Benares*—by Captain A. Cunningham, Engrs.

STIRLING on the countries between Persia and India—presented by the Author.

Literary.

Mr. Secretary MACNAGHTEN forwarded on the part of the Right Hon'ble the Governor General in Council, a MS. Grammar of the Brahuiky language, prepared by Lieutenant R. LEECH of the Bombay Engineers.

A note on the Ruins of old Mandivee in Cutch and a legend of VERJEE the son of VIKRAMADITYA, by Lieutenant J. POSTANS, was communicated by Mr. WATHEN, Chief Secretary, Bombay.

Read a letter from the Rev. Mr. STEVENSON of Bombay, forwarding his version of the lát alphabet and inscriptions.

Mr. STEVENSON has made known and lithographed his alphabet, and a portion of the lát inscription as read by him, in consequence of the announcement of the discovery of the alphabet in Calcutta which had been communicated to Mr. WATHEN, but which Mr. STEVENSON honorably requested might not be shewn to him until he had placed his own interpretation on record. The alphabet adopted by him is essentially different from that obtained by the analysis of the Bhilsa inscriptions, and in applying it to the *Delhi* lát the author has imagined the language of the latter to be Sanscrit: and he concludes the pillar to be "a Jayastambha or triumphal column erected by a sovereign of Márwár to celebrate his victories in Hindustan," results altogether at variance with those arrived at here.

The Secretary was induced by Mr. STEVENSON's communication to lay before the Society the transcript and translation he had yet hardly completed of the *Feroz* lát inscription.

It will be seen in Article II. of the present No. that the inscription is in the Magadhi language, and that it contains a series of edicts connected with the Buddhist faith issued by DEVANAMPIYA PIYADASI, a king of *Ceylon*, who was converted to Buddhism in the reign of DHARMA ASOKA about 300 years before Christ.

Captain S. W. BONHAM, *Dinapore*, presented a very small cocoanut obtained at *Arracan* and considered a curiosity.

Mr. HODGSON presented a box of *Nipal* snakes.

Physical.

Mr. SEPPINGS presented a piece of copper from the bottom of the ship *Guide* or *Wm. Wallace*, lately struck by lightning while in dock.

A hole of 8 inches diameter was pierced through the copper, although hardly a perceptible trace was left of the passage of the electric fluid through the plank in contact with it. The mast was shivered.

M. DELESSERT exhibited to the meeting the superb ichthyological collection made by himself for his uncle at *Paris*, during a residence of a few months in Calcutta.

Lord AUCKLAND presented the skeleton of a mouse-deer (*Moschus Javanicus*?) mounted in the museum.

The male and female of *Satyra*, presented by Dr. A. CAMPBELL, also three jungle fowl, *Phasianus gallus*, ditto.

Colonel D. M. MACLEOD Chief Engineer, presented a third fragment of fossil bone (ferruginous) brought up by the auger in the Fort from a depth of 375 feet. He subsequently added the following particulars of the progress of the boring:—

Boring operations at Fort William, July 5th, 1837.

"The Chief Engineer has the satisfaction of stating that at length a stratum of clay has been reached, at a depth of 380 feet, and that the auger having penetrated 18 inches further has brought up blue clay mixed with a large quantity of apparently decayed wood, a specimen of which accompanies; the tubes have only gone down 377 feet, but it is hoped that they may be forced down through the remainder of the bed.

of sand to the clay to-morrow, when by a cessation of the influx of sand the operation will proceed with much more rapidity."

The appearance of the clay is precisely that of the black peat-clay found at the depth of 14 to 20 feet below the surface, and it must be the debris of a similar *Sundarban* tract formed anterior to the deposit of the 380 feet of superincumbent sand and clays. The wood is highly charred, but by no means converted into coal.

Col. MACLEOD also presented a specimen of a two-headed snake caught alive at *Moorshedabad*.

Mr. W. T. BAXTER, Branch-pilot, presented a specimen in spirits of the sea-horse taken off *Point Palmiras*.

Major DAVIDSON, Engrs., described a species of flying serpent which he believed to be unknown to naturalists.

B. H. HODGSON, Esq. gave the following description of the *Gauri Gau* of the *Nipal* forest.

"With infinite trouble and expense I have at length procured complete spoils of both sexes of the *Gauri Gau*. The ribs are but 13 pair: the skulls of both male and female are alike distinguished by enormous size, and by a broad, and long, and flat forehead surmounted by a prodigious semicylindric crest. It is the spinous processes of the dorsal vertibræ only, that cause the extra ordinary elevation of the fore-quarters, those of the cervical not being raised at all. The elevation extends longitudinally from the first to the last pair of ribs, rising and falling suddenly, but with the rise more abrupt than the fall. The extreme elevation is 14 inches above the spinal column, and is reached by the third process from the anterior extremity. Here, then is a singular animal; Bos as to the number of the ribs and as to the general form of the cranium, but surely distinguished sufficiently from Bos, as a separate subgeneric type, by the far greater size of the skull, the astonishing development of its frontal crest, and the no less remarkable development of the spinous processes of the dorsal vertebrae, which last osteological peculiarity gives the live animal the appearance of a camel or camel-leopard if the head be concealed.

"I call this type Bibos, a name that is equally good if it be supposed to indicate an ox of unusual magnitude (quasi Bis and Bos) or an animal osculant between Bison and Bos (quasi Bi—Bos). You remember my delineations of the skull comparatively with those of the tame and wild buffalo and tame ox. No one could look at them and suppose this animal a Bison, if the correctness of CUVIER's view were admitted: and, for my part, I have always regarded the *Gauri Gau* as a separate link between Bos and Bison. But it is only within the last week that, by procuring complete skeletons of both sexes, I have satisfied myself of the fact. I have not the least doubt that the Urus of the ancients (known to us only by fossil crania) was a *Bibos*, that is, an animal of the same type as our living Indian wild bull of the saul forest, and of other wilds. Whether my animal be the *Gaurus* or the *Gavæus* of books, no soul can tell; for the sufficing reason that there is no adequate or admissible account of either of the latter in books. Some call these creatures bulls; others call them Bisons:—what they really be, we know not; and therefore I shall give my type a separate specific name or *Subhemachalus*.

"The *Gauri Gau*, then, of the saul forest is *Bibos Subhemachalus*, nob., and type of the new subgenus Bibos. The Society shall have a very full and particular account of it presently; meanwhile the osteological peculiarities already spoken of, stamp our animal with a very striking character of novelty, whilst they give a singular revived interest to whatever the classics have left us about their Urus.

"The hair is as close and glossy as in Bos, only somewhat elongated and curled on the forehead and knees: the colors are usually red or black or piebald, the tail does not reach to the hock, in other words, is very short; all structural peculiarities fall into the subgeneric character: the specific character may be given in two words.

"Large wild Indian Bibos with close glossy hair, of a red or black color, ten feet from snout to rump, and five and a half feet high at the shoulder, *Gauri Gau* of Hindus."

Dr. SPILSBURY presented part of the fossil jaw of a horse, from *Brimham Ghat*, discovered by Mr. SMITH.

Also fossil shells of reversed whorls silicified, from *Sao Kharn Ghat*, ten kos west of *Baitool*, similar exactly to those noticed by Dr. VOYSEY in the *Gawilgiri* trap.

VIII.—Meteorological Register.

Meteorological Register, kept at the Assay Office, Calcutta, for the Month of June, 1837.

Day of the Month.	Observations at 10 A. M.							Calculated Humidity.				Observations at 4 P. M.							Calculated Humidity.				Register Ther- mometer extremes.	Wind.	Weather.	
	Old Stand. Barometer at 32°.	New Stand. Barometer reduced.	Thermome- ter in air.	Depression of wet-bulb.	Do. by Les. His Hygro.	Dew-point.	Hair Hy- grometer.	Old Stand. Barometer at 32°.	New Stand. Barometer reduced.	Thermome- ter in air.	Depression of wet-bulb.	Do. by Les. His Hygro.	Dew-point.	Hair Hy- grometer.	Centesimal tension of vapour by Do. by hair Hygrom.	Ditto by dew-point.	Cold on roof.	Heat in sun's rays on roof.	Rain.	10 A. M.	4 P. M.	Morning.			Evening.	
1	29.467	398	95.3	12.6	13.4	74.6	84	66	52	370	294	97.7	13.2	19.3	73	37	48	83.2				S. W.	O.	clouds.	cloudy.	
2	29.491	424	94.5	23.8	26.3	65.5	61	24	32	370	290	100.5	29.1	28.5	58.8	51	23	79.8				N. W.	N. W.	haze.	Hh. wind.	
3	29.564	489	93.3	24.0	26.3	57.3	56	22	31	464	378	102.3	35.2	35.6	50.0	48	20	75.1				O.	O. W.	do	hazy.	
4	29.588	548	95.2	25.2	26.3	53.0	62	20	27	464	409	102.7	32.7	35.0	50.0	40	12	76.2				W.	W.	do	do	
5	29.641	584	94.7	14.3	16.2	72.0	80	50	29	546	478	99.9	17.2	18.1	72.7	75	40	77.4				S. W.	W.	cir. cum.	fine.	
6	29.663	608	91.7	8.8	10.5	74.9	88	67	74	570	484	96.5	12.9	15.0	73.6	82	55	81.2				S. W.	S. W.	fine.	do	
7	29.634	670	92.9	8.2	10.1	75.1	89	70	57	560	474	96.4	11.7	13.6	76.3	84	60	83.2				S. W.	S. W.	clear.	clear.	
8	29.708	631	92.9	9.5	11.2	75.7	88	65	57	583	516	95.5	11.7	13.2	75.7	85	60	84.2				S. W.	S. W.	cum.	cumuli.	
9	29.760	683	86.9	6.9	8.3	72.7	91	72	60	623	547	93.3	10.5	11.8	73.4	86	61	72.0				N. W.	S. W.	cloudy.	overcast.	
10	29.708	631	90.2	6.7	9.0	75.7	86	74	64	554	503	96.0	13.4	15.5	75.4	75	54	72.0				S. W.	S. W.	cum. str.	clear.	
11	29.620	596	91.7	8.6	11.5	76.5	81	63	61	528	466	96.5	12.7	14.2	75.0	76	57	82.4				S. W.	S.	clear.	haze.	
12	29.618	553	93.6	8.7	11.9	76.0	81	67	66	512	443	96.9	13.6	13.8	75.0	75	55	83.5				S. W.	S.	clear.	drizzle.	
13	29.542	573	93.6	8.0	11.9	75.0	84	70	65	475	429	92.5	8.8	8.7	79.4	85	51	84.5				S. E.	S.	do	haze.	
14	29.520	464	93.5	7.1	10.3	78.3	86	73	70	421	352	95.1	14.0	15.4	73.7	75	52	82.2				S. E.	N. W.	do	threatg.	
15	29.495	433	94.2	7.4	10.4	78.3	88	72	74	360	291	101.5	19.8	25.0	65.2	66	36	74.5				W.	S. E.	do	do cloudy.	
16	29.430	378	98.9	16.0	20.2	71.0	70	40	42	238	243	102.9	22.2	25.7	64.6	61	34	80.0				W.	O.	do	clouds.	
17	29.444	346	97.3	17.3	20.0	69.0	71	40	45	314	272	97.5	15.5	15.0	74.2	71	40	82.0				N. W.	N. W.	do	nimbi.	
18	29.522	484	83.2	5.2	8.4	79.7	89	80	76	467	282	85.5	2.6	4.7	80.0	95	65	80.6				N. E.	O.	do clear.	storm.	
19	29.622	586	85.2	3.2	5.6	77.8	94	87	84	504	523	85.5	2.6	4.7	80.0	95	65	81.2				N. E.	N. E.	hazy.	do	
20	29.750	700	86.5	3.2	5.7	77.8	93	86	87	686	632	89.7	7.1	9.3	75.5	86	72	77.5				O.	E.	showery.	do	
21	29.805	755	83.9	2.0	4.3	76.8	96	90	80	689	630	88.0	4.6	7.4	76.7	90	70	75.0				S. E.	S. W.	cloudy.	do	
22	29.725	663	87.9	4.4	2.9	75.4	89	82	76	608	540	93.1	4.9	8.5	76.3	86	81	76.6				S. E.	S. W.	overcast.	cum. str.	
23	29.660	601	88.3	3.6	6.7	76.7	92	93	82	536	500	89.3	2.3	3.0	80.0	74	70	75.2				S.	S.	haze.	do fine.	
24	29.602	569	87.8	1.5	2.4		92	93	82	563	522	82.5	2.6	3.0		82	80	80.0				S.	S.	do	do	
25	29.584	541	88.1	1.7	2.5		92	92	82	563	500	89.3	2.3	3.0		82	80	80.0				S.	S.	haze.	threatg.	
26	29.597	536	86.3	0.3	3.3		94	94	84	479	436	87.0	4.1	6.3	78.8	88	87	71.2				S. W.	S. W.	haze.	strm. rain.	
27	29.560	536	85.0	1.8	5.0	76.2	92	87	80	455	455	82.9	2.3	3.0	77.0	94	90	71.0				S. W.	S. E.	cloudy.	nimbi.	
28	29.598	549	85.1	3.3	5.4	75.9	91	85	80	460	419	90.7	1.7	9.8	75.8	83	87	75.5				S. W.	S. W.	do	rain.	
29	29.543	497	87.5	2.8	6.0	77.7	92	87	72	479	429	85.4	3.8	6.3	76.7	89	76	81.0				S. W.	S. W.	do	hazy.	
30																						S. W.	N.	cir. str.	threatg.	
Mean,	29.602	550	90.8	8.5	10.7	74.0	84	68	60	29.502	442	94.0	12.3	13.8	72.5	78	59	78.0			4.70	S. W.			Rains set in light and late.	

Finding so great a discrepancy in the tension shown by the hair hygrometer I have recomputed the hundredth degree or extreme moisture and find it to reach 102.5 which will necessitate a correction of the tensions to the amount of about 6 per cent. Being a new hair, it had not become properly stretched when first set up.—J. P.

